

INTEON 100 1217 Book 1

**syngenta**

Montague U. Dixon, III  
Operator and Residential  
Safety Specialist

Syngenta Crop Protection, Inc.  
Post Office Box 18300  
Greensboro, NC 27419-8300  
Tel. 336-632-7055  
Fax 336-632-7645  
www.syngenta.com  
monty.dixon@syngenta.com



Cover & Forins

GRAMOXONE INTEN

100-1217



Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419-8300  
www.syngenta.com

**FEDERAL EXPRESS**

September 13, 2004

Mr. Jim Tompkins, PM 25  
Office of Pesticide Programs (H7504C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1801 South Bell Street  
Arlington, VA 22202-4501

**SUBJECT: Request for New Registration for Gramoxone Inteon, EPA Reg. No. 100-**

Dear Mr. Tompkins:

Syngenta Crop Protection requests the Agency consider the enclosed applications for pesticide registration of a new herbicide containing the active ingredients paraquat dichloride. All data required for this registration is herein submitted. See attached Confidential Attachment A for additional details on this submission.

**Attachments:**

- ◇ Application for Pesticide Registration, EPA Form 8570-1
- ◇ Certification with Respect to Citation of Data form
- ◇ Confidential Attachment A
- ◇ 2 copies of the CSF
- ◇ 5 paper copies of the proposed label
- ◇ One electronic copy on CD
- ◇ Certification with Respect to Label Integrity
- ◇ Transmittal document and studies listed therein
- ◇ A data matrix for the paraquat technical

Please contact me at (336) 643-6324 if there are any questions regarding this submission.

Kind regards,

Jerry Wells  
Regulatory Product Manager

Enclosures

**--CONFIDENTIAL BUSINESS INFORMATION--**


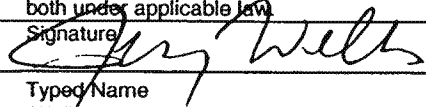
**CONFIDENTIAL ATTACHMENT A.**

Gramoxone Inteon is a new and novel formulation of paraquat dichloride. The formulation is designed to gel in the event it enters the human stomach as a result of accidental or intentional ingestion. The gelling and increased levels of emetic are intended to minimize the entry of paraquat into the intestine where much of the absorption occurs. The formulation also offers some improvement in dermal effects. For purposes of review, the formulation identified as A7813K, a 240g/l paraquat dichloride formulation (2 lb. of cation per gallon) and Gramoxone Inteon are one and the same. The formulation contains a new olfactory alerting agent, cis-3-Hexen-ol. A petition, 3E6589, for an exemption from tolerance was submitted April 8, 2003 and is listed on EPA's inert workplan for a decision in 4Q 2004. We understand this will likely be pushed back on EPA's workplan for 1Q 2005.

A "5 pack" of acute toxicity studies is being submitted with this application. An acute inhalation study will not be conducted with the formulation. Syngenta proposes to defer to the study conducted on the currently registered paraquat dichloride formulation. The results indicate a Category I classification and a new study would almost certainly not improve the classification. For this reason and the non-respirable particle size of spray droplets, Syngenta will propose a Category I classification for acute inhalation toxicity be assigned for this formulation. The MRID for the study we are citing to fulfill this requirement is MRID 00046105.

In addition to the routine acute studies, Syngenta is submitting studies for review that are relevant to the improved acute oral toxicity. The improvement is not applicable in rodents, as they cannot regurgitate. A study was conducted on dogs to provide proof of concept and an indication of the level of improved safety. This study and a study summarizing previous work with the unimproved formulation are included in this submission.

Finally, Syngenta is also submitting studies that support a 200g/l formulation. We are not requesting US registration of this formulation. They are submitted to support the cooperative effort between USEPA and the Ministry of Health in Mexico in registering similar formulations with the new safety feature. The acute toxicity studies and a similar set of dog studies as previously described are included in this submission. The studies that are relevant to the 200g/l formulation are included in volumes 13 through 19 in the attached transmittal document.

 <b>United States</b> <b>Environmental Protection Agency</b> Washington, DC 20460		<input checked="" type="checkbox"/> <b>Registration</b> <input type="checkbox"/> <b>Amendment</b> <input type="checkbox"/> <b>Other</b>	OPP Identifier Number  
<b>Application for Pesticide - Section I</b>			
1. Company/Product Number 100-		2. EPA Product Manager Jim Tompkins	
4. Company/Product (Name) Gramoxone Inteon		3. Proposed Classification  <input type="checkbox"/> None <input checked="" type="checkbox"/> Restricted	
5. Name and Address of Applicant (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419  <input type="checkbox"/> Check if this is a new address		6. <b>Expedited Review.</b> In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:  EPA Reg. No.    100-1009 Product Name    Cyclone Herbicide	
<b>Section - II</b>			
<input type="checkbox"/> Amendment - Explain below. <input type="checkbox"/> Final printed labels in response to Agency letter dated _____ <input type="checkbox"/> Resubmission in response to Agency letter dated _____ <input type="checkbox"/> "Me Too" Application. <input type="checkbox"/> Notification - Explain below. <input checked="" type="checkbox"/> Other - Explain below.			
<b>Explanation:</b> Use additional page(s) if necessary. (For Section I and Section II.). New product registration for Gramoxone Inteon			
<b>Section - III</b>			
1. <b>Material This Product Will Be Packaged In:</b>			
Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  If "Yes"                      No. per Unit Packaging wgt.    Container	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  If "Yes"                      No. per Unit Packaging wgt.    container	2. Type of Container <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
*Certification must be submitted			
3. Location of Net Contents Information  <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 2.5, 30, 120 Gallons and Bulk	
		5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product		<input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled <input checked="" type="checkbox"/> Other <u>Pressure Sensitive</u>	
<b>Section - IV</b>			
1. <b>Contact Point</b> (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)			
Name Jerry Wells		Title Regulatory Product Manager	Telephone No. (Include Area Code) 336-632-6324
<b>Certification</b> I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.			6. Date Application Received (Stamped)
2. Signature 		3. Title Regulatory Product Manager	
4. Typed Name Jerry Wells		5. Date 9/14/04	



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

401 M STREET, S.W.  
WASHINGTON, D.C. 20460

**Paperwork Reduction Act Notice:** The public reporting burden for this collection of information is estimated to average 1.25 hours per response for registration activities and 0.25 hours per response for reregistration and special review activities, including time for reading the instructions and completing the necessary forms. Send comments regarding burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460. Do not send the completed form to this address.

## Certification with Respect to Citation of Data

Applicant's/Registrant's Name, Address, and Telephone Number Syngenta Crop Protection, Inc., P.O. Box 18300, Greensboro, NC 27419 336-632-6000	EPA Registration Number/File Symbol 100-
Active Ingredient(s) and/or representative test compound(s) paraquat dichloride	Date 9-14-04
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158) Terrestrial Food, Terrestrial Non-Food, Forestry	Product Name Gramoxone Inteon

**NOTE:** If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

☐ I am responding to a Data-Call-in Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

## SECTION I: METHOD OF DATA SUPPORT (Check one method only)

☐ I am using the cite-all method of support, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

☒ I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).

## SECTION II: GENERAL OFFER TO PAY

[Required if using the cite-all method or when using the cite-all option under the selective method to satisfy one or more data requirements]

☐ I hereby offer and agree to pay compensation, to other persons, with regard to the approval of this application to the extent required by FIFRA.

## SECTION III: CERTIFICATION

I certify that this application for registration, this form for reregistration, or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for reregistration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section I, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, or one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses.

I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitter to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; or (e) I have notified in writing the company that submitted the study and have offered (i) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

I certify that in all instances where an offer of compensation is required, copies of all offers to pay compensation and evidence of their delivery in accordance with sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA are available and will be submitted to the Agency upon request. Should I fail to produce such evidence to the Agency upon request, I understand that the Agency may initiate action to deny, cancel or suspend the registration of my product in conformity with FIFRA.

I certify that the statements I have made on this form and all attachments to it are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

Signature

Date

9-14-04

Typed or Printed Name and Title

Jerry Wells, Regulatory Product Manager

EPA Form 8570-34 (9-97) Electronic and Paper versions available. Submit only Paper version.

CSF



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460  
**Confidential Statement of Formula**

A.  
☒ Basic Formulation  
☐ Alternate Formulation

B.  
Page 1 of 6

CSF364/1

1. Name and Address of Applicant/Registrant (Include ZIP Code)  
Syngenta Crop Protection, Inc.  
P. O. Box 18300  
Greensboro, NC 27419

2. Name and Address of Producer (Include ZIP Code)  
Syngenta Crop Protection, Inc.  
P. O. Box 18300  
Greensboro, NC 27419

3. Product Name

Gramoxone Inteon  
(A7813K)

4. Registration No./File Symbol  
100-

5. EPA Product Mgr./Team No.  
James Tompkins/25

6. Country Where Formulated  
U.S.A.

7. Pounds/Gal. Bulk Density  
9.2 lbs/gal (typical)

8. pH 5-7 (1% dispersion  
in H<sub>2</sub>O at 25°C)

9. Flash Point/Flame Extension  
>217° F (>103°C)

EPA USE ONLY

10. Components in Formulation (List as actually introduced into the formulation. Give commonly accepted chemical name, trade name, and CAS number.)

11. Supplier Name &amp; Address

12. EPA Reg. No.

13. Each Component  
in Formulation  
a. Amount b.% by wt.

14. Certified Limits  
% by Weight  
a.Upper Limit b.Lower Limit

15. Purpose in Formulation

The following information is claimed by Syngenta Crop Protection, Inc. to be confidential and a trade secret under FIFRA Section 10.

Paraquat Concentrate ES:  
CAS Name: 1,1'-dimethyl-4,4'-bipyridinium  
dichloride; PP148  
(nominal a.i. 45.6% as paraquat dichloride)  
CAS No.: 1910-42-5

Syngenta Crop Protection, Inc.  
Greensboro, NC

100-1067

6,600 lbs.

66.0

Active  
Ingredient

[ \*Paraquat Dichloride as 100% pure  
active

30.1

31.0

29.2 ]

CAS Name: 2-amino-6-methyl-4-propyl-  
[1,2,4]triazolo[1,5- $\alpha$ ]pyrimidin-5(4H)-one;  
IUPAC Name: 2-amino-4,5-dihydro-6-  
methyl-4-propyl-s-triazole-[1,5-  
 $\alpha$ ]pyrimidin-5-one;  
CAS No.: 27277-00-5

8.2 lbs.

0.082

0.090

0.074

Emetic\*\*

PP796 Paraquat Emetic

Syngenta Crop Protection, Inc.  
Greensboro, NC

16. Typed Name of Approving Official

Jerry Wells

17. Total Weight  
10,000 lbs

100%

18. Signature of Approving Official

19. Title

Regulatory Product Manager

20. Phone No. (Include Area Code)  
(336) 632-6324

21. Date

7-26-04

EPA Form 8570-4 (Rev. 2-85) Previous editions are obsolete.

I:\Confidential Statements of Formula\End Use Products\A7813K(CSF364-1)Gramoxone Inteon.doc; was 20-Jul-04

Original and Second copy to EPA.  
Third copy to Applicant



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460  
**Confidential Statement of Formula**

A. ☒ Basic Formulation  
☐ Alternate Formulation

B. Page 2 of 6

CSF364/1

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Greensboro, NC 27419

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100-7. Pounds/Gal. Bulk Density  
9.2 lbs/gal (typical)5. EPA Product Mgr./Team No.  
James Tompkins/258. pH 5-7 (1% dispersion  
in H<sub>2</sub>O at 25°C)6. Country Where Formulated  
U.S.A.9. Flash Point/Flame Extension  
>217° F (>103°C)

EPA USE ONLY

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11. Supplier Name &amp; Address

12. EPA Reg. No.

13. Each Component in Formulation  
a. Amount b. % by wt.14. Certified Limits % by Weight  
a. Upper Limit b. Lower Limit

15. Purpose in Formulation

Magnesium sulfate heptahydrate  
(epsom salt)  
CAS No.: 10034-99-8

Magnesium sulfate heptahydrate  
CAS No.: 10034-99-8 or

PQ Corporation  
Valley Forge, PA

180.910

563 lbs.

5.63

5.91

5.35

Stabilizer

Magnesium sulfate heptahydrate  
CAS No.: 10034-99-8 or

Giles Chemical Corporation  
Waynesville, NC

180.910

Magnesium sulfate heptahydrate  
CAS No.: 10034-99-8

K&S Kali GmbH  
Kassel, Germany

180.910

Sodium alginate  
CAS No.: 9005-38-3

82 lbs.

0.82

0.90

0.74

Stabilizer

Manutex RM

International Specialty Products  
Girvan, United Kingdom

180.950

\*\*\*Dimethylpolysiloxane  
CAS No.: 63148-62-9

2.3 lbs.

0.023

0.030

0.016

Antifoam

16. Typed Name of Approving Official

Jerry Wells

17. Total Weight  
10,000 lbs

100%

18. Signature of Approving Official

19. Title

Regulatory Product Manager

20. Phone No. (Include Area Code)  
(336) 632-6324

21. Date

7-26-04

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Third copy to Applicant

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CONFIDENTIAL - PARAQUAT LITIGATION

SYNG-PQ-01775351  
SYNG-PQ-01775351\_R





United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460  
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Page 3 of 6

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3. Product Name

Gramoxone Inteon  
(A7813K)

4. Registration No./File Symbol  
100-

7. Pounds/Gal. Bulk Density  
9.2 lbs/gal (typical)

5. EPA Product Mgr./Team No.  
James Tompkins/25

8. pH 5-7 (1% dispersion  
in H<sub>2</sub>O at 25°C)

6. Country Where Formulated  
U.S.A.

9. Flash Point/Flame Extension  
>217° F (>103°C)

EPA USE ONLY

10. Components in Formulation (List as actually introduced into the formulation. Give commonly accepted chemical name, trade name, and CAS number.)

11. Supplier Name & Address

12. EPA Reg. No.

13. Each Component in Formulation  
a. Amount b. % by wt.

14. Certified Limits % by Weight  
a. Upper Limit b. Lower Limit

15. Purpose in Formulation

Antifoam MSA

Dow Corning Corporation  
Midland, MI

180.960

\*\*\*Octyl and decyl glucosides mixture with a mixture of octyl and decyloligosaccharides and related reaction products produced as an aqueous-based liquid (68-72% solids) from the reaction of straight chain alcohols (C<sub>8</sub> (45%), C<sub>10</sub> (55%) with anhydrous glucose  
CAS No.: 68515-73-1

91 lbs.

0.91

1.18

0.64

Surfactant

Agnique PG 8107  
(formerly Agrimul PG 2067) or

Cognis (AgroSolutions)  
Cincinnati, OH

180.910

AL-2575

Uniqema  
Wilmington, DE

180.910 &  
Master File  
115

Cis-3-hexenol (leaf alcohol)  
CAS No.: 928-96-1

18 lbs.

0.18

0.20

0.16

Stench

Cis-3-Hexenol  
CAS No.: 928-96-1 or

Shin-Etsu Chemical Co., LTD  
Tokyo, Japan

16. Typed Name of Approving Official

Jerry Wells

17. Total Weight 100%  
10,000 lbs

18. Signature of Approving Official

19. Title

Regulatory Product Manager

20. Phone No. (Include Area Code)  
(336) 632-6324

21. Date

7-26-04

Original and Second copy to EPA.  
Third copy to Applicant

EPA Form 8570-4 (Rev. 2-86) Previous editions are obsolete.

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6.37

CONFIDENTIAL - PARAQUAT LITIGATION

SYNG-PQ-01775352  
SYNG-PQ-01775352\_R



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460  
**Confidential Statement of Formula**

A. ☒ Basic Formulation  
☐ Alternate Formulation

B. Page 4 of 6

CSF364/1

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P. O. Box 18300  
Greensboro, NC 27419

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Syngenta Crop Protection, Inc.  
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Gramoxone Inteon  
(A7813K)

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9.2 lbs/gal (typical)5. EPA Product Mgr./Team No.  
James Tompkins/258. pH 5-7 (1% dispersion  
in H<sub>2</sub>O at 25°C)6. Country Where Formulated  
U.S.A.9. Flash Point/Flame Extension  
>217° F (>103°C)

EPA USE ONLY

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13. Each Component in Formulation  
a. Amount b. % by wt.14. Certified Limits  
% by Weight  
a. Upper Limit b. Lower Limit

15. Purpose in Formulation

Cis-3-Hexenol  
CAS No.: 928-96-1

Zeon Corporation  
Tokyo, Japan

\*\*\*Sodium Hydroxide (25%)  
(caustic soda)  
CAS No.: 1310-73-2

32 lbs.

0.32

0.42

0.22

Neutralizer

Sodium Hydroxide  
CAS No.: 1310-73-2

or

Occidental Chemical  
Corporation  
Dallas, TX

180.910

Sodium Hydroxide  
CAS No.: 1310-73-2

or

Pioneer  
Houston, TX

180.910

Sodium Hydroxide  
CAS No.: 1310-73-2

or

Vulcan Chemicals  
Birmingham, AL

180.910

Sodium Hydroxide  
CAS No.: 1310-73-2

or

Dow Corning Corporation  
Midland, MI

180.910

Sodium Hydroxide  
CAS No.: 1310-73-2

LabChem, Inc.  
Pittsburgh, PA

180.910

16. Typed Name of Approving Official

Jerry Wells

17. Total Weight 100%  
10,000 lbs

18. Signature of Approving Official

19. Title

Regulatory Product Manager

20. Phone No. (Include Area Code)  
(336) 632-6324

21. Date

7-26-04

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CONFIDENTIAL - PARAQUAT LITIGATION

SYNG-PQ-01775353  
SYNG-PQ-01775353\_R



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460  
**Confidential Statement of Formula**

A. ☒ Basic Formulation  
☐ Alternate Formulation

B. Page 5 of 6

CSF364/1

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James Tompkins/25

8. pH 5-7 (1% dispersion  
in H<sub>2</sub>O at 25°C)

6. Country Where Formulated  
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9. Flash Point/FIame Extension  
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11. Supplier Name & Address

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13. Each Component in Formulation  
a. Amount b. % by wt.

14. Certified Limits % by Weight  
a. Upper Limit b. Lower Limit

15. Purpose in Formulation

\*\*\*FD&C Blue No. 1  
CAS No.: 3844-45-9

No. 00357 Blue Liquid Color

Sensient Colors, Inc.  
(formerly Warner-Jenkinson)  
St. Louis, MO

180.910

35 lbs.

0.35

0.46

0.25

Dye

\*\*\*\*Water

2568.5 lbs.

25.685

28.6

22.8

Diluent

The certified limits have been calculated according to the regulations published in 40 CFR 158.175, except where indicated.

\* Nominal 30.1% as Paraquat Dichloride (as 100% pure active) corresponds to 21.8% as Paraquat Ion (as 100% pure active).

\*\* This emetic concentration does not include the emetic carried over from Paraquat Concentrate ES (EPA Reg. No. 100-1067).

\*\*\* Extended ranges are being requested to allow for minor adjustments to the manufacturing process in accordance with 40 CFR 158.175(c). The limits do not exceed 3 times the standard certified limits. The expanded certified limits ensure that the final product conforms to the 95% confidence level relative to the weight percentage of each ingredient. This expanded range will not affect the risk or efficacy of the product. The actual product used in all testing accounted for this variability and conformed to the expanded limits criteria. Thus the expanded limits should not impact the performance of the commercial product.

\*\*\*\* Level will vary based on the allowable variation of the actual assay value for the active ingredient(s).

16. Typed Name of Approving Official

Jerry Wells

17. Total Weight

10,000 lbs

100%

18. Signature of Approving Official

19. Title

Regulatory Product Manager

20. Phone No. (include Area Code)

(336) 632-6324



21. Date

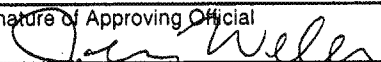
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\\Confidential Statements of Formula\\End Use Products\\A7813K(CSF364-1)Gramoxone Inteon.docx was 20-Jul-04

Original and Second copy to EPA  
Third copy to Applicant

 United States Environmental Protection Agency Office of Pesticide Programs (TS-767) Washington, DC 20460 <b>Confidential Statement of Formula</b>		A. <input checked="" type="checkbox"/> Basic Formulation <input type="checkbox"/> Alternate Formulation		B. Page 6 of 6		CSF364/1	
1. Name and Address of Applicant/Registrant (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419				2. Name and Address of Producer (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419			
3. Product Name  Gramoxone Inteon (A7813K)				4. Registration No./File Symbol 100-		5. EPA Product Mgr./Team No. James Tompkins/25	
				7. Pounds/Gal. Bulk Density 9.2 lbs/gal (typical)		8. pH 5-7 (1% dispersion in H <sub>2</sub> O at 25°C)	
						9. Flash Point/Flame Extension >217° F (>103°C)	
EPA USE ONLY		10. Components in Formulation (List as actually introduced into the formulation. Give commonly accepted chemical name, trade name, and CAS number.)		11. Supplier Name & Address		12. EPA Reg. No.	
						13. Each Component in Formulation a. Amount b. % by wt.	
						14. Certified Limits % by Weight a. Upper Limit b. Lower Limit	
						15. Purpose in Formulation	
<p>I hereby certify that, for purposes of FIFRA sec. 12(a)(1)(C), the description of the composition of Gramoxone Inteon (A7813K), EPA Reg. No. 100- , refers to the composition set forth on the Statement of Formula. This description includes the representations that: (1) no ingredient will be present in the product in an amount greater than the upper certified limit or in an amount less than the lower certified limit specified for that ingredient in this Statement of Formula; and (2) if the Agency requires that the source of supply of an ingredient be specified, that all quantities of such ingredient will be obtained from the source specified in the Statement of Formula.</p> <p style="text-align: center;"> SIGNATURE Henry Agbaje, Ph.D.</p> <p style="text-align: right;"><u>July 23, 2004</u> DATE</p>							

16. Typed Name of Approving Official Jerry Wells		17. Total Weight 10,000 lbs		100%	
18. Signature of Approving Official 		19. Title Regulatory Product Manager		20. Phone No. (Include Area Code) (336) 632-6324	
				21. Date 7-26-04	

Original and Second copy to EPA.  
Third copy to Applicant

EPA Form 8570-4 (Rev. 2-85) Previous editions are obsolete.

I:\Confidential Statements of Formula\End Use Products\A7813K(CSF364-1)Gramoxone Inteon.doc; was 20-Jul-04

CONFIDENTIAL - PARAQUAT LITIGATION

SYNG-PQ-01775355  
SYNG-PQ-01775355\_R

TRANSMITTAL

**VOLUME 1 OF 19 OF SUBMISSION  
(TRANSMITTAL DOCUMENT)**

**1. Name and Address of Submitter**

Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419

**2. Regulatory Action in Support of which this Package is Submitted**

Submission of New Registration for Gramoxone Inteon, EPA Reg. No. 100-XXXX

**3. Transmittal Date**

9/14/2004

**4. List of Submitted Studies**

MRID NUMBER	VOLUME NUMBER	STUDY TITLE	EPA GUIDELINE NUMBER
	1 OF 19	Transmittal document	NA
	2 OF 19	Manufacturing Process Description and Supporting Data for Paraquat Dichloride SL (A7813K);(PC-04-072), (09003aeb80160404),(431505)	830.1550, 830.1600, 830.1650, 830.1670, 830.1750, 830.1800
	3 OF 19	Physical and Chemical Properties of Paraquat Dichloride SL (A7813K);(PC- 04-073),(09003aeb80160404),(431506)	830.6302, 830.6303, 830.6304, 830.6314, 830.6315, 830.6316, 830.6317, 830.6319, 830.6320, 830.6321, 830.7000, 830.7100, 830.6317,
	4 OF 19	Paraquat 240 g/l SL Formulation (A7813K) -Acute Oral Toxicity in the Rat -Up and Down Procedure;(006/438), (09003aeb80160404),(432246)	870.1100

MRID NUMBER	VOLUME NUMBER	STUDY TITLE	EPA GUIDELINE NUMBER
	5 OF 19	Paraquat 240g/l SL Formulation (A7813K) -Acute Dermal Irritation in the Rabbit;(006/406), (09003aeb80160404),(432260)	870.2500
	6 OF 19	Paraquat 240 g/l SL Formulation (A7813K) -Acute Dermal Toxicity (Limit Test) in the Rat;(006/439), (09003aeb80160404),(432247)	870.1200
	7 OF 19	Paraquat 240 g/l SL Formulation (A7813K) -Acute Eye Irritation in the Rabbit;(006/407),(09003aeb80160404), (432245)	870.2400
	8 OF 19	Dermal Sensitization Study in Guinea Pigs (Buehler Method) with Paraquat (240 g/L) and PP796 (1.5 g/L) SL (A7813K);(T001178-04), (09003aeb80160404),(431581)	870.2600
	9 OF 19	Dermal Sensitization Study in Guinea Pigs (Buehler Method) with alpha- Hexylcinnamaldehyde,Technical; (T013408-04),(09003aeb80160404), (431587)	870.2600
	10 OF 19	Summary of Acute Toxicology Studies with Paraquat 240g/l Formulation (A7813K);(T017586-04), (09003aeb80160404),(432510)	NA
	11 OF 19	Paraquat 240g/l SL Formulation (A7813K) -Toxicokinetic Study in the Dog;(XD7355),(09003aeb80160404), (432825)	NA
	12 OF 19	Gramoxone 200g/l SL Formulation (A3879D) -Toxicokinetic Study in the Dog;(XD7388),(09003aeb80160404), (432824)	NA

MRID NUMBER	VOLUME NUMBER	STUDY TITLE	EPA GUIDELINE NUMBER
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13 OF 19      Paraquat 200g/l SL Formulation  
(A3879BU) -Eye Irritation Study in the  
Rabbit;(FB6020),(09003aeb80160404),  
(432827)      870.2400

14 OF 19      Paraquat 200g/l SL Formulation  
(A3879BU) -Skin Irritation Study in the  
Rabbit;(EB5012),(09003aeb80160404),  
(432826)      870.2500

15 OF 19      Paraquat 200g/l SL Formulation  
(A3879BU) -Acute Dermal Toxicity  
Study in the Rat;(CR3618),  
(09003aeb80160404),(432823)      870.1200

16 OF 19      Paraquat 200g/l SL Formulation  
(A3879BU) -Acute Oral Toxicity Study  
in the Rat -Up and Down Procedure;  
(AR7304),(09003aeb80160404),  
(432822)      870.1100

17 OF 19      Paraquat 200g/l SL Formulation  
(A3879BU) -Skin Sensitisation Study in  
the Guinea Pig;(GG7729),  
(09003aeb80160404),(432828)      870.2600

18 OF 19      Paraquat 200g/l SL Formulation  
(A3879BU) -Toxicokinetic Study in the  
Dog;(XD7201),(09003aeb80160404),  
(432829)      NA




MRID NUMBER	VOLUME NUMBER	STUDY TITLE	EPA GUIDELINE NUMBER
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19 OF 19

Paraquat -Gramoxone 200g/l  
Formulation -Toxicokinetic Study in the  
Dog;(026118),(09003aeb80160404),  
(432830)

NA

COMPANY OFFICIAL: JERRY WELLS  
(NAME)

  
(SIGNATURE)

COMPANY NAME: SYNGENTA CROP PROTECTION, INC.

COMPANY CONTACT: JERRY WELLS  
(NAME)

336-632-6324  
(PHONE)

*Certification Label*

## Certification with Respect to Label Integrity

Version: 9/11/02

I certify that the information (including, but not limited to, text, tables, and graphics) contained in the electronic file identified below by file name and submitted with this certification is the same information as that on the paper copies of these documents included with this submission.

PROPOSED LABEL		
EPA Registration #	Date Submitted to EPA	Electronic file name
100-XXXXX	09/14/04	000100-XXXXX.20040914.GRAMOXONE-INTEON-091404.pdf

I certify that the statements that I have made on this form are true, accurate, and complete. I acknowledge that any knowingly false or misleading statements may be punishable by fine or imprisonment or both under applicable law.

Pat Dinnen  
Signature

September 15, 2004  
Date

Pat Dinnen  
Name (typed)

Regulatory Specialist,  
Herbicides  
Title

LABCL

(Booklet – 2.5, 30, 120 Gallons and Bulk)

**RESTRICTED USE PESTICIDE**  
**Due to Acute Toxicity**

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Gramoxone Inteon™

Herbicide

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) ..... 30.1%

Other Ingredients: ..... 69.9%

Total: ..... 100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon.

Contains alerting agent (odor), emetic, dye and Inteon Technology

EPA Reg. No.100

EPA Est.

**KEEP OUT OF REACH OF CHILDREN.**



**DANGER / POISON**  
**PELIGRO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

- **NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.**
- **IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.**
- **DO NOT USE OR STORE IN OR AROUND THE HOME.**
- **DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.**
- **THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.**

<b>FIRST AID</b> <b>Contains Paraquat, a Bipyridylum Herbicide</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• SPEED IS ESSENTIAL. Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fullers Earth.</li> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• The odor of this product is from the alerting agent, which has been added, not from the paraquat.</li> <li>• If person is not breathing, call 911 or an ambulance.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>NOTE TO PHYSICIAN</b> Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment'. ( <a href="http://www.syngenta.com/pqmedguide/">http://www.syngenta.com/pqmedguide/</a> ) Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment..	
<b>HOT LINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call <b>1-800-888-8372</b>	

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## PRECAUTIONARY STATEMENTS

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### HAZARDS TO HUMANS AND DOMESTIC ANIMALS



#### **DANGER / POISON PELIGRO**

May be fatal if swallowed. Fatal if inhaled. Causes substantial but temporary eye injury. Harmful if absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Do not breathe spray mist. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash clothing before reuse.

**IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

#### **Personal Protective Equipment (PPE)**

##### **Applicators and other handlers (other than Mixers and Loaders) must wear:**

- Long-sleeve shirt and long pants
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter

##### **Mixers and Loaders must wear:**

- Long-sleeve shirt and long pants
- Shoes plus socks
- Protective eyewear plus a dust mist NIOSH-approved respirator with any N, R, P, or HE filter
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- Chemical resistant apron
- Face shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for

washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

#### User Safety Recommendations

##### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### Environmental Hazards

**Wildlife:** This product is toxic to wildlife. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

**Drift:** Gramoxone Inteon is a contact herbicide that desiccates all green plant tissue. Paraquat dichloride is a nonselective herbicide and will cause damage to nontarget crops and plants if off-target movement occurs. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion. Refer to the local state laws, regulations, guidelines and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement.

### Physical and Chemical Hazards

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.



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## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and Buyer and User assume the risk of any such use. SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitations of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSES OR PLAYGROUNDS**

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**For Preplant or Preemergence (Broadcast or Banded), Chemical Fallow, Postemergence Directed Spray, Early Postemergence Broadcast in Peanuts and Dormant Season Applications, and "Between Cutting" Applications in Alfalfa:**

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

**For Harvest Aid and Desiccation Applications:** Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton).

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

**DO NOT** enter or allow others to enter the treated area until sprays have dried.  
**AVOID** working in spray mist.

**KEEP** all unprotected persons out of operating areas or vicinity where there may be danger of drift.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

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### GENERAL INSTRUCTIONS AND INFORMATION

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**Do not apply this product through any type of irrigation system.**

When Gramoxone Inteon is applied at less than 10 gallons per acre finished spray volume, a drift control or spray deposition additive **SHOULD** be used. Refer to the additive label for use directions.

#### **Spray Drift Information**

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

- The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
- Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45°.

Where states have more stringent regulations, they shall be observed.

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information**.

### **Aerial Drift Reduction Advisory Information**

(This section is advisory in nature and does not supersede the mandatory label requirements.)

#### **Information on Droplet Size**

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

#### **Controlling Droplet Size**

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

#### **Boom Length**

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

#### **Application Height**

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making application at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

## **Swath Adjustment**

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

## **Wind**

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

## **Temperature and Humidity**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

## **Temperature Inversions**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that move upward and rapidly dissipates indicates good vertical air mixing.

## **Sensitive Areas**

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

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## **GENERAL INFORMATION**

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Gramoxone Inteon is a contact herbicide used to control or suppress a broad spectrum of emerged weeds. Gramoxone Inteon controls most small annual weeds – both broadleaves and grasses, and suppresses perennial weeds by destroying green foliage. Gramoxone Inteon can also be used as a desiccant/defoliant at harvest.

Gramoxone Inteon is formulated as a liquid which contains 2 pounds of active ingredient per gallon. The formulation contains a nontoxic odor and an emetic (an agent which will induce vomiting if the product is swallowed). The odor is included in the formulation to help prevent accidental ingestion of Gramoxone Inteon.

Gramoxone Inteon is rapidly absorbed by green plant tissue and interacts with the photosynthetic process to produce superoxides which destroy the plant cells. Gramoxone Inteon requires actively growing green plant tissue to function. Thorough coverage of all green foliage is essential for effective weed control and for effective crop desiccation/defoliation. Gramoxone Inteon is not as effective on drought-stressed weeds, weeds with little green foliage (i.e., mowed or cut weeds), or mature woody bark of trees and vines.

Clay and organic matter rapidly tie up Gramoxone Inteon. As a result, Gramoxone Inteon has no residual soil activity to affect later-planted crops or later germinating weeds.

## **ROTATIONAL CROPS**

All rotational crops may be planted immediately after the last application of Gramoxone Inteon.

## **RAINFASTNESS**

Because Gramoxone Inteon is rapidly absorbed by the weed foliage, rain occurring 15-30 minutes or more after application will have no effect on the activity of Gramoxone Inteon.

## **APPLICATION**

Since Gramoxone Inteon is a contact-type herbicide, it is essential to obtain complete coverage of target weeds to get good control. Improper application technique and/or application to large, stressed, or mown weeds will usually result in unacceptable weed control and unacceptable crop desiccation/defoliation. Complete coverage is also essential for good crop desiccation/defoliation. See details below for specific application instructions.

## USE OF A NONIONIC SURFACTANT OR CROP OIL CONCENTRATE

**Always Add One of the Following** (failure to use one of the following at recommended rates will result in reduced performance of Gramoxone Inteon).

**Nonionic Surfactant:** Add nonionic surfactant containing 75% or more surface-active agent at a minimum of 0.125% v/v (1 pt./100 gals.), **or** add a nonionic surfactant containing 50-74% surface-active agent at a minimum of 0.25% v/v (2 pts./100 gals.), of the finished spray volume for ground applications. For aerial applications, add a nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume.

**Crop Oil Concentrate:** Add a nonphytotoxic crop oil concentrate or methylated seed oil containing 15-20% approved emulsifier, at 1.0% v/v (1 gal./100 gals.) of the finished spray volume for ground applications. For aerial applications, add 1 pint of crop oil concentrate per acre. Do not use crop oil concentrate when using Gramoxone Inteon for cotton harvest aid.

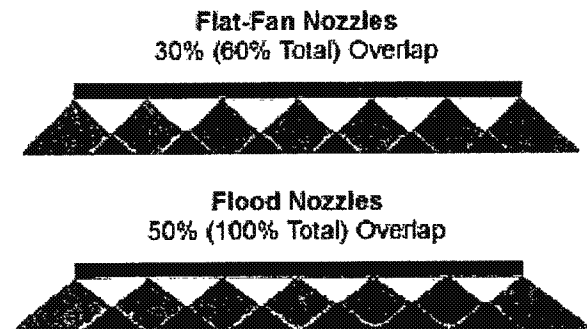
## NOZZLE SELECTION

The use of flat-fan nozzles will result in the most effective application of Gramoxone Inteon. Flood nozzles are generally not as good as flat fans since they produce large uneven droplets. The use of flood nozzles may result in reduced weed control due to inadequate coverage.

**WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE, USE ONLY FLAT FAN NOZZLES AS RECOMMENDED IN THE CHART BELOW.**

**Table 1. Recommended Nozzles, Pressures and Setup.**

	Nozzle Type	
	Flat Fan	Flood
Maximum Size	8	15
Spray Pressure (at nozzle)	30-50 psi	30-50 psi
Maximum Nozzle Spacing	30"	40"
Direction of Spray Pattern	Down	Down
Maximum Speed	10 mph	10 mph
Spray Overlap (at each edge)	30%	50%



Using nozzles, pressures, or setups different from the above chart will result in reduced control.

### SPRAY CARRIER

Always use clean water (free of mud or clay), clear liquid nitrogen, or complete clear liquid fertilizers as the carrier when spraying Gramoxone Inteon. Muddy water, or suspension-type fertilizers containing clay, can inactivate Gramoxone Inteon. Never use suspension-type fertilizers containing clay as the spray carrier. If using a complete clear liquid fertilizer containing high phosphate levels as the spray carrier, always use the higher rate of Gramoxone Inteon and surfactant.

Note: When using liquid fertilizers such as 28% N as a spray carrier, it is important that nonionic surfactant still be used with Gramoxone Inteon. Liquid fertilizer carriers cannot substitute for surfactant.

### RATES OF GRAMOXONE INTEON

Follow recommended rates listed with each use of Gramoxone Inteon. Use the higher label rates when weeds are dense or large. Also, use higher label rates for harvest aid when crop vegetation is dense. For broadcast applications of Gramoxone Inteon with backpack sprayers, the application rate should not exceed 0.50 lbs. a.i./A (one quart) in a minimum of 30 gallons of spray solution per acre.

### SPRAY VOLUME

Follow recommended minimum spray volumes listed with each use of Gramoxone Inteon. These are **minimum** volumes only, and spray volumes should be increased as necessary to obtain complete coverage of the target weed or plant without runoff from the foliage.

WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE,  
TARGET WEEDS SHOULD NOT EXCEED 6 INCHES IN HEIGHT.

### APPLICATION TIMING



**Gramoxone Inteon should be applied to emerged weeds when they are small. Weeds 1-6 inches in height are the easiest to control.** Larger weeds may be more difficult to control. When weeds have been grazed or mowed, thus removing much of the green foliage, allow the weeds to regrow to a height of 2-4 inches before spraying if possible. Similarly, when forage or grain crops have been harvested prior to spraying, weeds present in the field will also have been cut. To allow for adequate green foliage to remain on weeds in this situation, raise cutter bars as high as possible from the ground to cut stubble and weeds at a greater height.

### **BURNDOWN OF GRASS COVER CROPS OR VOLUNTEER CEREALS**

When using Gramoxone Inteon for control of grass cover crops or volunteer cereals, best results are obtained when Gramoxone Inteon is applied **prior to tillering or after boot stage**. This is especially important with a wheat cover crop or volunteer wheat. Treatments made between tillering and boot stage will generally not provide complete control. Do not expect complete control of perennial cover crops.

### **ENVIRONMENTAL CONDITIONS**

Gramoxone Inteon is active over a wide range of environmental conditions. Cool weather (below 55°) will slow the activity of Gramoxone Inteon, as will cloudy, overcast weather, but will not affect performance.

### **SPOT SPRAYING**

When only small areas are to be sprayed with labeled applications, it is advantageous to mix small quantities of Gramoxone Inteon. To aid in mixing small quantities, the following table should be consulted.

<b>If The Broadcast Rate Per Acre for Gramoxone Inteon is:</b>	<b>Add The Following Amount of Gramoxone Inteon To 1 Gallon of Water</b>
1 1/2 pts.	1/3 fl. oz.
2 pts.	3/8 fl. oz.
2 1/2 pts.	1/2 fl. oz.
3 pts.	2/3 fl. oz.

Always add 1/3-1/2 fl. oz. of a nonionic surfactant for each gallon of spray. When spot spraying in this manner, spray to thoroughly wet the foliage, but not to the point of runoff.

## **TANK MIXING FOR IMPROVED BURNDOWN OF DIFFICULT WEEDS AND RESIDUAL WEED CONTROL**

### **Photosynthetic Inhibitor Herbicides**

Difficult weeds can often be controlled by tank mixing Gramoxone Inteon with other herbicides. The addition of herbicides which are also photosynthetic inhibitors (PSI) will slow the activity of Gramoxone Inteon, allowing Gramoxone Inteon to thoroughly distribute itself within the treated leaf. The resulting level of control is usually greater than if Gramoxone Inteon was applied alone.

Gramoxone Inteon may be applied in tank mixture with the following PSI herbicides:

- AAtrex® Herbicide
- Atrazine
- Bicep MAGNUM®
- Bicep II MAGNUM® Herbicide
- Bicep Lite II MAGNUM® Herbicide
- Boundary® 6.5EC Herbicide
- Canopy® Herbicide
- Caparol® 4L Herbicide
- Cotoran® Herbicide
- Lorox® Herbicides
- Lorox Plus® Herbicide
- Princep® Herbicide
- Sencor® Herbicide
- Sinbar® Herbicide
- Spike® Herbicide

Refer to respective product label(s) for rates of application, directions for use, limitations, cautions and for a list of weeds controlled.

### **Improved Weed Control With PSIs**

Control of difficult weeds listed below and annual grass control will be enhanced by the addition of a PSI herbicide. For best results a second application is needed.

Barnyardgrass	Horseweed (Marestail)
Broadleaf signalgrass	Morningglory
Cheatgrass	Pennsylvania Smartweed
Cocklebur	Perennial Weeds (suppression only)
Fall Panicum	Prickly lettuce
Giant Ragweed	Sedges
Knotweed	Tansymustard
Kochia	Velvetleaf
Lambsquarters	Volunteer wheat
Malva (Cheeseweed)	Spiderwort

## **Improved Control of Perennial and Annual Broadleaf Weeds**

When perennial broadleaf weeds such as Canada thistle, bindweed, dandelion, etc. or difficult to control annual broadleaf weeds such as giant ragweed or morningglory are present, tank mixes with 2,4-D ester (Low Volatile), 2,4-DB, Clarity®, Banvel®, or Flexstar® where labeled, will help improve control. Tank mixing the amine formulation of 2,4-D with Gramoxone Inteon may result in reduced grass control.

## **Order of Tank Mixing**

In general, Gramoxone Inteon tank mixes with other products should be mixed as follows:

1. Fill spray tank 1/2 full with clean water or other approved carriers such as clear liquid fertilizer.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add dry formulations (WP, DF, etc.) to tank.
4. Add liquid formulations (SC, EC, L, etc.) to tank.
5. Add Gramoxone Inteon to tank.
6. Add nonionic surfactant to tank.
7. Fill remainder of spray tank.

Always refer to labels of other pesticide products for mixing directions and precautions which may differ from those outlined here.

Since many of the herbicides listed on this label are available in several types of formulations, it is advisable to perform a jar test to check physical compatibility.

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## **PRECAUTIONS AND RESTRICTIONS**

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### **EQUIPMENT/CONTAINER**

Flush all spray equipment with water after use each day. Gramoxone Inteon is corrosive to aluminum. Aluminum spray equipment and aluminum aircraft structures that are exposed to spray solution or spray drift should be flushed thoroughly with water immediately after use.

In dry areas, dust stirred up by high winds or equipment tires can coat weed or plant leaves and reduce Gramoxone Inteon activity. Avoid applying Gramoxone Inteon in extremely dusty conditions.

## **LIMITATIONS AND PRECAUTIONS**

- For Cotton Harvest Aid: Do not pasture livestock in treated fields or feed treated foliage.
- **DO NOT** use around home gardens, schools, recreational parks, or playgrounds.
- In preplant and preemergence (to the crop) uses, do not apply to soils lacking clay minerals, i.e., peat, muck, pure sand, artificial planting media.
- Seedbeds and plantbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence prior to treatment.
- To reduce germination of new weeds, seeding or transplanting should be done with a minimum amount of soil disturbance.
- Gramoxone Inteon used for preplant weed control over the top of plastic mulch may damage transplants which come in contact with the plastic. Sufficient rainfall or sprinkler irrigation to cause wash-off prior to planting may be needed to prevent damage to the crop.
- Weeds and grasses emerging after application of Gramoxone Inteon will not be controlled or suppressed.
- Unless otherwise indicated, crop plants emerged at time of application may be severely injured or killed if contacted by sprays of Gramoxone Inteon.

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## **APPLICATION INSTRUCTIONS AND CROP USE DIRECTIONS**

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The following tables indicate use patterns, rates, minimum spray volumes, preharvest intervals and other precautions, restrictions and comments specific to each crop. Read and follow directions carefully.

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b>  New seedlings (California only)	1	Broadcast	1.0-2.0 pts. See Table 2.	Ground: 10 gals. Air: 5 gals.	70	<ul style="list-style-type: none"> <li>• Apply during late winter or early spring.</li> <li>• Do not cut or harvest within 70 days after application.</li> <li>• Do not apply more than once during the first growing season.</li> <li>• Caution: Seedling alfalfa stands will be reduced and replanting may be necessary.</li> <li>• Not recommended for seedling alfalfa grown for seed.</li> <li>• Alfalfa foliage present at time of application will be burned.</li> </ul>
<b>ALFALFA</b>  (No-till or conventional planting)	2	Preplant or Preemergence Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• Apply prior to emergence of the crop.</li> <li>• Crop plants emerged at time of application will be killed.</li> <li>• Seeding should be done with a minimum amount of soil disturbance.</li> </ul>
<b>ALFALFA</b>  Dormant season on established plantings Region A - See map at end of Alfalfa section.	1	Broadcast	2.0-3.125 pts.	Ground: 10 gals. Air: 5 gals.	42	<ul style="list-style-type: none"> <li>• For control of weeds, including bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dogfennel, tansymustard, london rocket, sowthistle, rescue brome, wild oats, and other winter annuals; and suppression of perennial weeds.</li> <li>• Do not apply if <b>fall regrowth</b> following last fall cutting is greater than 6", or if <b>spring regrowth</b> is more than 2".</li> <li>• Apply to well-established stands (at least 1-year old) after the crop is dormant.</li> <li>• Alfalfa foliage present at the time of application will be burned which may reduce the yield of the first cutting.</li> <li>• Do not cut or harvest within 42 days of application.</li> <li>• Do not apply more than once per season.</li> <li>• Tank mix with metribuzin (Sencor) for improved burndown of weed vegetation and residual weed control. Consult the metribuzin product label for a list of weeds controlled, rates of application, and precautions.</li> </ul>

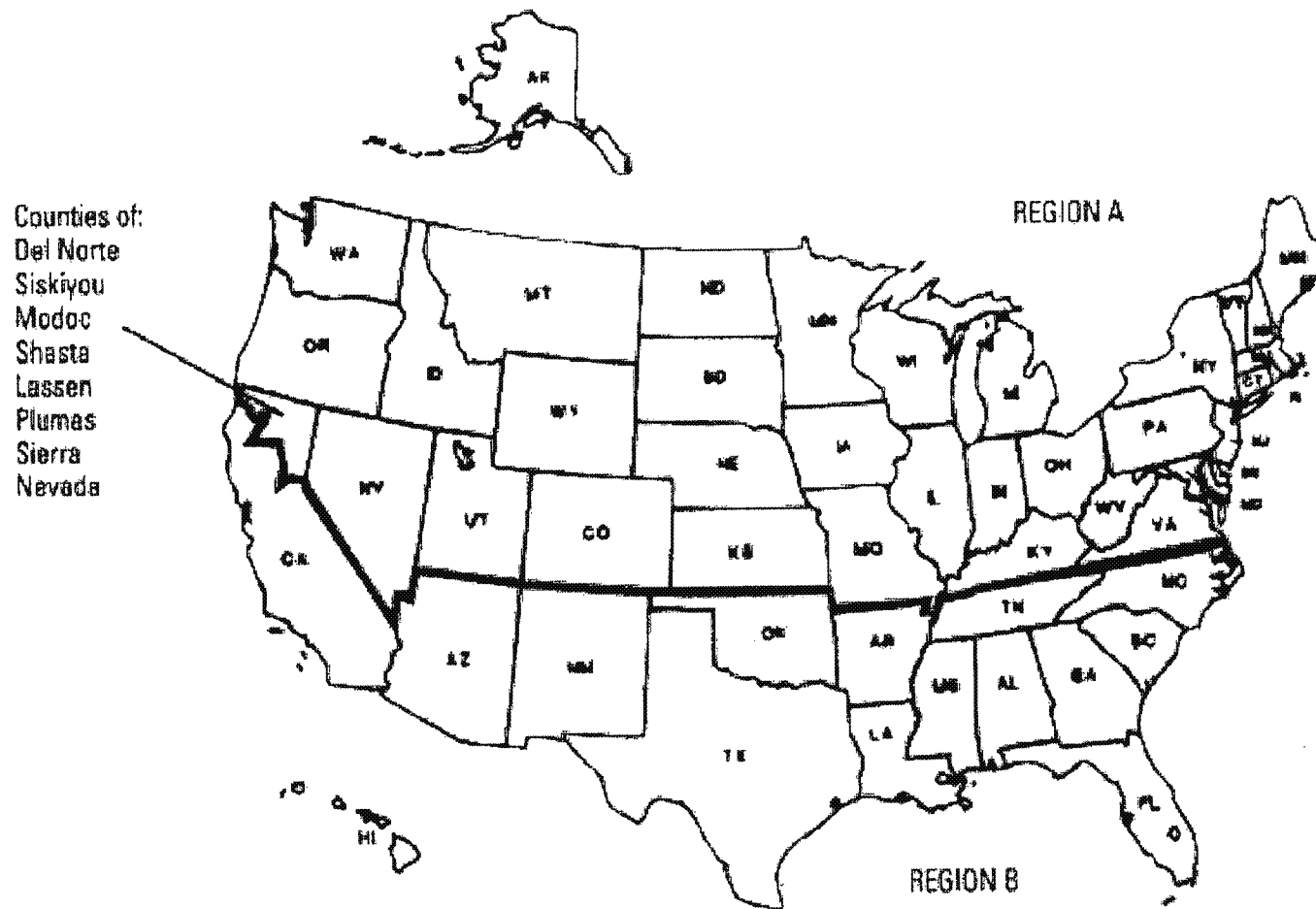
Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b>  Dormant season tank mix with Velpar® L herbicide Region A - See map at end of alfalfa section.	2	Broadcast	1.5-2.5 pts.	Ground: 10 gals. Air: 10 gals.	42	<ul style="list-style-type: none"> <li>For control of weeds such as chickweed, downy brome and tansymustard.</li> <li>Use the 1.5 pt rate of Gramoxone Inteon when weeds and grasses are less than 4" tall.</li> <li>Mix with 1-2 qts. of Velpar L per acre.</li> <li>Use the lower rate of Velpar L on loamy sands or sandy loams. Refer to Velpar L label for directions, limitations, cautions and for a list of weeds controlled.</li> <li>Apply once to established alfalfa stands during the dormant season.</li> <li>Do not apply if <b>fall regrowth</b> following last fall cutting is greater than 6", or if <b>spring regrowth</b> is more than 2".</li> <li>Do not apply to alfalfa during the first season after seeding.</li> <li>Temporary chlorosis may occur on alfalfa regrowth.</li> <li>Stress which may be caused in part by low fertility, disease, insects, winterkill, over cutting, drought or frost may increase the chances of crop injury.</li> <li><b>DO NOT USE</b> on gravelly or rocky soils, exposed subsoils, hardpan, sand or poorly drained alkaline soils as crop injury, including mortality, may result.</li> <li>Do not cut or harvest within 42 days of application.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b>  Dormant Season  On established plantings: Region B-See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1-year-old: Region A- See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1- year-old: Region B- See map at end of Alfalfa section.	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals; and suppression of perennial weeds.</li> <li>Apply during late fall or winter months after the last fall cutting and before first spring cutting.</li> <li>In the California counties of Orange, Riverside and all counties north of these counties, do not apply if <b>spring regrowth</b> after grazing or cutting is more than 2". In all other areas within Region B, do not apply if <b>regrowth</b> after grazing or cutting is more than 2".</li> <li>Do not harvest within 60 days of application.</li> <li>CAUTION: Applications to alfalfa that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green alfalfa foliage present at the time of application will be burned.</li> <li>Total hay yield of first cutting may be reduced in alfalfa fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight.</li> <li>Do not apply more than once per season.</li> <li>Tank mix with metribuzin (Sencor) for improved burndown of weed vegetation and residual weed control in <b>dormant established</b> (at least 1-year old) alfalfa. Consult the metribuzin product label for a list of weeds controlled, rates of application, and precautions.</li> <li>Do not apply tank mix with metribuzin on newly established (less than 1-year old) alfalfa.</li> </ul>
	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.		
	1	Broadcast	0.75-1.25 pts.	Ground: 10 gals. Air: 5 gals.		
						<b>California</b> <ul style="list-style-type: none"> <li>For desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.</li> <li>Use high rate if ryegrass, shepherdspurse, sowthistle or groundsel is present.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b>  Between-cuttings treatment in established plantings. (Includes first year alfalfa) (All states East of the Rocky Mountains)	3	Broadcast	1.0-1.5 pts.	Ground: 10 gals.	30	<ul style="list-style-type: none"> <li>• Weeds much beyond the seedling stage and the stubble of weeds cut off during harvest will be less affected by this treatment.</li> <li>• Apply immediately after alfalfa has been removed for hay or silage.</li> <li>• Do not treat more than 5 days after cutting.</li> <li>• CAUTION: First year alfalfa stands and yields may be reduced if alfalfa is allowed to regrow more than 2".</li> <li>• Alfalfa foliage present at time of application will be burned.</li> <li>• In arid areas where moisture is limited, weed control may be reduced.</li> <li>• Do not cut or harvest within 30 days of application.</li> <li>• Make 1-3 applications, as needed, during the growing season. These sprays may be applied in addition to a dormant application.</li> <li>• For first year alfalfa, do not apply more than twice during the first growing season.</li> </ul>



Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b> (For use only in the following states: ID, MT, NV, OR, UT, WA, WY)  Desiccation of alfalfa to facilitate harvest of alfalfa seed  Gramoxone Inteon/Reglone® Tank Mix	2	Broadcast           Broadcast	2.5-4.0 pts.           2.0-4.0 pts. Gramoxone Inteon/ 2 pts. Reglone	Ground: 20-25 gals. Air: 5-10 gals.           Ground: 20-25 gals. Air: 5-10 gals.	See Precautions           See Precautions	<ul style="list-style-type: none"> <li>Do not harvest until at least 4 days after application.</li> <li>Do not apply when weather conditions favor drift from treated areas.</li> <li>Do not apply by ground equipment within 25 ft., or by air within 75 ft. of lakes; reservoirs; rivers; permanent streams, marshes or natural ponds; estuaries; and commercial fish farm ponds.</li> <li>For use only on fields in production of alfalfa seed. Not for use on fields producing alfalfa for livestock feed. No portion of the treated field, including seed, seed screenings, hay forage, or stubble, may be used for human or animal feed.</li> <li>Do not cut current year's treated alfalfa seed crop for hay or forage. Do not graze current year's treated alfalfa seed crops.</li> <li>Treated alfalfa seed is not to be used for sprouting. All alfalfa seed treated with Gramoxone Inteon/Reglone tank mix is to be tagged at processing plants, "NOT FOR HUMAN CONSUMPTION". It shall be the grower's responsibility to notify the processing plants of any seed crop treated with Gramoxone Inteon/Reglone tank mix.</li> <li>Screenings from alfalfa seed processing are prohibited from feed channels. All Gramoxone Inteon/Reglone treated alfalfa seed screenings must be removed from the feed market.</li> </ul>



Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
ALMONDS	5	Directed Spray	1.25-4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems (except suckers) or foliage.</li> <li>Use a shield or wrap plant when spraying around young trees or vines.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>Do not apply when nuts to be harvested are on the ground.</li> <li>For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatments may be necessary.</li> </ul>
ARTICHOKE (Globe)	3	Directed Spray	2.5-4.0 pts.	Ground: 20-100 gals.	1	<ul style="list-style-type: none"> <li>Up to 3 applications per season, do not exceed 8 pts. per season.</li> <li>Applications at least 7 days apart.</li> <li>Do not harvest within 24 hours of last application.</li> </ul>
ASPARAGUS	3	Preplant or Preemergence Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Apply prior to emergence of the crop.</li> <li>Crop plants emerged at time of application will be killed.</li> </ul>
ASPARAGUS Preemergence to established plantings at least 2 years old	3	Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals.	6	<ul style="list-style-type: none"> <li>Apply prior to emergence of crop or after last harvest.</li> <li>Crop plants emerged at time of planting will be killed.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>BEANS, DRY</b>  Sweet lupin White sweet lupin White lupin Grain lupin  Adzuki beans Asparagus beans Black beans Broad beans Field beans Garbanzo beans Kidney beans Lablab beans Lima beans Moth beans Mung beans Navy beans Pinto beans Rice beans Snap beans Tepary beans Urd beans Wax beans  Blackeyed peas Chickpeas Cowpeas Crowder peas Southern peas  Catjang Guar  <b>PEAS, DRY</b>	2	Harvest-Aid	1.2-2.5 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Add spreader (nonionic) at 1 qt./100 gals. of spray mix.</li> <li>For vining type beans or bush type with lush growth, use a single application of the higher rate.</li> <li>May also be applied as a split application. <b>DO NOT</b> make more than 2 applications or exceed a total of 2.5 pts./A. The split application may improve vine coverage.</li> <li>Apply when the crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 40% (bush type peas or beans) or 30% (vine type peas or beans) of the leaves still green in color.</li> <li><b>DO NOT</b> apply when weather conditions favor spray drift. A drift control agent may be included to reduce spray drift.</li> <li><b>NOT REGISTERED FOR USE ON DRY BEANS AND IN CALIFORNIA.</b></li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>BERRIES</b> Blackberries Blueberries Boysenberries Currant Elderberry Gooseberry Huckleberry Loganberry Raspberries	5	Postemergence Directed Spray	2.0-4.0 pts.	Ground: 50 gals.	-	<ul style="list-style-type: none"> <li>• Apply before emergence of new canes or shoots as injury to those canes or shoots can occur.</li> <li>• Apply as a coarse spray to avoid crop injury from fine spray mist.</li> </ul>
<b>CACAO</b>	5	Directed Spray	2.0-4.0 pts.	Ground: 50-200 gals.	1	<ul style="list-style-type: none"> <li>• Apply when weeds are succulent and growth is from 1-6".</li> <li>• For mature woody weeds, late-germinating weeds and grasses and for perennials; retreatment or spot treatment may be necessary.</li> <li>• Do not allow spray to contact cacao plants as injury may result. Use a shield for young trees.</li> <li>• Do not spray under windy conditions.</li> <li>• Do not graze treated areas or feed treated cover crops to livestock.</li> </ul>
<b>CASSAVAS, TANIERS &amp; YAMS</b> (Puerto Rico only)	3 2	Shielded Post Directed Spray	2.5 pts.	Ground: 50 gals.	90	<ul style="list-style-type: none"> <li>• Apply when weeds are succulent and growth is 1-6".</li> <li>• On cassavas and taniers, do not make more than 3 applications per crop season.</li> <li>• On yams do not make more than 2 applications per crop season.</li> <li>• Do not allow spray to contact cassavas, tanier or yam plants as injury may result.</li> <li>• Do not spray under windy conditions.</li> <li>• Do not graze treated areas or feed treated forage to livestock.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CHEMICAL FALLOW</b> General Information				Ground: 5 gals. Air: 5 gals.  See Precautions, Restrictions and Comments		<ul style="list-style-type: none"> <li>• Use higher spray volumes for better coverage as density of stubble, crop residue or weeds increase.</li> <li>• To control volunteer wheat or downy brome, fall-applied treatments generally work best with Gramoxone Inteon. If possible, tank mix with Atrazine for maximum burndown and residual control.</li> <li>• Apply from immediately after harvest up to emergence of the newly seeded crop as a broadcast or band treatment.</li> <li>• Cut wheat as high as possible to avoid cutting weeds too short, and allow the weeds to grow at least 2-3" after harvest before applying Gramoxone Inteon.</li> <li>• The addition of dicamba, (Banvel) or 2,4-D ester (Low Volatile) may aid in the suppression of emerged perennial broadleaf weeds and large annual broadleaf weeds.</li> <li>• Refer to 2,4-D ester (Low Volatile), Banvel or residual herbicide label(s) for directions, limitations, cautions and for a listing of weeds controlled.</li> <li>• For extended weed control during the fallow period, tank mixes with registered residual herbicide combinations other than those listed on this label are permissible.</li> <li>• Weeds taller than 6" may not be controlled.</li> <li>• Weeds and grasses emerging after application will not be controlled.</li> <li>• Crop plants emerged at the time of application will be killed.</li> <li>• By ground application, apply 5-60 gallons of spray mix per acre. If applying at &lt;10 GPA by ground, utilize the following additional precautions: <ul style="list-style-type: none"> <li>• Do not apply with floaters or exceed a speed of 10 mph.</li> <li>• Apply with flat fan nozzles only at 30-40 PSI.</li> <li>• Apply only in a tank mix with atrazine at a minimum of 0.5 lb. a.i./A.</li> <li>• By air, apply in 5-10 gals. of spray mix per acre.</li> </ul> </li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CHEMICAL FALLOW</b>  Continuous Wheat 2-3 Month Recropping Interval	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3-4.0 pts.	Ground: 5 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• Make application at least 45 days prior to seeding.</li> <li>• Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see <b>Photosynthetic Inhibitor Herbicides</b> section) for volunteer wheat or downy brome control in the spring.</li> <li>• Refer to the Chemical Fallow General Information section.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Fallow-Wheat Rotations (Fall applied after harvest; seeded 12-14 months later)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3-4.0 pts.	Ground: 5 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• Spray before weeds produce seed.</li> <li>• Volunteer wheat and downy brome control are better with late August or early September applications.</li> <li>• Tank mix with Atrazine Marksman® Herbicide, or Command® Herbicide for enhanced burndown and residual weed control.</li> <li>• Tank mix with metribuzin, (Sencor 75DF) for burndown and residual control of grass and broadleaf weeds.</li> <li>• Refer to the product labels for specific use rates for your soil type, use directions, cautions and a list of weeds controlled.</li> <li>• Refer to the Chemical Fallow General Information section.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CHEMICAL FALLOW</b>  Wheat-Fallow-Wheat Rotations (Spring applied; seeded 3-5 months later)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>Application should be made March 1 to April 15, prior to spring rains to conserve moisture.</li> <li>Volunteer wheat is easier to control after the boot stage, but soil moisture loss will be greater.</li> <li>Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see <b>Photosynthetic Inhibitor Herbicides</b> section) for volunteer wheat or downy brome control in the spring.</li> <li>Refer to the Chemical Fallow General Information section.</li> <li>Tank mix with metribuzin, (Sencor ) for burndown and residual control of grass and broadleaf weeds.</li> <li>Refer to the metribuzin, (Sencor ) label for use rates for your soil type, use directions, cautions, and weeds controlled.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Annual Crop <sup>1</sup> -Wheat Rotations (Fall applied in wheat stubble)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Tank mix with AAtrex/Atrazine or Marksman for enhanced burndown and residual weed control. Refer to the labels for specific use rates for your soil type, use directions, cautions, and a list of weeds controlled.</li> <li>Spray after wheat harvest and before weeds produce seed. If grasses such as foxtails or barnyardgrass recover, respray before they develop seed.</li> <li>Volunteer wheat and downy brome are easier to control with late August to November applications.</li> <li>Refer to the Chemical Fallow General Information section.</li> </ul>



Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CHEMICAL FALLOW</b>  Wheat-Annual Crop-Wheat Rotations (Spring applied prior to planting an annual crop <sup>1</sup> )  <sup>1</sup> Approved Annual Crops are grain sorghum, corn, wheat, or proso millet.	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>Tank mix with AAtrex/Atrazine for enhanced burndown and residual weed control. Refer to the labels for specific use rates for your soil type, use directions, cautions, and a list of weeds controlled.</li> <li>Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see <b>Photosynthetic Inhibitor Herbicides</b> section) for volunteer wheat or downy brome control in the spring.</li> <li>Follow the AAtrex/Atrazine recommendations pertaining to soil pH and recropping intervals.</li> <li>Refer to the Chemical Fallow General Information section.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CLOVER AND OTHER LEGUMES<sup>1</sup></b> Dormant Season  On established plantings: Region A- See map at end of Alfalfa section.  On established plantings: Region B-See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1- year-old: Region A- See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1-year-old: Region B- See map at end of Alfalfa section.	1	Broadcast	2.0-3.1 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals, and suppression of perennial weeds.</li> <li>Apply during late fall or winter months after the last fall cutting and before first spring cutting.</li> <li>Do not apply if <b>regrowth</b> after grazing or cutting is more than 2".</li> <li>Do not harvest within 60 days of application.</li> <li>CAUTION: Applications to clover or other legumes that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green clover or other legumes foliage present at the time of application will be burned.</li> <li>Clover or other legumes foliage present at the time of application will be discolored and temporarily stunted.</li> <li>Total hay yield of first cutting may be reduced in clover or other legumes fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight.</li> <li>Do not apply more than once per season.</li> </ul> <b>California</b> <ul style="list-style-type: none"> <li>For desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.</li> <li>Use high rate if ryegrass, shepherdspurse, sowthistle or groundsel is present.</li> </ul> <p><sup>1</sup>Other legumes include velvetbean, lespedeza, lupine, sainfoin, trefoil, vetch, crown vetch, and milk vetch.</p>
	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	
	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	
	1	Broadcast	0.75-1.2 pts.	Ground: 10 gals. Air: 5 gals.	60	

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CORN</b> <b>FIELD CORN</b> <b>POPCORN</b> <b>SWEET CORN</b> <b>SEED CORN</b> (Used alone)	3	Preplant or Preemergence (Broadcast or Banded Over Row)	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>Includes field, fresh, sweet, forage, fodder and popcorn.</li> <li>Seedbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.</li> </ul>
<b>CORN</b>  Tank Mixes for No-till/Reduced Till	3	Preplant or Preemergence (Broadcast or Banded Over Row)	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.*	-	<ul style="list-style-type: none"> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: 2,4-D Ester (Low Volatile), 2,4-D Amine, AAtrex/Atrazine, Balance®, Banvel, Bicep MAGNUM, Bicep II Magnum, Bicep Lite II MAGNUM, Callisto®, Clarity, Degree™, Degree Xtra™, Distinct®, Dual MAGNUM, Fulltime™, Frontier®, Guardsman®, Harmony® Extra Herbicide (Preplant Only), Harness®, Harness® Xtra, Lorox, Lumax®, Lexar™, Princep, Prowl®</li> <li>Gramoxone Inteon may also be tank mixed with Warrior®, Karate®, Ambush® Insecticide.</li> <li>Refer to respective product label(s) for rates of application, directions for use, limitations, cautions, and for a list of weeds or insects controlled.</li> </ul> <p>*Refer to respective product labels to determine if these products can be applied by air.</p>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
FIELD CORN POPCORN SWEET CORN SEED CORN	3	Postemergence Directed Spray (Including Hooded or Shielded)	1.0-2.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• Use higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray contacts corn plants.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height.</li> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply when corn is at least 10" tall with nozzles arranged to spray no higher than the lower 3" of corn stalks.</li> <li>• Corn plants shorter than 10" may be injured and not recover (corn height measured from soil surface to top of whorl).</li> <li>• For corn greater than 20" tall, arrange the nozzles to spray no higher than the lower 1/3 of the corn stalks.</li> <li>• Corn foliage sprayed will be injured, but the crop will recover and develop normally.</li> </ul>

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<b>FIELD CORN</b> Popcorn Seed Corn	1	Harvest Aid Broadcast	1.2-2.0 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Make ONE (1) application at least 7 days prior to harvest.</li> <li>Apply after the corn is mature after the black layer has formed at the base of the kernels (this indicates maturity). Consult your local agricultural authority for help in identifying the black layer.</li> <li>Add nonionic surfactant containing at least 75% surface active ingredient at 0.25% v/v.</li> <li>Use 2.25 pts. to desiccate mature broadleaf weeds and grasses or broadleaf weeds and grasses that are taller than 18".</li> <li>Drought stressed plants, especially broadleaf weeds can be difficult to kill and desiccation may not be complete.</li> </ul>
<b>FIELD CORN ONLY</b> (grain, fodder, forage)	3	Postemergence directed spray USDA Witchweed Eradication Program	2.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Initiate sprays in late June to early July and repeat in early August if regrowth occurs.</li> <li>Follow application instructions in postemergence directed spray section above.</li> </ul>
<b>FIELD CORN ONLY</b> (grain, fodder, forage)  2,4-D Amine Tank Mix	3	Postemergence directed spray USDA Witchweed Eradication Program	8.0 fl. oz. + 0.5 lbs. 2,4-D Amine AE	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Apply as a directed spray onto grassy weeds and witchweed before witchweed blooms. Reapply if regrowth occurs.</li> <li>Follow application instructions in postemergence directed spray section above.</li> </ul>
<b>COTTON</b>  (Used alone)	3	Preplant or Preemergence	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Apply prior to, during or after planting, but before crop emergence.</li> <li>For fallow bed treatment, beds should be preformed to permit maximum weed and grass emergence prior to treatment.</li> <li>Seeding should be done with a minimum of soil disturbance.</li> </ul>

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<b>COTTON</b> (California only; Used alone)	3	Preplant	8.0-16 fl. oz.	Ground: 10 gal Air: 5 gal.	-	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>
<b>COTTON</b> Goal™ Herbicide Tank Mix	3	Preplant or Fallow Bed Broadcast	2.5-4.0 pts.	Ground or Air: 10 gals.	-	<ul style="list-style-type: none"> <li>Refer to Goal label for specific use directions and restrictions, and weeds controlled.</li> </ul>
<b>COTTON</b> Other Tank Mixes	3	Preplant or Preemergence	2.5-4.0 pts.	kmmmmmmmmmk	-	<ul style="list-style-type: none"> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: Cotoran, Dual MAGNUM®, Meturon®, Cotton-Pro®, Caparol, Diuron, Harmony® Extra (Preplant Only), MSMA, Prowl, Zorial®.</li> <li>When tank mixing with Cotoran DF or Meturon DF, follow mixing instructions in the <b>Order of Tank Mixing</b> section carefully and maintain constant agitation.</li> <li>When tank mixing with any of the herbicides listed above, refer to that product's label for specific directions and restrictions and for a list of weeds controlled.</li> </ul>

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<b>COTTON</b>	4 (applies to all sections)	Harvest Aid			3	<b>Harvest Aid Use Precautions</b> (Applies to all sections) <ul style="list-style-type: none"> <li>Do not pasture livestock in treated fields or feed treated foliage.</li> <li>Do not apply to cotton within 3 days before harvest.</li> <li>Repeat application if necessary. Do not exceed a total of 2.0 pts./A as a harvest aid.</li> <li>May be tank mixed with other cotton harvest aid materials known to be effective by the local expert. Unless otherwise instructed in this label, refer to tank mix product label for rates, directions, limitations and cautions.</li> <li>Gramoxone Inteon can be applied in a tank mix with methyl parathion and/or Karate insecticide.</li> <li>Nodes above cracked bolls (NACB) timing is for guidance and is not intended to restrict the local expert in their use of the product.</li> </ul>
<b>SOUTHERN COTTON</b>  Harvest aid for boll opening and defoliation (tank mix with phosphate and chlorate defoliants)	4	Broadcast	8.0 fl. oz. + 1 pt. phosphate or 1 gal. chlorate	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Development of immature bolls will be inhibited.</li> <li>Apply when 80% or more of the bolls are open and the remaining bolls to be harvested are mature.</li> </ul>

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<b>SOUTHERN COTTON</b>  Additional tank mixes for boll opening and defoliation	4	Broadcast	4.0-6.0 fl. oz.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>To aid in defoliation and opening of mature bolls, Gramoxone Inteon may be tank mixed with the following products: Accelerate<sup>®</sup> Defoliant, DEF<sup>®</sup> Defoliant, Dropp<sup>®</sup> Defoliant, Ethephon<sup>®</sup> Plant Growth Regulant, Folex<sup>®</sup> Defoliant, Harvade<sup>®</sup> Harvest Growth Regulant, Prep<sup>™</sup> PGR</li> <li>Apply when 60% or more of the bolls are open and the remaining bolls to be harvested are mature.</li> <li>Development of immature bolls will be inhibited.</li> <li>Refer to tank mix product label for rate, directions, limitations and cautions.</li> </ul>
<b>SOUTHERN COTTON</b>  Post Defoliation-To aid in opening of mature bolls and to desiccate green weeds	4	Broadcast	4.0-6.0 pfs.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>Use higher rate if weed infestation is heavy or dense.</li> <li>Apply when 75% or more of the bolls are open and remaining bolls to be harvested are mature.</li> <li>Development of immature bolls will be inhibited.</li> <li>After a defoliation or conditioning application has been made, delay desiccation application of Gramoxone Inteon approximately 3-7 days to minimize leaf sticking.</li> </ul>
<b>WESTERN COTTON</b>  Harvest aid for boll opening and early defoliation	4	Broadcast	5.5-8.0 fl. oz. + phoshate or sodium chlorate; and/or other compatible harvest aid products.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Use higher rate of Gramoxone Inteon on rank cotton.</li> <li>Do not use more than 8.1 fl oz of Gramoxone Inteon for early defoliation as excessive desiccation may occur.</li> <li>Early defoliation timing is when 60% or more of the bolls are open and the remaining bolls to be harvested are mature (approximately 4 NACB).</li> <li>Development of immature bolls will be inhibited.</li> <li>Do not use more than 4.0 lbs. of actual sodium chlorate defoliant per acre at this early defoliation timing.</li> </ul>



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<b>WESTERN COTTON</b>  Harvest aid for boll opening and mid-to-late defoliation	4	Broadcast	8.0-16.0 fl. oz. alone or tank mix with sodium chlorate or phosphate defoliant and/or other compatible harvest aid products.		3 (Alone)	<ul style="list-style-type: none"> <li>In desert cotton areas or on rank vigorous cotton, use the 16fl. oz. rate of Gramoxone Inteon.</li> <li>Mid-to-late defoliation timing is when 75% or more of the bolls are open and remaining bolls to be harvested are mature (approximately 3 or fewer NACB).</li> <li>Development of immature bolls will be inhibited.</li> </ul>
<b>COTTON Stripper or Spindle Harvested</b>  Harvest aid for defoliation and boll opening	4	Broadcast	3.0-11.0 fl. oz.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>IT IS ADVISABLE, BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, TO APPLY THE RANGE OF RATES ON A SMALL BLOCK OF COTTON TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS.</li> <li>Apply when 75% of the bolls are open and the remaining bolls to be harvested are mature.</li> <li>DEVELOPMENT OF IMMATURE BOLLS WILL BE INHIBITED. SLICE BOLLS AND INSPECT THE SEED FOR MATURITY.</li> </ul> <p>Gramoxone Inteon may be applied alone or tank mixed with the following cotton harvest aids: Accelerate Defoliant, DEF<sup>®</sup> Defoliant,, Ethephon<sup>®</sup> Plant Growth Regulant, Folex<sup>®</sup> Defoliant, Harvade<sup>®</sup> Harvest Growth Regulant, Prep PGR</p> <ul style="list-style-type: none"> <li>May be applied as a split application. Do not exceed a total of 2.0 pts/A.</li> <li>To avoid leaf sticking, apply Gramoxone Inteon as a desiccant approximately 3-7 days after defoliation or a conditioning application and 7-14 days before harvest.</li> <li>Cooler temperatures may cause a longer waiting period between application of Gramoxone Inteon as a desiccant and defoliation/condition.</li> <li>Lower rates in the range may be necessary south of I-10 in Texas where temperatures are typically higher during defoliation.</li> </ul>

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<b>COTTON</b>  Late season desiccation	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>IT IS ADVISABLE, BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, TO APPLY THE RANGE OF RATES ON A SMALL BLOCK TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS.</li> <li>May be applied as a split application. Do not exceed a total of 2.0 pts./A.</li> <li>Apply when 85% of the bolls are open and the remaining bolls to be harvested are mature (approximately 0 NACB).</li> <li>Development of immature bolls will be inhibited. Slice bolls and inspect the seed for maturity.</li> <li>Lower rates in the range may be necessary south of I-10 in Texas where temperatures are typically higher during defoliation.</li> <li>If a defoliation or conditioning application has been made, delay desiccation application of Gramoxone Inteon approximately 3-7 days to minimize leaf sticking.</li> <li>May be tank mixed with other harvest aid materials known to the local expert to be effective.</li> </ul>
<b>COTTON</b>  Desiccation of Regrowth	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>Use to desiccate regrowth occurring after defoliation or desiccation.</li> <li>Regrowth is difficult to control, therefore, thorough coverage with the full recommended rate is necessary.</li> <li>Control is dependent on growing conditions and desiccation of small new regrowth may not always be complete.</li> <li>Use higher rate if regrowth is excessive.</li> </ul>

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<b>EASTER LILIES</b> (Field grown)	2	Preemergence	2.5-4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Do not apply more than twice per season.</li> </ul>
<b>FALLOW LAND</b>  Prior to planting of any crops.	2	Preplant Broadcast to Fallow Land	1.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Fallow land may be between operations such as disking, ripping, plowing, leveling, irrigating or listing for ground preparation purposes.</li> <li>Use for the control of weeds such as bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dog fennel, tansy mustard, London rocket, sowthistle, rescue brome, wild oats, volunteer cereals and other winter annuals and for suppression of perennial weeds or sedges.</li> <li>Use the higher rate for weeds approaching the maximum size of 6".</li> <li>Do not make more than 2 applications during the fallow period.</li> <li>Allow maximum weed emergence prior to application to maximize the benefit of this use.</li> <li>Adhere to the preharvest intervals and other crop specific restrictions for planted crops elsewhere on this label.</li> </ul>
<b>GRASSES</b> (For Seed) (For Use in Seedbed Preparation)	3	Preplant, At Planting, or Preemergence	2.0-4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Prepare the seedbeds and allow weeds to germinate.</li> <li>Apply Gramoxone Inteon when weeds are at the 3-5 leaf stage.</li> <li>Repeat applications as necessary prior to grass emergence.</li> <li>Do not graze treated areas or use the seed or straw from treated areas for animal feed or bedding.</li> </ul>

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<b>GUAR</b> (Preharvest desiccation)	3	Preharvest	2.0 pts.	Ground: 10 gals.	4	<ul style="list-style-type: none"> <li>• Apply after the pods are fully mature.</li> <li>• Do not graze treated areas or use the treated forage for animal feed.</li> </ul>
<b>GUAVA</b>	4	Directed Spray	4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>• Do not allow spray to contact green stems, fruit or foliage.</li> <li>• Do not graze treated areas.</li> <li>• Do not feed cover crops grown in treated areas to livestock.</li> <li>• For mature woody weeds, late-germinating weeds and grasses, and perennials, retreatment or spot spraying may be necessary.</li> </ul>
<b>HOPS</b> (ID, OR, & WA only)	3	Directed Spray and/or Suckering and Stripping	2.0 pts.	Ground: 10 gals.	14	<ul style="list-style-type: none"> <li>• Retreatment or spot treatment may be necessary.</li> <li>• Do not apply more than 3 times per season.</li> <li>• Do not allow spray to contact green stems, foliage, flowers, or cones as injury may result.</li> <li>• Do not allow animals to graze in treated hopyards.</li> <li>• Hop vine refuse and silage may be fed to livestock.</li> <li>• For suckering and stripping, spray only the basal 2 ft. of the vines. Repeat as necessary.</li> <li>• Experience with varieties other than Cascade, Yakima Cluster, and Bullion is limited. If using Gramoxone Inteon on other varieties than these, test the use pattern on a small number of vines of each variety to determine sensitivity to injury. Do not use on unlisted varieties if unacceptable crop injury occurs.</li> <li>• Chemical Pruning: To burn back existing vines and obtain even emergence of subsequent vines, spray when vines are less than 3 ft. tall.</li> <li>• APPLICATION TO HOP VINES LESS THAN 6 FT. TALL MAY CAUSE UNACCEPTABLE INJURY.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
LENTILS	2	Harvest Aid	1.2-2.0 pts.	Ground: 20 gals. Air: 7 gals.	7	<ul style="list-style-type: none"> <li>Add nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume.</li> <li>May also be applied as a split application. <b>DO NOT</b> make more than 2 applications or exceed a total of 2.0 pts./A. The split application may improve coverage.</li> <li>Apply when crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 30% of the leaves still green in color.</li> <li><b>DO NOT</b> apply when weather conditions favor spray drift. A drift control agent may be included to reduce spray drift.</li> <li><b>NOT REGISTERED FOR USE ON LENTILS IN CALIFORNIA.</b></li> </ul>
MINT (Peppermint, Spearmint)	2	Dormant Season	2.0-3.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>For suppression of weeds such as Italian ryegrass, prickly lettuce, groundsel, chickweed, downy brome and bluegrass.</li> <li>Apply when crop is dormant before spring growth begins and when weeds are less than 6" tall.</li> <li>Do not apply more than 3.0 pts./A per dormant season.</li> <li>May be tank mixed with Sinbar Herbicide (terbacil) weed killer for improved contact activity and residual control of Italian ryegrass, prickly lettuce and groundsel. Apply this tank mixture no more than once per season. Refer to the Sinbar label for rates, directions, and cautions and for a list of weeds controlled.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ONIONS (seeded) AND GARLIC</b>	1	Preplant/ Preemergence	2.5-4.0 pts.	Ground: 10 gals.	60 200 (CA only)	<ul style="list-style-type: none"> <li>• Use the higher rate for heavy weed infestations or wild oat control. Apply only one application per season at the 4.0 pts./A dosage.</li> <li>• Allow maximum weed and grass emergence prior to treatment but apply prior to crop emergence.</li> <li>• Apply a maximum of 4.0 pts./A per season.</li> </ul>
<b>PASSION FRUIT</b>	5	Directed Spray	4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>• Use a shield or wrap vine if bark is still green at application time.</li> <li>• If application is to be made during harvest season, pick all fruit off the ground prior to application.</li> <li>• Do not allow animals to graze on treated areas.</li> <li>• Retreatment or spot treatment may be necessary.</li> </ul>
<b>PEANUTS</b>	2	Broadcast At Ground Crack Postemergence	8.0-16.0 fl. oz.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>• To control or suppress small (1-6") emerged annual grass and broadleaf weeds in peanuts at ground crack. A second application may be made up to 28 days after ground crack.</li> <li>• For at ground crack use, Gramoxone Inteon can be tank mixed with Pursuit® herbicide or Dual MAGNUM for residual weed control. Consult the Pursuit or Dual MAGNUM label for a list of weeds controlled, rates of application, and precautions.</li> <li>• Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per acre per season.</li> <li>• Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>• Do not apply by air.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>PEANUTS</b>  Basagran® Herbicide Tank Mix	2	Broadcast At Ground Crack Postemergence	8.0-16.0 fl. oz.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>For improved control of weeds such as cocklebur, bristly starbur, smartweed and prickly sida, tank mix Gramoxone Inteon with Basagran at 1 pt./A.</li> <li>This tank mix can be applied at the ground crack stage of peanuts. A second application may be made up to 28 days after ground crack.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per acre per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Refer to the Basagran label for specific use directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not apply this tank mix if peanuts show injury (leaf phytotoxicity and/or plant stunting) produced by any other herbicide treatment as injury may be enhanced and/or prolonged.</li> <li>Do not apply this tank mix during prolonged periods of drought or unseasonably cold weather as unsatisfactory weed control may result.</li> <li>Do not apply by air.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>PEANUTS</b>  Butyrac® Herbicide or Butoxone® Herbicide 200 Tank Mix	2	Broadcast Postemergence	8.0-16.0 fl. oz.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>For improved control of weeds such as cocklebur, sicklepod and morningglory tank mix Gramoxone Inteon with 8-16 oz. (0.125-0.25 lbs.) per acre of Butyrac or Butoxone 200.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Refer to the complete Butyrac or Butoxone 200 label for specific use directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not apply by air.</li> </ul>
<b>PERSIMMON</b>	5	Directed Spray	3.75 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems, fruit, or foliage.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>For mature woody weeds, late-germinating weeds and grasses, and perennials, retreatment or spot spraying may be necessary.</li> </ul>
<b>PIGEON PEAS</b> (Puerto Rico only)	1	Directed Spray	2.0 pts.	Ground: 10 gals.	60	<ul style="list-style-type: none"> <li>Avoid contact with pigeon pea foliage.</li> <li>Do not make more than 1 application per season.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> <li>Cannery waste can be fed to livestock.</li> </ul>
<b>PINEAPPLE</b>	3	Directed Spray	2.0-4.0 pts.	Ground: 10 gals.	20	<ul style="list-style-type: none"> <li>Retreatment may be necessary on more mature weeds.</li> <li>Do not exceed 3 applications per season.</li> </ul>
<b>POTATO</b>	3	Preplant or Preemergence Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Apply up to ground cracking, before potatoes have emerged.</li> </ul>
<b>POTATO</b>  (California, Washington, Oregon, Idaho only; Used alone)	3	Preplant Broadcast	8.0-16.0 fl. oz.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>



Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
RICE	3	Preplant or Preemergence Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence. Use higher rates and spray volumes when vegetation is dense.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.</li> <li>For improved or extended weed control, Gramoxone Inteon may be tank mixed with other herbicides registered for this use. Refer to tank mix herbicide labels for specific directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not flood/flush within 48 hours of application in order to ensure complete kill of vegetation. If cool, cloudy and/or wet weather delays speed of kill, do not flood/flush until complete kill is evident.</li> </ul>
SAFFLOWER	3	Preplant or Preemergence Broadcast or Banded Over Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Apply before, during, or after planting but before crop emergence.</li> </ul>
SAFFLOWER (California only)	3	Preplant Broadcast	2.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>
SMALL GRAINS (Barley, wheat)	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li></li> </ul>
SMALL GRAINS (Wheat Only) Hoelon® 3EC Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>A tank mix with Hoelon 3EC will improve grass control.</li> <li>Apply when weeds are actively growing and 1-6" in height. Weeds 6" or taller may not be controlled.</li> <li>Do not apply this tank mix to Barley as crop injury may result.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>SORGHUM</b> (Grain)	3	Preplant/ Preemergence Broadcast or Band	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Seedbeds should be formed as far ahead of planting as possible to allow maximum weed and grass emergence.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> </ul>
<b>SORGHUM</b> (Grain)  Atrazine & 2,4-D ester [Low Volatile] Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.		48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with Atrazine for improved preemergence or residual weed control. The addition of 2,4-D ester (Low Volatile) may aid in the suppression of perennial and annual broadleaf weeds emerged at the time of application. Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and a list of weeds controlled.</li> </ul>
<b>SORGHUM</b> (Grain)  Harmony® Extra Herbicide Tank Mix	3	Preplant	2.0-4.0 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with Harmony Extra for improved weed control.</li> <li>Refer to the Harmony Extra label for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>SORGHUM</b> (Grain)	2	Postemergence Directed (Including Hooded or Shielded)	1.0-2.0 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• Use higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray contacts sorghum plants.</li> <li>• Do not exceed 2 postemergence-directed applications or exceed a total of 4.0 pts. Gramoxone Inteon per season.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height.</li> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply when sorghum is at least 12" tall when naturally standing.</li> <li>• Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Use precision directed-spray application equipment adjusted so that no more than the lower 3" of the sorghum stalk is contacted by the application spray.</li> <li>• Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
SOYBEANS	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Do not exceed a total of 6.0 pts. of Gramoxone Inteon per season.</li> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: 2,4-DB, 2,4-D, Authority®, Canopy, Canopy XL, Command, Dual MAGNUM, Dual II Magnum, Goal, Harmony® Extra (Preplant Only), Lorox, Lorox Plus, Flexstar, Firstrate™, Frontier, Gemini®, Warrior, Karate, Prowl, Pursuit, Scepter®, Sencor, Surflan®, Turbo®</li> <li>The rate of Gramoxone Inteon to be used in these tank mixtures is dependent on weed height and growing conditions. Use the highest recommended rate of Gramoxone Inteon under dry conditions or where the weed canopy is dense. Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> <li>The lower rate may be used when weeds are less than 4" tall and a selective postemergence spray or cultivation will be made within 3 weeks after planting.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Do not graze or harvest for forage or hay before the R3 stage of soybean development (early pod).</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>SOYBEANS</b>  2,4-D ester (Low Volatile) tank mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• Apply 2,4-D ester (Low Volatile) at 0.35-0.475 lbs. a.i./A at least 7 days prior to planting.</li> <li>• Apply 2,4-D ester (Low Volatile) at 0.475-0.95 lbs. a.i./A at least 30 days prior to planting.</li> <li>• Do not apply 2,4-D ester (Low Volatile) prior to planting soybeans if you are not prepared to accept the results of soybean injury including possible loss of stand and yield.</li> <li>• Do not use the amine formulation as Gramoxone Inteon activity may be reduced.</li> <li>• May be tank mixed with residual herbicides listed above.</li> <li>• Refer to the 2,4-D ester (Low Volatile) label for a list of rates, directions, limitations and cautions and for a list of weeds controlled.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
SOYBEANS	3	Postemergence Directed Spray (Includes Hooded or Shielded)	6.0-10.5 fl. oz.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• For control of seedling johnsongrass, crabgrass, goosegrass, Brachiaria, Texas millet and pigweed less than 2" tall, use the lower rate of Gramoxone Inteon.</li> <li>• For control of 2-4 " red rice, <i>Brachiaria</i>, barnyard grass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, and fall panicum, use 8.0 fl. oz. of Gramoxone Inteon.</li> <li>• For control of 2-3" sicklepod, purslane, pigweed, cutleaf ground cherry, and common ragweed, use 8.0 fl. oz. of Gramoxone Inteon.</li> <li>• For control of 2-4" grasses in mixture with common cocklebur, morningglory, and red rice, apply Gramoxone Inteon at 8.0 fl. oz./A plus 0.2 lb. active ingredient per acre of a 2,4-DB formulation.</li> <li>• Refer to the 2,4-DB label for directions, limitations, and cautions.</li> <li>• Do not graze or harvest for forage or hay.</li> <li>• If needed make a second and final application 7-14 days later.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> <li>• Use higher rate on larger (&gt; 6" ) or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray intentionally or accidentally (including drift of fine droplets) contacts the plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Do not treat if soybeans are less than 8" tall.</li> <li>• Use precision directed spray application equipment adjusted so that no more than the lower 3" of the soybean plant is contacted by the application spray.</li> <li>• Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
SOYBEANS	3	Harvest Aid	8.0-16.0 fl. oz.	Ground: 20 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Indeterminant varieties: Apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less.</li> <li>Determinant varieties: Apply when plants are mature, i.e. beans are fully developed, 1/2 of leaves have dropped, and remaining leaves are yellowing.</li> <li>Immature soybeans will be injured.</li> <li>Mature cocklebur, especially drought-stressed plants, are tolerant to Gramoxone Inteon and desiccation will not be complete. Always use the higher rate for cocklebur.</li> <li>Do not apply within 15 days of harvest.</li> <li>Do not graze or harvest for forage or hay.</li> </ul>
STRAWBERRIES	3	Postemergence Directed Spray	2.0 pts.	Ground: 20 gals.	21	<ul style="list-style-type: none"> <li>Apply by directing spray between the rows and using shields to prevent spray contact with crop plants.</li> <li>Do not allow spray to contact strawberry plants as injury or excessive residues may result.</li> <li>Do not apply more than 3 times per season.</li> <li>Do not graze livestock in treated areas.</li> </ul>
SUGAR BEETS	3	Preplant or Preemergence	2.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>Use the higher rate for heavier weed infestations.</li> <li>Seeding or transplanting should be done with a minimum amount of soil disturbance.</li> <li>Crop plants emerged at time of application will be killed.</li> <li>Can be used in fallow bed/stale seedbed for weed control.</li> <li>Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>SUGARCANE</b>	2	Postemergence Directed Spray (Includes Hooded or Shielded)				<b>General Comments</b> <ul style="list-style-type: none"> <li>• Apply as a hooded, shielded or directed spray to avoid contact with cane foliage to prevent leaf burn and yield reduction.</li> <li>• Make a second and final application, if necessary, when new weed growth is 2-6" high.</li> <li>• Do not graze treated areas or feed treated forage to livestock.</li> </ul>
-- Florida --	2		2.0 pts.	Ground: 50 gals.	-	<ul style="list-style-type: none"> <li>• For optimum results, apply in early spring (March-April) when weeds are small.</li> <li>• Do not apply after June 1 as cane growth may be stunted and yields reduced.</li> </ul>
-- Hawaii --	2		2.0 pts.	Ground: 20 gals.	-	<ul style="list-style-type: none"> <li>• Do not apply after cane rows have closed in.</li> </ul>
-- Louisiana --	2		1.0-2.0 pts.	Ground: 20 gals.	30	<ul style="list-style-type: none"> <li>• For tiller control, apply when tillers are less than 18" high.</li> <li>• Use the higher rate for heavier weed infestations or tiller growth.</li> </ul>
-- Florida & Texas --	1	Harvest Aid	0.6-1.0 pts.	Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• Use higher rate under cool, cloudy weather conditions.</li> <li>• Apply 3-14 days before burning and harvest.</li> </ul>
<b>SUNFLOWER</b>	3	Preplant or Preemergence Broadcast or Banded Over Row	2.5-4.0 pts.	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>• Apply before, during, or after planting but before crop emergence.</li> </ul>



Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
SUNFLOWER	2	Preharvest Desiccation Broadcast	1.2-2.0 pts.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>• Apply when sunflower seeds reach physiological maturity (when seed moisture is 35% or lower). For many varieties, this corresponds to the time when the back of the heads are yellow and the bracts are turning brown.</li> <li>• Do not graze treated areas or feed treated forage to livestock.</li> <li>• Use the higher rate when crop stands or weed infestations are heavy.</li> </ul>
TARO, DRYLAND (Hawaii Only)	2	Postemergence Directed Spray	1.5-2.5 pts.	Ground: 10 gals.	180	<ul style="list-style-type: none"> <li>• Do not allow spray to contact the taro plants as injury may result.</li> <li>• Make the first application when weed growth is 1-4" high.</li> <li>• Weeds emerging after the application will not be controlled.</li> <li>• A single re-treatment may be made; however, do not harvest dryland taro within 6 months of the last application.</li> </ul>
TREE PLANTATION ESTABLISHMENT Deciduous and Conifers	3	Preplant Broadcast	2.0-4.0 pts.	Ground: 20 gals.	-	<ul style="list-style-type: none"> <li>• Prepare ground early to allow maximum emergence of weeds.</li> <li>• Apply prior to planting. Plant with minimal soil disturbance.</li> <li>• Use the higher rate for heavier weed infestations.</li> <li>• For improved burndown or residual control, tank mix Gramoxone Inteon with other herbicides labelled for this use.</li> <li>• Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> <li>• Do not apply in less than 20 gals./A as weed control will be reduced.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>TREES AND VINES</b> Orchards, Vineyards, Windbreak, Shade & Ornamental Trees	5 except for:	Directed Spray	2.5-4.0 pts.	Ground: 10 gals.	Apricots 28 Cherries 28 Figs 13 Kiwi Fruit 14 Nectarines 28 Olives 13 Peaches 14 Pistachios 7 Plums 28	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems (except suckers), fruit or foliage.</li> <li>Use a shield or wrap plant when spraying around young trees or vines.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>Do not apply when figs, nuts or olives to be harvested are on the ground.</li> <li>For apricots - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For cherries - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For figs - Do not harvest within 13 days after application and do not exceed 5 postemergence directed applications per season.</li> <li>For grapes - treat when sucker growth is no more than 8" long. Late season applications to weeds should be made to avoid contact with desirable foliage.</li> <li>For kiwi fruit - Do not treat more than 3 times per year.</li> <li>For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatment may be necessary.</li> <li>For nectarines - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For olives - Do not harvest within 13 days after application and do not exceed 4 postemergence directed applications per season.</li> <li>For peaches - Do not harvest within 14 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For pistachios - Do not exceed two applications after shells split.</li> <li>For plums - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> </ul>
Acerola	3					
Apples	Cherries					
Apricots	3					
Avocados	Kiwi Fruit					
Bananas	3					
Beechnut	Nectarines					
Brazil Nut	3					
Butternut	Olives					
Calamondin	4					
Cashew	Peaches					
Cherries	3					
Chestnut	Pistachios					
Chinquapin	5					
Citrus Citron	(only 2 after shells split)					
Coffee	Plums					
Crabapple	3					
Figs						
Filberts						
Grapefruit						
Grapes						
Hickory Nut						
Kiwi Fruit						
Kumquat						
Lemon						
Lime						
Loquat						
Macadamia Nuts						
Mandarin						
Mayhaw						
Nectarines						
Olives						
Orange (sour & sweet)						
Papayas						
Peaches						
Pears						
Pear, oriental						

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>TREES AND VINES</b> Pecans Pistachios Plums Prunes Pummelo Quince Satsuma mandarin Walnuts Other shade and ornamental trees such as arborvitae, ash, elm, fir, oak, pine, etc.						
<b>TREES AND VINES</b> Tank Mixes	5 except for: Apricots 3 Cherries 3 Kiwi Fruit 3 Nectarines 3 Olives 4 Peaches 3 Pistachios 5 (only 2 after shells split) Plums 3	Directed Spray	2.5-5.0 pts.	Ground: 10 gals.	Refer to other TM labels	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with registered residual herbicides listed below for combined emerged and residual weed control. Always refer to other herbicide label(s) for respective precautions, limitations, restrictions, dates and directions for use and weeds controlled.</li> <li>Gramoxone Inteon may be tank mixed with the following herbicides: Devrinol<sup>®</sup>, Goal, Karmex<sup>®</sup>, Krovar<sup>®</sup> I Herbicides, Princep, Sinbar, Surflan, Solicam<sup>®</sup></li> </ul>
<b>TYFON</b> (New Hampshire only)	3	Preplant Preemergence	2.5-5.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Seeding should be done with a minimum of soil disturbance.</li> <li>Weeds and grasses emerging after treatment will not be controlled.</li> <li>Crop plants emerged at time of application will be injured.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>VEGETABLES</b> (Seeded or Transplanted) Beans (Lima, Snap) Broccoli Brussels Sprouts Cabbage Cantaloupe Carrots Cauliflower Cavalo Broccoli Chayote Fruit Chinese Cabbage Chinese Waxgourd Citron Melon Collards Cucumber Eggplant Endive (Escarole) Gherkin Gourd, Edible Groundcherry Kale Kohlrabi Lettuce Mizuna <i>Momordica</i> spp. Musk Melons Mustard Greens Mustard Spinach Peas Pepino Peppers Pumpkin Rape Greens Squash Sweet Corn Tomatillo Turnips Tomatoes Watermelons	3	Preplant Preemergence	2.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.</li> <li>Applications can be made as a banded or broadcast treatment before, during or after planting but prior to the crop emergence.</li> <li>Use the higher rate for heavier weed infestations.</li> <li>Seeding or transplanting should be done with a minimum amount of soil disturbance.</li> <li>Crop plants emerged at time of application will be killed.</li> <li>Can be used in fallow bed/stale seedbed for weed control alone or tank mixed with Goal. Consult the Goal label for a list of weeds controlled, rates of application and precautions.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>VEGETABLES</b> Eggplant Tomatoes Peppers	3	Directed Spray	2.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>For control or suppression of emerged weeds between rows after crop establishment.</li> <li>Use precision directed spray application equipment adjusted to prevent spray contact with crop plants. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>Apply when weeds are succulent and weed growth is less than 6".</li> <li>Do not apply more than 3 applications per season.</li> <li>Do not allow animals to graze in treated areas.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>
<b>VEGETABLES</b> Tomatoes	2	After Final Harvest	2.4-3.75 pts.	Ground: 40-120 gals.		<ul style="list-style-type: none"> <li>Apply in 40-120 gallons of water per acre (0.62-0.93 lb. a.i./A).</li> <li>Add NIS containing 75% or more surface active agent at 0.125 v/v (1 pt./100 gals. spray solution).</li> <li>Thorough coverage of the tomato vines is required to ensure maximum herbicide burndown.</li> <li>Use of dirty or muddy water may deactivate Gramoxone Inteon.</li> <li>To help facilitate removal of Sweet Potato Whitefly, burn tomato vines with propane burners as soon as possible after the vines have dried down sufficiently.</li> <li>DO NOT apply more than a total of 3 lbs. active ingredient (paraquat) per acre per season.</li> <li>To minimize drift, do not use nozzles or nozzle configurations which produce fine spray droplets (mist).</li> </ul>
<b>VEGETABLES</b> (California, Washington, Oregon, Idaho only) Lettuce Melon Sugar Beets Tomatoes	2	Broadcast	0.75-1.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
VEGETABLES Rhubarb	2	Dormant	2.5-4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"><li>• Apply during dormant season before buds in crown begin to grow.</li><li>• Do not make more than 2 applications per season.</li></ul>

## ALFALFA

**Table 2. New Seedlings - Suppression and control of broadleaf weeds and grasses in new alfalfa seedlings grown for hay (California only)**

For Control of:	Rate/Acre	
	For Suppression	For Control
Spikeweed (4 inches tall or less)	8 fl. oz.	16-32 fl. oz.
Volunteer Small Grain (8 inches tall or less)	8-16 fl. oz.	32 fl. oz.
Fiddleneck (6 inches tall or less)	8-16 fl. oz.	32 fl. oz.
Shepherdspurse	16-32 fl. oz.	-
Annual Bluegrass	-	16-32 fl. oz.
Chickweed	-	16-32 fl. oz.
Red Maids (6 inches tall or less)	-	16-32 fl. oz.

Do not use the 8.0 fl. oz. rate unless the alfalfa has at least 3 trifoliate leaves; the 16.0 fl. oz. rate unless the alfalfa has 6 trifoliate leaves; or rates over 16.0 fl. oz. unless there are 9 trifoliate leaves.

## RESIN SOAKING

Pines (Loblolly, Shortleaf, Longleaf, Slash, Virginia, Pond, Pitch, and Spruce Pines)

**Tree Selection** - Select trees to be treated from stands on sites not subject to periods of extreme drought stress as the desiccating effect of Gramoxone Inteon to pines is accentuated during such periods, causing a reduction in the amount of oleoresin deposited in the xylem. Select trees to be treated from vigorous, nonstagnated stands, either natural or planted. In stagnated stands or commercial timber stands, plan treating with Gramoxone Inteon not sooner than three years after a commercial thinning.

**Application Directions** - Apply Gramoxone Inteon diluted in water to a suitable wound in the tree trunk to bring the treatment into contact with the xylem (sapwood).

**Bark Streaks or Cuts:** This type of wound is made using a standard or rotary bark hack or a chainsaw chipping tool employed in naval stores work to remove a single 1-inch wide streak of bark about 1-2 ft. from ground level. The total length should not exceed 1/3 of the tree circumference. Multiple streaks or cuts can result in serious girdling of the trunk and premature death of the tree. A coarse spray (about 1.7-5.0 ml.) Gramoxone Inteon solution (1-5% cation, wt./wt. basis) should be applied to runoff to the exposed xylem, using a low-pressure sprayer. The amount of spray required per cut depends on tree circumference and the length of cut or streak (1/3 of circumference). For a 9-inch diameter tree, 3 ml. of spray will cover the 1-inch wide streak. Using 3 ml. of a 2 or 4% Gramoxone Inteon solution will result in application of 60 or 120 mg. Gramoxone Inteon per streak.

**Time of Treatment:** Resin soaking can occur from treatments made any time of the year; however, cool season treatments under nondrought conditions usually result in less severe pine beetle infestations and longer tree life.

**Interval Between Treatment and Tree Harvest:** The interval between application of Gramoxone Inteon and tree harvest should be a minimum of 6 months and preferably from 12-24 months. Intervals of over 6 months may not be possible under conditions of drought or serious pine beetle attacks, which may make early harvest necessary. The Gramoxone Inteon treatment may encourage beetle attack, or may cause premature death of the tree. Desiccation of the xylem tissue, rather than the desired resin soaking, may occur, and is more likely at higher dosage rates.

**Effect on Stem Growth:** Gramoxone Inteon treatment can result in reduced stem growth during the interval between treatment and tree harvest.

Dilution Table for Gramoxone Inteon (2.0 lbs. cation per gallon):	
Concentration of Cation Desired (Wt./Wt. Basis)	To 1 Gallon of Gramoxone Inteon add the following No. Gals. of Water:
0.2%	118.8
0.5%	46.8
1.0%	22.9
2.0%	10.9
3.0%	6.9
4.0%	4.9
5.0%	3.7



Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CONSERVATION RESERVE, FEDERAL SET-ASIDE, CONSERVATION COMPLIANCE PROGRAMS</b> (For use in compliance with the Federal Conservation Reserve Program or Federal set-aside programs).	3	Broadcast	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>For improved emerged weed control or extended weed control, Gramoxone Inteon may be tank mixed with other herbicides registered for this use. Refer to tank mix herbicide labels for specific directions, limitations, cautions and for a list of weeds controlled.</li> </ul>
<b>NONCROP USES</b>	10	Broadcast or Spot Treatment	2.5-4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>For use in noncrop areas such as public airports, electric transformer stations, pipeline pumping stations, around commercial buildings, storage yards and other installations, fence lines or similar noncrop areas.</li> <li>Avoid contact with the foliage of ornamentals or desired plants.</li> <li>Repeat as necessary.</li> </ul>
<b>PASTURE RESEEDING</b> For suppression of existing sod and undesirable emerged broadleaf weeds and grasses prior to or at time of planting grasses or forage legumes	3	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	See specific geographic recommendation	<p><b>West of Cascade and Sierra Nevada Mountains</b></p> <ul style="list-style-type: none"> <li>Apply in October through December after first fall rains and after weeds have emerged and sod has started new growth.</li> <li>For best seeding results, apply on moderately to heavily grazed areas.</li> <li>Do not use in areas with heavy sod and weed growth.</li> </ul> <p><b>East of Rocky Mountains</b></p> <ul style="list-style-type: none"> <li>Use the 2.0 pt. rate on vigorous or coarse sod species such as brome grass.</li> <li>Apply prior to, or at time of seeding grasses or forage legumes.</li> <li>Apply only to grazed or mowed pastures not more than 3" in height at time of treatment.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
						<b>Bermudagrass or Bahiagrass Sods</b> <ul style="list-style-type: none"> <li>• Apply in late summer or early fall to sod not exceeding 3 inches in height.</li> <li>• For control of emerged Little Barley, apply in February or March before the midboot stage of Little Barley.</li> </ul>
						<b>Bermudagrass and Coastal Bermudagrass Pastures</b> <ul style="list-style-type: none"> <li>• Apply when bermudagrass is dormant.</li> <li>• For control of little barley, apply before the mid-boot stage.</li> <li>• Do not mow for hay until 40 days after treatment</li> </ul>
For Control of Endophyte-Fungus-Infected Fescue Forage Legume/Grass Mixture and Other Grass Pastures	2	Broadcast (Split Application)	1.5-2.5 pts. followed by 1.5-2.5 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>• Use split applications of 10-21 days apart if necessary.</li> <li>• Do not exceed 2.6 pts./A total in preparation for reseeding.</li> <li>• For spring plantings, the initial application of 1.5-2.5 pts. may be made the previous fall.</li> <li>• Apply when fescue is actively growing and no more than 4" high.</li> <li>• To reduce the infestation of endophyte-infested grass, do not allow fescue to go to seed starting with the preceding year's crop.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
*For Prickly Pear Desiccation in Pastures	10	Spot Sprays	1.0 fl. oz. per gallon of water	Spray to wet weed foliage		<p>*Not for use in California.</p> <ul style="list-style-type: none"> <li>Knapsack, backpack sprayers, pump-up pressure sprayers, hand-guns, hand wands, and other hand-held equipment can be used to direct the spray onto weed foliage for spray to wet applications.</li> <li>Mix 1.0 fl oz of Gramoxone Inteon and 1/3 fl. oz. of a nonionic surfactant per gallon of water.</li> <li>Spray coverage should be uniform and provide complete cover of all green prickly pear foliage.</li> <li>Apply in May through September for best desiccation results.</li> <li>Do not use more than 2.5 pts. of Gramoxone Inteon per acre per year.</li> <li>Apply only to pastures with no more than 3" of height at time of treatment.</li> <li>For improved desiccation and perennial control of Prickly pear, tank mix with Grazon P+D Specialty Herbicide at a rate of 1-2 fl. oz. per gallon of water.</li> <li>Refer to the Grazon P+D Specialty Herbicide label for directions, restrictions, and precautions.</li> </ul>
*For Juniper Species leaf moisture reduction or desiccation prior to <u>Prescribed</u> burning of pastures	10	Broadcast	2.0 pts.	Air: 5 gals.		<p>*Not for use in California.</p> <ul style="list-style-type: none"> <li>Use only in conjunction with prescribed burning as recommended and monitored by local SCS or University and Extension Range Specialists.</li> <li>Apply during hot, dry weather conditions (generally July and August).</li> <li>Use 2% v/v nonionic surfactant in a minimum of 5 gpa spray solution.</li> <li>Juniper leaf moisture content should be monitored; however, maximum leaf moisture reduction generally occurs 3-4 weeks after Gramoxone Inteon application.</li> <li>Significant soil moisture and/or wet weather conditions prior to or after application will decrease the potential for Juniper Crown burns.</li> <li>Cool or humid weather conditions also adversely affect leaf moisture reduction.</li> <li>Do not graze livestock after application or prior to burning.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
*Native Pastures	2	Broadcast	1.5-1.8 pts.	Ground: 10 gals. Air: 5 gals.		<p>*Not for use in California</p> <ul style="list-style-type: none"> <li>• Apply Gramoxone Inteon for control of Downy and Japanese Brome.</li> <li>• Apply in spring after 90% node formation of brome species, but before full bloom.</li> <li>• Emerged native perennial grasses will be burned by application, but application after 90% node formation will allow adequate time for native grasses to recover and attain maximum growth in the use season.</li> <li>• Do not apply more than 1.8 pts. Gramoxone Inteon per year</li> <li>• Apply only to pastures with no more than 3" of height at time of treatment.</li> </ul>

<b>Conversion Table</b> <b>Gramoxone Inteon to Be Applied</b>			
<b>Ounces</b>	<b>Pints</b>	<b>Lb. a.i.</b>	<b>Acres/Gallon</b>
16.0	1.0	0.25	8.00
24.0	1.5	0.375	6.00
32.0	2.0	0.5	4.00
40.0	2.5	0.625	3.20
48.0	3.0	0.75	2.66
56.0	3.5	0.875	2.28
64.0	4.0	1.00	2.00

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## **STORAGE AND DISPOSAL**

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Do not contaminate water, food, or feed by storage or disposal.

### **Pesticide Storage**

Store at temperatures above 32°F.

### **Pesticide Disposal**

Pesticides wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### **Container Disposal**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For Bulk/Mini-Bulk Containers - Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

### **Bulk/Mini-Bulk Refillable Containers**

Before refilling, inspect thoroughly for damage, such as cracks, punctures, bulges, dents, abrasions and damaged or worn threads on closure devices. After filling and

before transporting, check for leaks. Do not refill or transport damaged or leaking container.

For help with any spill, leak or fire involving this material, call 1-800-888-8372.

**CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!**

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For non-emergency (e.g., current product information), call  
Syngenta Crop Protection at 1-800-334-9481.

Syngenta Crop Protection, Inc.  
Greensboro, North Carolina 27409  
[www.syngenta-us.com](http://www.syngenta-us.com)

(Base/Container Label)

**RESTRICTED USE PESTICIDE**  
**Due to Acute Toxicity**

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Gramoxone Inteon™

Herbicide

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) ..... 30.1%

Other Ingredients: ..... 69.9%

Total: ..... 100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon.  
Contains alerting agent (odor), emetic, dye and Inteon Technology.

See directions for use in attached booklet.

EPA Reg. No. 100-

EPA Est.

**KEEP OUT OF REACH OF CHILDREN.**



**DANGER / POISON**  
**PELIGRO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)



- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

2.5 gallons  
Net Contents

\_\_\_\_ gallons  
Net Contents

<b>FIRST AID</b> <b>Contains Paraquat, a Bipyrilidium Herbicide</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• SPEED IS ESSENTIAL. Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fullers Earth.</li> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• The odor of this product is from the alerting agent, which has been added, not from the paraquat.</li> <li>• If person is not breathing, call 911 or an ambulance.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>NOTE TO PHYSICIAN</b> Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment'. ( <a href="http://www.syngenta.com/pqmedguide/">http://www.syngenta.com/pqmedguide/</a> ) Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment..	
<b>HOT LINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call <b>1-800-888-8372</b>	

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## PRECAUTIONARY STATEMENTS

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### HAZARDS TO HUMANS AND DOMESTIC ANIMALS



**DANGER / POISON**  
**PELIGRO**

May be fatal if swallowed. Fatal if inhaled. Causes substantial but temporary eye injury. Harmful if absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Do not breathe spray mist. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash clothing before reuse.

**IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

### Environmental Hazards

**Wildlife:** This product is toxic to wildlife. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

**Drift:** Gramoxone Inteon is a contact herbicide that desiccates all green plant tissue. Paraquat dichloride is toxic to nontarget crops and plants if off-target movement occurs. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion. Refer to the local state laws, regulations, guidelines and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement.

## Physical and Chemical Hazards

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

[Warranty Statement on Bulk Only]

### CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and Buyer and User assume the risk of any such use. SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE)**

**RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitations of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

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## **STORAGE AND DISPOSAL**

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Do not contaminate water, food, or feed by storage or disposal.

### **Pesticide Storage**

Store at temperatures above 32°F.

### **Pesticide Disposal**

Pesticides wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### **Container Disposal**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For Bulk/Mini-Bulk Containers - Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

### **Bulk/Mini-Bulk Refillable Containers**

Before refilling, inspect thoroughly for damage, such as cracks, punctures, bulges, dents, abrasions and damaged or worn threads on closure devices. After filling and before transporting, check for leaks. Do not refill or transport damaged or leaking container.

For help with any spill, leak or fire involving this material, call **1-800-888-8372**.

**CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!**

---

Gramoxone Inteon™ and the Syngenta logo are trademarks of a Syngenta Group Company

©2004 Syngenta

Syngenta Crop Protection, Inc.  
Greensboro, NC 27409  
[www.syngenta-us.com](http://www.syngenta-us.com)

GRAMOXONE INTEON CLEAN – pd – 09/15/04  
000100-XXXXX.20040914.GRAMOXONE-INTEON-091404.pdf

PIN PUNCH

Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419-8300  
www.syngenta.com



**FEDERAL EXPRESS**

September 13, 2004

Mr. Jim Tompkins, PM 25  
Office of Pesticide Programs (H7504C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1801 South Bell Street  
Arlington, VA 22202-4501

**SUBJECT: Request for New Registration for Gramoxone Inteon, EPA Reg. No. 100-**

Dear Mr. Tompkins:

Syngenta Crop Protection requests the Agency consider the enclosed applications for pesticide registration of a new herbicide containing the active ingredients paraquat dichloride. All data required for this registration is herein submitted. See attached Confidential Attachment A for additional details on this submission.

**Attachments:**

- ◇ Application for Pesticide Registration, EPA Form 8570-1
- ◇ Certification with Respect to Citation of Data form
- ◇ Confidential Attachment A
- ◇ 2 copies of the CSF
- ◇ 5 paper copies of the proposed label
- ◇ One electronic copy on CD
- ◇ Certification with Respect to Label Integrity
- ◇ Transmittal document and studies listed therein
- ◇ A data matrix for the paraquat technical

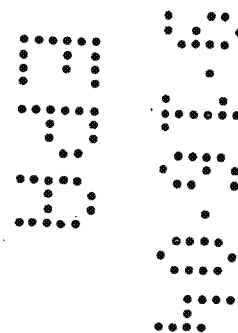
Please contact me at (336) 643-6324 if there are any questions regarding this submission.

Kind regards,

A handwritten signature in cursive script, reading "Jerry Wells".

Jerry Wells  
Regulatory Product Manager

Enclosures





PRR assist fee



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

September 17, 2004

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

PLEASE RETURN A COPY OF THIS LETTER WITH PAYMENT

OPP Decision Number: D-348898  
EPA File Symbol or Registration Number: 100-RERT  
Product Name: GRAMOXONE INTEON  
EPA Receipt Date: 16-Sep-2004  
EPA Company Number: 100  
Company Name: SYNGENTA CROP PROTECTION, INC.

JERRY WELLS  
SYNGENTA CROP PROTECTION, INC.  
ATTN: REGULATORY AFFAIRS  
PO Box 18300  
GREENSBORO, NC 27419-8300

SUBJECT: Receipt of Registration Application Subject to Registration Service Fee

Dear Registrant:

The Office of Pesticide Programs has received your application for registration. If you submitted data with this application, the results of the PRN-86-5 screen will be communicated separately. During the administrative screen, the Office of Pesticide Programs has determined that this Action is subject to a Pesticide Registration Service Fee as defined in the Pesticide Registration Improvement Act.

The Action has been identified as Action Code: R32

NEW PRODUCT;NON-FAST TRACK;NEW PHYSICAL FORM (EXCLUDES SELECTIVE CITATIONS);

Please remit payment in the amount of: \$ 10,000 to:

By USPS:  
USEPA Washington Finance Center  
Pesticide Registration Service Fee  
PO Box 360277  
Pittsburgh, PA 15251

SEP 27 2004

Pay RR/H fee



**FEDERAL EXPRESS**

October 1, 2004

U.S. EPA Washington Finance Center  
Pesticide Registration Service Fee  
C/O Mellon Client Service  
500 Ross Street, Room 670  
Box 360277  
Pittsburgh, PA 15251-6277

**SUBJECT: REGPAY FEE FOR GRAMOXONE INTEON (EPA REG. NO. 100-RERT)  
OPP DECISION NUMBER: D-348898**

To EPA Module Supervisor:

Enclosed is check number 33744223 in the amount of \$10,000.00 for the REGPAY Fee for (Gramoxone Inteon, EPA Reg. No. 100-RERT) – OPP Decision Number D-348898. The action has been identified as Action Code R32.

If you have any questions or comments, please contact me at (336) 632-6324 or my Regulatory Assistant, Tiffany Rudolph at (336) 632-2592.

Respectfully submitted,

A handwritten signature in cursive script that reads "Jerry Wells".

Jerry Wells  
Regulatory Product Manager

Enclosure

*Paraquat*

By Courier:  
U.S. EPA Washington Finance Center  
Pesticide Registration Service Fee  
C/O Mellon Client Service Center  
500 Ross Street, Room 670  
Box 360277  
Pittsburgh, PA 15251-6277  
Attn: EPA Module Supervisor  
Telephone: (412) 236-2294

All payments must be in United States currency by check, bank draft, or money order drawn to the order of the Environmental Protection Agency. To ensure proper credit, please write the OPP DECISION NUMBER on your check, and enclose a copy of this letter with your payment.

You may be eligible for a full or partial waiver of the registration service fee if, for example, you qualify as a small business or are applying for a minor use, or if your application is solely associated with an IR-4 tolerance petition. Please be advised that if you intend to request a waiver, you must do so in writing within 15 days of receipt of this invoice instead of remitting the amount indicated above. OPP will not consider waiver requests after the registration service fee has been paid. Information regarding eligibility and how to request and document a fee waiver is available on the OPP Fee for Service web site at [www.epa.gov/pesticides/fees](http://www.epa.gov/pesticides/fees).

If you have any questions, please contact the Pesticide Registration Service Fee Ombudsman at (703) 305-6249.

Sincerely,

*Teresa Downs*

Front End Processing Staff  
Information Resources and Services Division

**syngenta**Bank of America  
Atlanta, GA 30384-7266CHECK NUMBER: 33744223  
64-1278/611Syngenta Crop Protection, Inc.  
Greensboro, NC 27409DATE  
10/01/2004AMOUNT  
\*\*\*\*\*10,000.00\*

Pay: \*TEN THOUSAND\*\*\*\*\* and 00/100

To  
the  
order  
of:ENVIRONMENTAL PROTECTION AGENCY  
PESTICIDE REGISTRATION SERVICE FEE  
PO BOX 360277  
PITTSBURG PA 15251*B. L. Winch*  
VOID After Ninety (90) Days

OPP DECISION NUMBER: D-348898

⑈33744223⑈ ⑆061112788⑆ 0101163351⑈

SYNGENTA Greensboro, NC Syngenta Crop Protection, Inc. #33744223 10/01/2004 Page 1

SYNGENTA NUMBER	INVOICE NUMBER	INVOICE DATE	GROSS	DISCOUNT	NET
CROP-19066630	092810000	09/28/2004	10,000.00	0.00	10,000.00
HOLD					
TOTALS:	10,000.00	0.00	10,000.00		

2233878 ENVIRONMENTAL PROTECTION AGENCY

MRID's



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

October 6, 2004

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

SYNGENTA CROP PROTECTION, INC.  
PO Box 18300  
GREENSBORO, NC 27419-8300

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your submittal of 05-OCT-04. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your submittal was found to be in full compliance with the standards for submission of data contained in PR Notice 86-5. A copy of your bibliography is enclosed, annotated with Master Record ID's (MRIDs) assigned to each document submitted. Please use these numbers in all future references to these documents. Thank you for your cooperation. If you have any questions concerning this data submission, please raise them with the cognizant Product Manager, to whom the data have been released.

OCT 11 2004

*K*



**syngenta**

FEDERAL EXPRESS

September 13, 2004

Mr. Jim Tompkins, PM 25  
Office of Pesticide Programs (H7504C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1801 South Bell Street  
Arlington, VA 22202-4501

100-RERT  
1216

**SUBJECT: Request for New Registration for Gramoxone Inteon, EPA Reg. No. 100-**

Dear Mr. Tompkins:

Syngenta Crop Protection requests the Agency consider the enclosed applications for pesticide registration of a new herbicide containing the active ingredients paraquat dichloride. All data required for this registration is herein submitted. See attached Confidential Attachment A for additional details on this submission.

Attachments:

- ◊ Application for Pesticide Registration, EPA Form 8570-1
- ◊ Certification with Respect to Citation of Data form
- ◊ Confidential Attachment A
- ◊ 2 copies of the CSF
- ◊ 5 paper copies of the proposed label
- ◊ One electronic copy on CD
- ◊ Certification with Respect to Label Integrity
- ◊ Transmittal document and studies listed therein
- ◊ A data matrix for the paraquat technical

Please contact me at (336) 643-6324 if there are any questions regarding this submission.

Kind regards,



Jerry Wells  
Regulatory Product Manager

Enclosures

CONFIDENTIAL ATTACHMENT A.

Gramoxone Inteon is a new and novel formulation of paraquat dichloride. The formulation is designed to gel in the event it enters the human stomach as a result of accidental or intentional ingestion. The gelling and increased levels of emetic are intended to minimize the entry of paraquat into the intestine where much of the absorption occurs. The formulation also offers some improvement in dermal effects. For purposes of review, the formulation identified as A7813K, a 240g/l paraquat dichloride formulation (2 lb. of cation per gallon) and Gramoxone Inteon are one and the same. The formulation contains a new olfactory alerting agent, cis-3-Hexen-ol.\* A petition, 3E6589, for an exemption from tolerance was submitted April 8, 2003 and is listed on EPA's inert workplan for a decision in 4Q 2004. We understand this will likely be pushed back on EPA's workplan for 1Q 2005.

A "5 pack" of acute toxicity studies is being submitted with this application. An acute inhalation study will not be conducted with the formulation. Syngenta proposes to defer to the study conducted on the currently registered paraquat dichloride formulation. The results indicate a Category I classification and a new study would almost certainly not improve the classification. For this reason and the non-respirable particle size of spray droplets, Syngenta will propose a Category I classification for acute inhalation toxicity be assigned for this formulation. The MRID for the study we are citing to fulfill this requirement is MRID 00046105.

In addition to the routine acute studies, Syngenta is submitting studies for review that are relevant to the improved acute oral toxicity. The improvement is not applicable in rodents, as they cannot regurgitate. A study was conducted on dogs to provide proof of concept and an indication of the level of improved safety. This study and a study summarizing previous work with the unimproved formulation are included in this submission.

Finally, Syngenta is also submitting studies that support a 200g/l formulation. We are not requesting US registration of this formulation. They are submitted to support the cooperative effort between USEPA and the Ministry of Health in Mexico in registering similar formulations with the new safety feature. The acute toxicity studies and a similar set of dog studies as previously described are included in this submission. . The studies that are relevant to the 200g/l formulation are included in volumes 13 through 19 in the attached transmittal document.

\* cis-3-Hexen-ol = leaf alcohol.

**VOLUME 1 OF 19 OF SUBMISSION**  
**(TRANSMITTAL DOCUMENT)**

1. **Name and Address of Submitter**

Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419

2. **Regulatory Action in Support of which this Package is Submitted**

Submission of New Registration for Gramoxone Inteon, EPA Reg. No. 100-XXXX

3. **Transmittal Date**

9/14/2004

4. **List of Submitted Studies**

MRID NUMBER	VOLUME NUMBER	STUDY TITLE	EPA GUIDELINE NUMBER
	1 OF 19	Transmittal document	NA
46377401	2 OF 19	Manufacturing Process Description and Supporting Data for Paraquat Dichloride SL (A7813K);(PC-04-072), (09003aeb80160404),(431505)	830.1550, 830.1600, 830.1650, 830.1670, 830.1750, 830.1800
46364502	3 OF 19	Physical and Chemical Properties of Paraquat Dichloride SL (A7813K);(PC- 04-073),(09003aeb80160404),(431506)	830.6302, 830.6303, 830.6304, 830.6314, 830.6315, 830.6316, 830.6317, 830.6319, 830.6320, 830.6321, 830.7000, 830.7100, 830.6317,
46364503	4 OF 19	Paraquat 240 g/l SL Formulation (A7813K) -Acute Oral Toxicity in the Rat -Up and Down Procedure;(006/438), (09003aeb80160404),(432246)	870.1100

MRID NUMBER	VOLUME NUMBER	STUDY TITLE	EPA-GUIDELINE NUMBER
----------------	------------------	----------------	-------------------------

46364504	5 OF 19	Paraquat 240g/l SL Formulation (A7813K) -Acute Dermal Irritation in the Rabbit;(006/406), (09003aeb80160404),(432260)	870.2500
46364505	6 OF 19	Paraquat 240 g/l SL Formulation (A7813K) -Acute Dermal Toxicity (Limit Test) in the Rat;(006/439), (09003aeb80160404),(432247)	870.1200
46364506	7 OF 19	Paraquat 240 g/l SL Formulation (A7813K) -Acute Eye Irritation in the Rabbit;(006/407),(09003aeb80160404), (432245)	870.2400
46364507	8 OF 19	Dermal Sensitization Study in Guinea Pigs (Buehler Method) with Paraquat (240 g/L) and PP796 (1.5 g/L) SL (A7813K);(T001178-04), (09003aeb80160404),(431581)	870.2600
46364508	9 OF 19	Dermal Sensitization Study in Guinea Pigs (Buehler Method) with alpha-Hexylcinnamaldehyde, Technical; (T013408-04),(09003aeb80160404), (431587)	870.2600
46364509	10 OF 19	Summary of Acute Toxicology Studies with Paraquat 240g/l Formulation (A7813K);(T017586-04), (09003aeb80160404),(432510)	NA
46364510	11 OF 19	Paraquat 240g/l SL Formulation (A7813K) -Toxicokinetic Study in the Dog;(XD7355),(09003aeb80160404), (432825)	NA
46364511	12 OF 19	Gramoxone 200g/l SL Formulation (A3879D) -Toxicokinetic Study in the Dog;(XD7388),(09003aeb80160404), (432824)	NA

MRID NUMBER	VOLUME NUMBER	STUDY TITLE	EPA GUIDELINE NUMBER
----------------	------------------	----------------	-------------------------

46364512	13 OF 19	Paraquat 200g/l SL Formulation (A3879BU) -Eye Irritation Study in the Rabbit;(FB6020),(09003aeb80160404), (432827)	870.2400
46364513	14 OF 19	Paraquat 200g/l SL Formulation (A3879BU) -Skin Irritation Study in the Rabbit;(EB5012),(09003aeb80160404), (432826)	870.2500
46364514	15 OF 19	Paraquat 200g/l SL Formulation (A3879BU) -Acute Dermal Toxicity Study in the Rat;(CR3618), (09003aeb80160404),(432823)	870.1200
46364515	16 OF 19	Paraquat 200g/l SL Formulation (A3879BU) -Acute Oral Toxicity Study in the Rat -Up and Down Procedure; (AR7304),(09003aeb80160404), (432822)	870.1100
46364516	17 OF 19	Paraquat 200g/l SL Formulation (A3879BU) -Skin Sensitisation Study in the Guinea Pig;(GG7729), (09003aeb80160404),(432828)	870.2600
46364517	18 OF 19	Paraquat 200g/l SL Formulation (A3879BU) -Toxicokinetic Study in the Dog;(XD7201),(09003aeb80160404), (432829)	NA

MRID NUMBER	VOLUME NUMBER	STUDY TITLE	EPA-GUIDELINE NUMBER
----------------	------------------	----------------	-------------------------

46364518

19 OF 19

Paraquat - Gramoxone 200g/l  
Formulation - Toxicokinetic Study in the  
Dog; (026118), (09003aeb80160404),  
(432830)

NA

COMPANY OFFICIAL: JERRY WELLS  
(NAME)

*Jerry Wells*  
(SIGNATURE)

COMPANY NAME: SYNGENTA CROP PROTECTION, INC.

COMPANY CONTACT: JERRY WELLS  
(NAME)

336-632-6324  
(PHONE)

Alt. Form. - cmt. in R. Conc.



February 1, 2005

Mr. Jim Tompkins, PM 25  
Office of Pesticide Programs (H7504C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1801 South Bell Street  
Arlington, VA 22202-4501

**SUBJECT: SUBMISSION OF ALTERNATE FORMULAS FOR GRAMOXONE INTEON™**

Dear Mr. Tompkins:

Syngenta Crop Protection, Inc. is requesting Agency approval of an Alternate Formula for Gramoxone Inteon, EPA File Symbol, 100-RERT. This alternate formula is requested to allow production using an alternate formula of Paraquat Concentrate ES (submitted under separate cover) that contains all of the emetic required for Gramoxone Inteon.

In support of this submission the following items are enclosed:

- Two copies of Confidential Statement of Formulas for proposed alternate formula for Gramoxone Inteon™ (CSF 402/1)
- Registration Application Form 8570-1
- Confidential Appendix

Since this is a fast track action, Syngenta believes that this amendment is not subject to fees established under the Pesticide Registration Improvement Action (PRIA).

If you have any questions regarding this submission please contact me at 336-632-6324.

Kind regards,

A handwritten signature in black ink, appearing to read "Jerry Wells", with a long, sweeping horizontal stroke extending to the right.

Jerry Wells  
Regulatory Product Manager



## **CONFIDENTIAL APPENDIX**

- PP796 emetic has been removed from this Confidential Statement of Formula entirely.
- The end-use Gramoxone Inteon formulation will contain approximately 1.5 g/L of emetic, which corresponds to approximately 0.136% wt/wt of emetic in A7813K.
- The specific PP148AC design code has been added regarding the Paraquat Concentrate ES ingredient.
- The pH range listed on the CSF has been widened.
- Nominal for water has been adjusted
- NaOH has been changed from as a 25% solution to a 100%

## **CONFIDENTIAL BUSINESS INFORMATION**



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460  
**Confidential Statement of Formula**

A.



Basic Formulation



Alternate Formulation

B.

Page 1 of 6

CSF402/1

1. Name and Address of Applicant/Registrant (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419			2. Name and Address of Producer (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419						
3. Product Name  Gramoxone Inteon™ (A7813K)			4. Registration No./File Symbol 100-		5. EPA Product Mgr./Team No. James Tompkins/25		6. Country Where Formulated U.S.A.		
			7. Pounds/Gal. Bulk Density 9.2 lbs/gal (typical)		8. pH 5-8 (1% dispersion in H <sub>2</sub> O at 25°C)		9. Flash Point/Flame Extension >217° F (>103°C)		
EPA USE ONLY	10. Components in Formulation (List as actually introduced into the formulation. Give commonly accepted chemical name, trade name, and CAS number.)		11. Supplier Name & Address		12. EPA Reg. No.	13. Each Component in Formulation a. Amount b.% by wt.		14. Certified Limits % by Weight a.Upper Limit b.Lower Limit	15. Purpose in Formulation
The following information is claimed by Syngenta Crop Protection, Inc. to be confidential and a trade secret under FIFRA Section 10.									
	Paraquat Concentrate ES: CAS Name: 1,1'-dimethyl-4,4'-bipyridinium dichloride; PP148AC (nominal a.i. 45.6% as paraquat dichloride) CAS No.: 1910-42-5		Syngenta Crop Protection, Inc. Greensboro, NC		100-1067	6,600 lbs.	66.0		Active Ingredient
	[ *Paraquat Dichloride as 100% pure active						30.1	31.0	29.2 ]
	Magnesium sulfate heptahydrate (epsom salt) CAS No.: 10034-99-8					563 lbs.	5.63	5.91	5.35 Stabilizer
	Magnesium sulfate heptahydrate CAS No.: 10034-99-8 or		PQ Corporation Valley Forge, PA		180.910				
	Magnesium sulfate heptahydrate CAS No.: 10034-99-8 or		Giles Chemical Corporation Waynesville, NC		180.910				

16. Typed Name of Approving Official Jerry Wells			17. Total Weight 10,000 lbs		100%		
18. Signature of Approving Official 		19. Title Regulatory Product Manager		20. Phone No. (Include Area Code) (336) 632-6324		21. Date 1-10-05	

EPA Form 8570-4 (Rev. 2-85) Previous editions are obsolete.

I:\Confidential Statements of Formula\End Use Products\A7813K(CSF402-1)Gramoxone Inteon.doc; was 7-Jan-05

Original and Second copy to EPA.  
Third copy to Applicant



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460  
**Confidential Statement of Formula**

A. ☐ Basic Formulation  
☒ Alternate Formulation

B.  
Page 2 of 6

CSF402/1

1. Name and Address of Applicant/Registrant (Include ZIP Code)

Syngenta Crop Protection, Inc.  
P. O. Box 18300  
Greensboro, NC 27419

2. Name and Address of Producer (Include ZIP Code)

Syngenta Crop Protection, Inc.  
P. O. Box 18300  
Greensboro, NC 27419

3. Product Name

Gramoxone Inteon™  
(A7813K)

4. Registration No./File Symbol  
100-7. Pounds/Gal. Bulk Density  
9.2 lbs/gal (typical)5. EPA Product Mgr./Team No.  
James Tompkins/258. pH 5-8 (1% dispersion  
in H<sub>2</sub>O at 25°C)6. Country Where Formulated  
U.S.A.9. Flash Point/Flame Extension  
>217° F (>103°C)

EPA USE ONLY

10. Components in Formulation (List as actually introduced into the formulation. Give commonly accepted chemical name, trade name, and CAS number.)

11. Supplier Name &amp; Address

12. EPA Reg. No.

13. Each Component in Formulation  
a. Amount b. % by wt.14. Certified Limits % by Weight  
a. Upper Limit b. Lower Limit

15. Purpose in Formulation

Magnesium sulfate heptahydrate  
CAS No.: 10034-99-8

K&S Kali GmbH  
Kassel, Germany

180.910

Sodium alginate  
CAS No.: 9005-38-3

82 lbs.

0.82

0.90

0.74

Stabilizer

Manutex RM

International Specialty Products  
Girvan, United Kingdom

180.950

\*\*Dimethylpolysiloxane  
CAS No.: 63148-62-9

2.3 lbs.

0.023

0.030

0.016

Antifoam

Antifoam MSA

Dow Corning Corporation  
Midland, MI

180.960

16. Typed Name of Approving Official

Jerry Wells

17. Total Weight  
10,000 lbs

100%

18. Signature of Approving Official

19. Title

Regulatory Product Manager

20. Phone No. (Include Area Code)  
(336) 632-6324

21. Date

1-10-05

EPA Form 8570-4 (Rev. 2-85) Previous editions are obsolete.

I:\Confidential Statements of Formula\End Use Products\A7813K(CSF402-1)Gramoxone Inteon.doc; was 7-Jan-05

Original and Second copy to EPA.  
Third copy to Applicant

Confidential

Business Information: Does Not Contain National Security

Information (E.O. 12065)

Form Approved OMB No. 2000-0483.



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460  
**Confidential Statement of Formula**

A.



Basic Formulation



Alternate Formulation

B.

Page 3 of 6

CSF402/1

1. Name and Address of Applicant/Registrant (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419			2. Name and Address of Producer (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419							
3. Product Name  Gramoxone Inteon™ (A7813K)			4. Registration No./File Symbol 100-		5. EPA Product Mgr./Team No. James Tompkins/25		6. Country Where Formulated U.S.A.			
			7. Pounds/Gal. Bulk Density 9.2 lbs/gal (typical)		8. pH 5-8 (1% dispersion in H <sub>2</sub> O at 25°C)		9. Flash Point/Flame Extension >217° F (>103°C)			
EPA USE ONLY	10. Components in Formulation (List as actually introduced into the formulation. Give commonly accepted chemical name, trade name, and CAS number.)		11. Supplier Name & Address		12. EPA Reg. No.	13. Each Component in Formulation a. Amount b. % by wt.		14. Certified Limits % by Weight a. Upper Limit b. Lower Limit		15. Purpose in Formulation
	**Octyl and decyl glucosides mixture with a mixture of octyl and decyloligosaccharides and related reaction products produced as an aqueous-based liquid (68-72% solids) from the reaction of straight chain alcohols (C <sub>8</sub> (45%)), C <sub>10</sub> (55%) with anhydrous glucose CAS No.: 68515-73-1					91 lbs.	0.91	1.18	0.64	Surfactant
	Agnique PG 8107 (formerly Agrimul PG 2067) or		Cognis (AgroSolutions) Cincinnati, OH		180.910					
	AL-2575		Uniqema Wilmington, DE		180.910 & Master File 115					
	Cis-3-hexenol (leaf alcohol) CAS No.: 928-96-1					18 lbs.	0.18	0.20	0.16	Stench
	Cis-3-Hexenol CAS No.: 928-96-1 or		Shin-Etsu Chemical Co., LTD Tokyo, Japan							
	Cis-3-Hexenol CAS No.: 928-96-1		Zeon Corporation Tokyo, Japan							

16. Typed Name of Approving Official Jerry Wells				17. Total Weight 10,000 lbs		100%	
18. Signature of Approving Official 		19. Title Regulatory Product Manager		20. Phone No. (Include Area Code) (336) 632-6324		21. Date 1-10-05	

EPA Form 8570-4 (Rev. 2-85) Previous editions are obsolete.

Original and Second copy to EPA.  
Third copy to Applicant

I:\Confidential Statements of Formula\End Use Products\A7813K(CSF402-1)Gramoxone Inteon.doc; was 7-Jan-05

CONFIDENTIAL - PARAQUAT LITIGATION

SYNG-PQ-01775459  
SYNG-PQ-01775459\_R

Confide

Business Information: Does Not Contain National Security

ation (E.O. 12065)

Form Approved. OMB No. 2000-0483.



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460  
**Confidential Statement of Formula**

A.



Basic Formulation



Alternate Formulation

B.

Page 4 of 6

CSF402/1

1. Name and Address of Applicant/Registrant (Include ZIP Code)

Syngenta Crop Protection, Inc.  
P. O. Box 18300  
Greensboro, NC 27419

2. Name and Address of Producer (Include ZIP Code)

Syngenta Crop Protection, Inc.  
P. O. Box 18300  
Greensboro, NC 27419

3. Product Name

Gramoxone Inteon™  
(A7813K)

4. Registration No./File Symbol

100-

7. Pounds/Gal. Bulk Density

9.2 lbs/gal (typical)

5. EPA Product Mgr./Team No.

James Tompkins/25

8. pH 5-8 (1% dispersion  
in H<sub>2</sub>O at 25°C)

6. Country Where Formulated

U.S.A.

9. Flash Point/Flame Extension  
>217° F (>103°C)

EPA USE ONLY

10. Components in Formulation (List as actually introduced into the formulation. Give commonly accepted chemical name, trade name, and CAS number.)

11. Supplier Name &amp; Address

12. EPA Reg. No.

13. Each Component in Formulation

a. Amount b. % by wt.

14. Certified Limits % by Weight

a. Upper Limit b. Lower Limit

15. Purpose in Formulation

\*\*\*Sodium Hydroxide  
(caustic soda)  
CAS No.: 1310-73-2

Sodium Hydroxide  
CAS No.: 1310-73-2

or

Occidental Chemical  
Corporation  
Dallas, TX

180.910

8 lbs.

0.08

0.10

0.001

pH  
Adjustment

Sodium Hydroxide  
CAS No.: 1310-73-2

or

Pioneer  
Houston, TX

180.910

Sodium Hydroxide  
CAS No.: 1310-73-2

or

Vulcan Chemicals  
Birmingham, AL

180.910

Sodium Hydroxide  
CAS No.: 1310-73-2

or

Dow Corning Corporation  
Midland, MI

180.910

Sodium Hydroxide  
CAS No.: 1310-73-2

LabChem, Inc.  
Pittsburgh, PA

180.910

16. Typed Name of Approving Official

Jerry Wells

17. Total Weight

10,000 lbs

100%

18. Signature of Approving Official

19. Title

Regulatory Product Manager

20. Phone No. (Include Area Code)

(336) 632-6324

21. Date

1-10-05

EPA Form 8570-4 (Rev. 2-85) Previous editions are obsolete.

I:\Confidential Statements of Formula\End Use Products\A7813K(CSF402-1)Gramoxone Inteon.doc; was 7-Jan-05

Original and Second copy to EPA.  
Third copy to Applicant

CONFIDENTIAL - PARAQUAT LITIGATION

SYNG-PQ-01775460  
SYNG-PQ-01775460\_R



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3. Product Name  Gramoxone Inteon™ (A7813K)			4. Registration No./File Symbol 100-		5. EPA Product Mgr./Team No. James Tompkins/25		6. Country Where Formulated U.S.A.			
			7. Pounds/Gal. Bulk Density 9.2 lbs/gal (typical)		8. pH 5-8 (1% dispersion in H <sub>2</sub> O at 25°C)		9. Flash Point/Flame Extension >217° F (>103°C)			
EPA USE ONLY	10. Components in Formulation (List as actually introduced into the formulation. Give commonly accepted chemical name, trade name, and CAS number.)		11. Supplier Name & Address		12. EPA Reg. No.	13. Each Component in Formulation a. Amount b. % by wt.		14. Certified Limits % by Weight a. Upper Limit b. Lower Limit		15. Purpose in Formulation
	**FD&C Blue No. 1 CAS No.: 3844-45-9					35 lbs.	0.35	0.46	0.25	Dye
	No. 00357 Blue Liquid Color		Sensient Colors, Inc. (formerly Warner-Jenkinson) St. Louis, MO		180.910					
	****Water CAS No.: 7732-18-5					2,600.7 lbs.	26.007	28.8	23.2	Diluent
<p>The certified limits have been calculated according to the regulations published in 40 CFR 158.175, except where indicated.</p> <p>* Nominal 30.1% as Paraquat Dichloride (as 100% pure active) corresponds to 21.8% as Paraquat Ion (as 100% pure active).</p> <p>** Extended ranges are being requested to allow for minor adjustments to the manufacturing process in accordance with 40 CFR 158.175(c). The limits do not exceed 3 times the standard certified limits. The expanded certified limits ensure that the final product conforms to the 95% confidence level relative to the weight percentage of each ingredient. This expanded range will not affect the risk or efficacy of the product. The actual product used in all testing accounted for this variability and conformed to the expanded limits criteria. Thus the expanded limits should not impact the performance of the commercial product.</p> <p>*** Extended range is requested to allow for pH adjustment of this formulation due to variation in raw materials and manufacturing process.</p> <p>**** Level will vary based on the allowable variation of the actual assay value for the active ingredient(s).</p>										

16. Typed Name of Approving Official Jerry Wells			17. Total Weight 10,000 lbs		100%		
18. Signature of Approving Official 		19. Title Regulatory Product Manager		20. Phone No. (Include Area Code) (336) 632-6324		21. Date 1-10-05	

EPA Form 8570-4 (Rev. 2-85) Previous editions are obsolete.

I:\Confidential Statements of Formula and Use Products\A7813K(CSF402-1)Gramoxone Inteon.doc; was 7-Jan-05

Original and Second copy to EPA.  
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Office of Pesticide Programs (TS-767)  
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Greensboro, NC 27419

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Gramoxone Inteon™  
(A7813K)

4. Registration No./File Symbol

100-

7. Pounds/Gal. Bulk Density

9.2 lbs/gal (typical)

5. EPA Product Mgr./Team No.

James Tompkins/25

8. pH 5-8 (1% dispersion  
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>217° F (>103°C)

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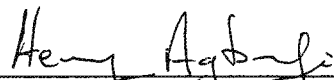
11. Supplier Name &amp; Address

12. EPA Reg. No.

13. Each Component in Formulation  
a. Amount b. % by wt.14. Certified Limits % by Weight  
a. Upper Limit b. Lower Limit

15. Purpose in Formulation

I hereby certify that, for purposes of FIFRA sec. 12(a)(1)(C), the description of the composition of Gramoxone Inteon (A7813K), EPA Reg. No. 100- , refers to the composition set forth on the Statement of Formula. This description includes the representations that: (1) no ingredient will be present in the product in an amount greater than the upper certified limit or in an amount less than the lower certified limit specified for that ingredient in this Statement of Formula; and (2) if the Agency requires that the source of supply of an ingredient be specified, that all quantities of such ingredient will be obtained from the source specified in the Statement of Formula.

  
SIGNATURE  
Henry Agbaje, Ph.D.

January 7, 2005  
DATE

16. Typed Name of Approving Official

Jerry Wells

17. Total Weight

10,000 lbs

100%

18. Signature of Approving Official

19. Title

Regulatory Product Manager

20. Phone No. (Include Area Code)

(336) 632-6324

21. Date

1-10-05  
Original and Second copy to EPA.  
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*Request to change PR/14  
cat.*



Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419-8300  
www.syngenta.com



March 17, 2005

Ms. Linda Arrington  
7505C  
USEPA Headquarters  
Ariel Rios Building  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

Dear Ms. Arrington,

I hope all is well with you. We are getting a late season snow here in North Carolina today. As we discussed on the phone today, I have a concern regarding the PRIA classification for a new product registration request for Gramoxone Inteon, 100-RERT. The OPP Decision Number is D-348898 and the Fee letter is dated September 17, 2004. The Action Code is listed as R32.

I was expecting the code to be R31 and had not noticed the change until recently. In reviewing the code explanations from *Pesticide Registration Improvement Act: Preliminary Interpretations of Fee Categories - Registration Division* it seems the action should be R31. A statement in R32 that draws attention is:

"A change in formulation that would change the way a product is applied, change the tolerances currently established, **change the toxicity of the product...**"

There is an improvement in the acute oral toxicity of the product but it only applies to humans and other vomiting species and is validated in non-guideline studies that were submitted with the registration request. These studies are not required for the registration but were submitted to show EPA data regarding the improvement in human health safety. There is no change in the signal word (compared to existing Syngenta paraquat registrations). The acute toxicity classifications and precautionary statements are based on the standard acute toxicity studies. The results are similar to those seen with existing Syngenta paraquat registrations. I am attaching a copy of the slides used to introduce the product at the WSSA in Feb. 2005 for additional information. The second to the last slide reviews the acute tox classifications.

Our concern is over the additional 6 months in the decision time, not the fee which has already been paid. I am requesting that the Action Code be revised to R31.

Kind regards,

A handwritten signature in cursive script, appearing to read "Jerry Wells".

Jerry Wells  
Syngenta Crop Protection  
336-632-6324

*PRH category changed*



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

March 28, 2005

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

PLEASE RETURN A COPY OF THIS LETTER WITH PAYMENT

OPP Decision Number: D-348898  
EPA File Symbol or Registration Number: 100-RERT  
Product Name: GRAMOXONE INTEON  
EPA Receipt Date: 16-Sep-2004  
EPA Company Number: 100  
Company Name: SYNGENTA CROP PROTECTION, INC.

G. THOMAS GALE, JR.  
SYNGENTA CROP PROTECTION, INC.  
ATTN: REGULATORY AFFAIRS  
PO Box 18300  
GREENSBORO, NC 27419-8300

SUBJECT: Receipt of Registration Application Subject to Registration Service Fee -- **Revised**

Dear Registrant:

The Office of Pesticide Programs has received your application for registration. If you submitted data with this application, the results of the PRN-86-5 screen will be communicated separately. During the administrative screen, the Office of Pesticide Programs has determined that this Action is subject to a Pesticide Registration Service Fee as defined in the Pesticide Registration Improvement Act.

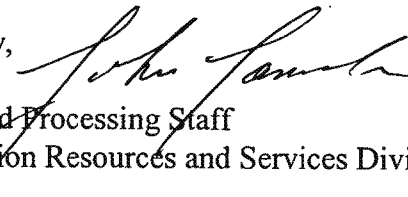
The Action previously identified as R32 has been re-classified as Action Code: R31

NEW PRODUCT;NON-FAST TRACK (INCLUDES REVIEWS OF PRODUCT  
CHEMISTRY;ACUTE TOXICITY;PUBLIC HEALTH PEST EFFICACY);

The fee associated with this action is \$4,000. Because you already paid \$10,000 for the R32 action, a refund of \$6,000 will be issued.

If you have any questions, please contact the Pesticide Registration Service Fee Ombudsman at (703) 305-6249.

Sincerely,

  
Front End Processing Staff  
Information Resources and Services Division

*Received 4/1*



Linda  
Arrington/DC/USEPA/US  
03/24/05 02:56 PM

To John Jamula/DC/USEPA/US@EPA  
cc Jim Tompkins/DC/USEPA/US@EPA, Donald  
Stubbs/DC/USEPA/US@EPA  
bcc  
Subject change PRIA code

JJ,

In the RD PRIA meeting it was determined that we need to change a PRIA code from R32 to R31. The product is 100-RERT. I have spoken to the company and they will be waiting for their new bill.

Thanks

Linda Arrington  
Registration Division  
703 305 6249  
703 305 6920 (fax)

Registration Doc.  
Condensed



U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (7505C)  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460

EPA Reg.  
Number:

Date of Issuance:

100-1217

8/17/2005

Term of Issuance:

Conditional

Name of Pesticide Product:

Gramoxone Inteon

**NOTICE OF PESTICIDE:**  
  X   Registration  
     Reregistration

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419-8300

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

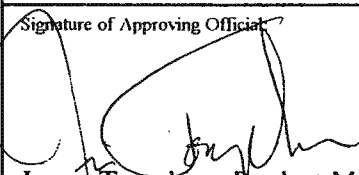
Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A) provided you agree in writing to:

1. As a condition of registration, submit the outstanding guideline studies 830.6317 (storage stability) and 830.6320 (corrosion characteristics) within 1 year from the date of registration.
2. Add the appropriate establishment number to the label.
3. Change the registration number on the label from 100 to 100-1217.
3. Place the FIRST AID STATEMENTS in the following order: If Swallowed, If Inhaled, If In Eyes, If on Skin Or Clothing.
4. On page 3, in the PPE section (Mixers and Loaders must wear), remove "Protective eyewear plus" from the statement "Protective eyewear plus a dust mist respirator with any N, R, P or HE filter."

Signature of Approving Official

Date:

  
James Tompkins, Product Manager (25)  
Herbicide Branch, Registration Division (7505C)

8/17/2005

EPA Form 8570-6

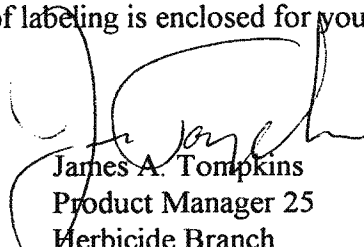
AUG 17 2005  
k

5. On page 3, remove "Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash clothing before reuse." from the PRECAUTIONARY STATEMENTS, as these are recommended in the User Safety Recommendations section.

6. On page 41, in the section Lentils, under the column Precautions, change the second bullet statement to: "May also be applied as a split application. If applied as a split application, do not exceed a total of 2 pints/A per season. Split application may improve coverage." Add a bullet BEFORE this statement that states "Do not exceed a total of 2 pints/A per season."

The basic formulation [dated 7-26-04] and the alternate formulation [dated 1-10-05] of the product referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act as amended is acceptable. The basic CSF and alternate formulation will be added to your file.

You will submit one (1) copy of your final printed labeling before you release the product for shipment. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). A stamped copy of labeling is enclosed for your records.



James A. Tompkins  
Product Manager 25  
Herbicide Branch  
Registration Division (7505C)

(Booklet – 2.5, 30, 120 Gallons and Bulk)

**RESTRICTED USE PESTICIDE  
Due to Acute Toxicity**

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Gramoxone Inteon™

Herbicide

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) ..... 30.1%

Other Ingredients: ..... 69.9%

Total: ..... 100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon.

Contains alerting agent (odor), emetic, dye and Inteon Technology

EPA Reg. No.100

EPA Est.

**KEEP OUT OF REACH OF CHILDREN.**



**DANGER / POISON  
PELIGRO**

ACCEPTED  
with COMMENTS  
in EPA Letter Dated

AUG 17 2005

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

100-1217

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

- **NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.**
- **IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.**
- **DO NOT USE OR STORE IN OR AROUND THE HOME.**
- **DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.**
- **THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.**

AUG 17 2005

*k*



<b>FIRST AID</b> <b>Contains Paraquat, a Bipyridylum Herbicide</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• <b>SPEED IS ESSENTIAL.</b> Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fullers Earth.</li> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• The odor of this product is from the alerting agent, which has been added, not from the paraquat.</li> <li>• If person is not breathing, call 911 or an ambulance.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>NOTE TO PHYSICIAN</b> Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment'. ( <a href="http://www.syngenta.com/pqmedguide/">http://www.syngenta.com/pqmedguide/</a> ) Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment..	
<b>HOT LINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call <b>1-800-888-8372</b>	

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## PRECAUTIONARY STATEMENTS

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### HAZARDS TO HUMANS AND DOMESTIC ANIMALS



### DANGER / POISON PELIGRO

May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist NIOSH-approved respirator with any N, R, P, or HE filter. Causes substantial but temporary eye injury. Wear protective eyewear (face shield required when mixing/loading). Harmful if absorbed through skin. Do not get in eyes on skin, or on clothing. Avoid contact with skin. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash clothing before reuse.

**IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

#### Personal Protective Equipment (PPE)

**Applicators and other handlers (other than Mixers and Loaders) must wear:**

- Long-sleeve shirt and long pants
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter

#### Mixers and Loaders must wear:

- Long-sleeve shirt and long pants
- Shoes plus socks
- Protective eyewear plus a dust mist NIOSH-approved respirator with any N, R, P, or HE filter
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- Chemical resistant apron
- Face shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow

manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### **Engineering Controls**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

#### **User Safety Recommendations**

##### **Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### **Environmental Hazards**

**Wildlife:** This product is toxic to wildlife. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

**Drift:** Gramoxone Inteon is a contact herbicide that desiccates all green plant tissue. Paraquat dichloride is a nonselective herbicide and will cause damage to nontarget crops and plants if off-target movement occurs. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion. Refer to the local state laws, regulations, guidelines and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement.

### **Physical and Chemical Hazards**

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

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**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

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**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and Buyer and User assume the risk of any such use. SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **IT IS THE MANUFACTURER'S INTENTION THAT THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitations of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## **DIRECTIONS FOR USE RESTRICTED USE PESTICIDE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### **DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSES OR PLAYGROUNDS**

#### **AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**For Preplant or Preemergence (Broadcast or Banded), Chemical Fallow, Postemergence Directed Spray, Early Postemergence Broadcast in Peanuts and Dormant Season Applications, and "Between Cutting" Applications in Alfalfa:**

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

**For Harvest Aid and Desiccation Applications:** Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton).

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

**DO NOT** enter or allow others to enter the treated area until sprays have dried.  
**AVOID** working in spray mist.

**KEEP** all unprotected persons out of operating areas or vicinity where there may be danger of drift.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

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### GENERAL INSTRUCTIONS AND INFORMATION

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**Do not apply this product through any type of irrigation system.**

When Gramoxone Inteon is applied at less than 10 gallons per acre finished spray volume, a drift control or spray deposition additive **SHOULD** be used. Refer to the additive label for use directions.

#### **Spray Drift Information**

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

- The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
- Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45°.

Where states have more stringent regulations, they shall be observed.

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information**.

### **Aerial Drift Reduction Advisory Information**

**(This section is advisory in nature and does not supersede the mandatory label requirements.)**

#### **Information on Droplet Size**

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

#### **Controlling Droplet Size**

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

#### **Boom Length**

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

#### **Application Height**

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making application at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

## **Swath Adjustment**

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

## **Wind**

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

## **Temperature and Humidity**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

## **Temperature Inversions**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that move upward and rapidly dissipates indicates good vertical air mixing.

## **Sensitive Areas**

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).



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## **GENERAL INFORMATION**

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Gramoxone Inteon is a contact herbicide used to control or suppress a broad spectrum of emerged weeds. Gramoxone Inteon controls most small annual weeds – both broadleaves and grasses, and suppresses perennial weeds by destroying green foliage. Gramoxone Inteon can also be used as a desiccant/defoliant at harvest.

Gramoxone Inteon is formulated as a liquid which contains 2 pounds of active ingredient per gallon. The formulation contains a nontoxic odor and an emetic (an agent which will induce vomiting if the product is swallowed). The odor is included in the formulation to help prevent accidental ingestion of Gramoxone Inteon.

Gramoxone Inteon is rapidly absorbed by green plant tissue and interacts with the photosynthetic process to produce superoxides which destroy the plant cells. Gramoxone Inteon requires actively growing green plant tissue to function. Thorough coverage of all green foliage is essential for effective weed control and for effective crop desiccation/defoliation. Gramoxone Inteon is not as effective on drought-stressed weeds, weeds with little green foliage (i.e., mowed or cut weeds), or mature woody bark of trees and vines.

Clay and organic matter rapidly tie up Gramoxone Inteon. As a result, Gramoxone Inteon has no residual soil activity to affect later-planted crops or later germinating weeds.

## **ROTATIONAL CROPS**

All rotational crops may be planted immediately after the last application of Gramoxone Inteon.

## **RAINFASTNESS**

Because Gramoxone Inteon is rapidly absorbed by the weed foliage, rain occurring 15-30 minutes or more after application will have no effect on the activity of Gramoxone Inteon.

## **APPLICATION**

Since Gramoxone Inteon is a contact-type herbicide, it is essential to obtain complete coverage of target weeds to get good control. Improper application technique and/or application to large, stressed, or mown weeds will usually result in unacceptable weed control and unacceptable crop desiccation/defoliation. Complete coverage is also essential for good crop desiccation/defoliation. See details below for specific application instructions.

## USE OF A NONIONIC SURFACTANT OR CROP OIL CONCENTRATE

**Always Add One of the Following (failure to use one of the following at recommended rates will result in reduced performance of Gramoxone Inteon).**

**Nonionic Surfactant:** Add nonionic surfactant containing 75% or more surface-active agent at a minimum of 0.125% v/v (1 pt./100 gals.), or add a nonionic surfactant containing 50-74% surface-active agent at a minimum of 0.25% v/v (2 pts./100 gals.), of the finished spray volume for ground applications. For aerial applications, add a nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume.

**Crop Oil Concentrate:** Add a nonphytotoxic crop oil concentrate or methylated seed oil containing 15-20% approved emulsifier, at 1.0% v/v (1 gal./100 gals.) of the finished spray volume for ground applications. For aerial applications, add 1 pint of crop oil concentrate per acre. Do not use crop oil concentrate when using Gramoxone Inteon for cotton harvest aid.

## NOZZLE SELECTION

The use of flat-fan nozzles will result in the most effective application of Gramoxone Inteon. Flood nozzles are generally not as good as flat fans since they produce large uneven droplets. The use of flood nozzles may result in reduced weed control due to inadequate coverage.

**WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE, USE ONLY FLAT FAN NOZZLES AS RECOMMENDED IN THE CHART BELOW.**

**Table 1. Recommended Nozzles, Pressures and Setup.**

	Nozzle Type	
	Flat Fan	Flood
Maximum Size	8	15
Spray Pressure (at nozzle)	30-50 psi	30-50 psi
Maximum Nozzle Spacing	30"	40"
Direction of Spray Pattern	Down	Down
Maximum Speed	10 mph	10 mph
Spray Overlap (at each edge)	30%	50%



Using nozzles, pressures, or setups different from the above chart will result in reduced control.

### SPRAY CARRIER

Always use clean water (free of mud or clay), clear liquid nitrogen, or complete clear liquid fertilizers as the carrier when spraying Gramoxone Inteon. Muddy water, or suspension-type fertilizers containing clay, can inactivate Gramoxone Inteon. Never use suspension-type fertilizers containing clay as the spray carrier. If using a complete clear liquid fertilizer containing high phosphate levels as the spray carrier, always use the higher rate of Gramoxone Inteon and surfactant.

Note: When using liquid fertilizers such as 28% N as a spray carrier, it is important that nonionic surfactant still be used with Gramoxone Inteon. Liquid fertilizer carriers cannot substitute for surfactant.

### RATES OF GRAMOXONE INTEON

Follow recommended rates listed with each use of Gramoxone Inteon. Use the higher label rates when weeds are dense or large. Also, use higher label rates for harvest aid when crop vegetation is dense. For broadcast applications of Gramoxone Inteon with backpack sprayers, the application rate should not exceed 0.50 lbs. a.i./A (one quart) in a minimum of 30 gallons of spray solution per acre.

### SPRAY VOLUME

Follow recommended minimum spray volumes listed with each use of Gramoxone Inteon. These are **minimum** volumes only, and spray volumes should be increased as necessary to obtain complete coverage of the target weed or plant without runoff from the foliage.

WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE, TARGET WEEDS SHOULD NOT EXCEED 6 INCHES IN HEIGHT.

## APPLICATION TIMING

**Gramoxone Inteon should be applied to emerged weeds when they are small. Weeds 1-6 inches in height are the easiest to control.** Larger weeds may be more difficult to control. When weeds have been grazed or mowed, thus removing much of the green foliage, allow the weeds to regrow to a height of 2-4 inches before spraying if possible. Similarly, when forage or grain crops have been harvested prior to spraying, weeds present in the field will also have been cut. To allow for adequate green foliage to remain on weeds in this situation, raise cutter bars as high as possible from the ground to cut stubble and weeds at a greater height.

## BURNDOWN OF GRASS COVER CROPS OR VOLUNTEER CEREALS

When using Gramoxone Inteon for control of grass cover crops or volunteer cereals, best results are obtained when Gramoxone Inteon is applied **prior to tillering or after boot stage**. This is especially important with a wheat cover crop or volunteer wheat. Treatments made between tillering and boot stage will generally not provide complete control. Do not expect complete control of perennial cover crops.

## ENVIRONMENTAL CONDITIONS

Gramoxone Inteon is active over a wide range of environmental conditions. Cool weather (below 55°) will slow the activity of Gramoxone Inteon, as will cloudy, overcast weather, but will not affect performance.

## SPOT SPRAYING

When only small areas are to be sprayed with labeled applications, it is advantageous to mix small quantities of Gramoxone Inteon. To aid in mixing small quantities, the following table should be consulted.

If The Broadcast Rate Per Acre for Gramoxone Inteon is:	Add The Following Amount of Gramoxone Inteon To 1 Gallon of Water
1 1/2 pts.	1/3 fl. oz.
2 pts.	3/8 fl. oz.
2 1/2 pts.	1/2 fl. oz.
3 pts.	2/3 fl. oz.

Always add 1/3-1/2 fl. oz. of a nonionic surfactant for each gallon of spray. When spot spraying in this manner, spray to thoroughly wet the foliage, but not to the point of runoff.

## **TANK MIXING FOR IMPROVED BURNDOWN OF DIFFICULT WEEDS AND RESIDUAL WEED CONTROL**

### **Photosynthetic Inhibitor Herbicides**

Difficult weeds can often be controlled by tank mixing Gramoxone Inteon with other herbicides. The addition of herbicides which are also photosynthetic inhibitors (PSI) will slow the activity of Gramoxone Inteon, allowing Gramoxone Inteon to thoroughly distribute itself within the treated leaf. The resulting level of control is usually greater than if Gramoxone Inteon was applied alone.

Gramoxone Inteon may be applied in tank mixture with the following PSI herbicides:

AAtrex® Herbicide  
Atrazine  
Bicep MAGNUM®  
Bicep II MAGNUM® Herbicide  
Bicep Lite II MAGNUM® Herbicide  
Boundary® 6.5EC Herbicide  
Canopy® Herbicide  
Caparol® 4L Herbicide  
Cotoran® Herbicide  
Lorox® Herbicides  
Lorox Plus® Herbicide  
Princep® Herbicide  
Sencor® Herbicide  
Sinbar® Herbicide  
Spike® Herbicide

Refer to respective product label(s) for rates of application, directions for use, limitations, cautions and for a list of weeds controlled.

### **Improved Weed Control With PSIs**

Control of difficult weeds listed below and annual grass control will be enhanced by the addition of a PSI herbicide. For best results a second application is needed.

Barnyardgrass	Horseweed (Marestail)
Broadleaf signalgrass	Morningglory
Cheatgrass	Pennsylvania Smartweed
Cocklebur	Perennial Weeds (suppression only)
Fall Panicum	Prickly lettuce
Giant Ragweed	Sedges
Knotweed	Tansymustard
Kochia	Velvetleaf
Lambsquarters	Volunteer wheat
Malva (Cheeseweed)	Spiderwort

## **Improved Control of Perennial and Annual Broadleaf Weeds**

When perennial broadleaf weeds such as Canada thistle, bindweed, dandelion, etc. or difficult to control annual broadleaf weeds such as giant ragweed or morningglory are present, tank mixes with 2,4-D ester (Low Volatile), 2,4-DB, Clarity®, Banvel®, or Flexstar® where labeled, will help improve control. Tank mixing the amine formulation of 2,4-D with Gramoxone Inteon may result in reduced grass control.

## **Order of Tank Mixing**

In general, Gramoxone Inteon tank mixes with other products should be mixed as follows:

1. Fill spray tank 1/2 full with clean water or other approved carriers such as clear liquid fertilizer.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add dry formulations (WP, DF, etc.) to tank.
4. Add liquid formulations (SC, EC, L, etc.) to tank.
5. Add Gramoxone Inteon to tank.
6. Add nonionic surfactant to tank.
7. Fill remainder of spray tank.

Always refer to labels of other pesticide products for mixing directions and precautions which may differ from those outlined here.

Since many of the herbicides listed on this label are available in several types of formulations, it is advisable to perform a jar test to check physical compatibility.

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## **PRECAUTIONS AND RESTRICTIONS**

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### **EQUIPMENT/CONTAINER**

Flush all spray equipment with water after use each day. Gramoxone Inteon is corrosive to aluminum. Aluminum spray equipment and aluminum aircraft structures that are exposed to spray solution or spray drift should be flushed thoroughly with water immediately after use.

In dry areas, dust stirred up by high winds or equipment tires can coat weed or plant leaves and reduce Gramoxone Inteon activity. Avoid applying Gramoxone Inteon in extremely dusty conditions.

## **LIMITATIONS AND PRECAUTIONS**

- For Cotton Harvest Aid: Do not pasture livestock in treated fields or feed treated foliage.
- **DO NOT** use around home gardens, schools, recreational parks, or playgrounds.
- In preplant and preemergence (to the crop) uses, do not apply to soils lacking clay minerals, i.e., peat, muck, pure sand, artificial planting media.
- Seedbeds and plantbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence prior to treatment.
- To reduce germination of new weeds, seeding or transplanting should be done with a minimum amount of soil disturbance.
- Gramoxone Inteon used for preplant weed control over the top of plastic mulch may damage transplants which come in contact with the plastic. Sufficient rainfall or sprinkler irrigation to cause wash-off prior to planting may be needed to prevent damage to the crop.
- Weeds and grasses emerging after application of Gramoxone Inteon will not be controlled or suppressed.
- Unless otherwise indicated, crop plants emerged at time of application may be severely injured or killed if contacted by sprays of Gramoxone Inteon.

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## **APPLICATION INSTRUCTIONS AND CROP USE DIRECTIONS**

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The following tables indicate use patterns, rates, minimum spray volumes, preharvest intervals and other precautions, restrictions and comments specific to each crop. Read and follow directions carefully.

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b>  New seedlings (California only)	1	Broadcast	1.0-2.0 pts. See Table 2.	Ground: 10 gals. Air: 5 gals.	70	<ul style="list-style-type: none"> <li>• Apply during late winter or early spring.</li> <li>• Do not cut or harvest within 70 days after application.</li> <li>• Do not apply more than once during the first growing season.</li> <li>• Caution: Seedling alfalfa stands will be reduced and replanting may be necessary.</li> <li>• Not recommended for seedling alfalfa grown for seed.</li> <li>• Alfalfa foliage present at time of application will be burned.</li> </ul>
<b>ALFALFA</b>  (No-till or conventional planting)	2	Preplant or Preemergence Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• Apply prior to emergence of the crop.</li> <li>• Crop plants emerged at time of application will be killed.</li> <li>• Seeding should be done with a minimum amount of soil disturbance.</li> </ul>
<b>ALFALFA</b>  Dormant season on established plantings Region A - See map at end of Alfalfa section.	1	Broadcast	2.0-3.0 pts.	Ground: 10 gals. Air: 5 gals.	42	<ul style="list-style-type: none"> <li>• For control of weeds, including bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dogfennel, tansymustard, london rocket, sowthistle, rescue brome, wild oats, and other winter annuals; and suppression of perennial weeds.</li> <li>• Do not apply if <b>fall regrowth</b> following last fall cutting is greater than 6", or if <b>spring regrowth</b> is more than 2".</li> <li>• Apply to well-established stands (at least 1-year old) after the crop is dormant.</li> <li>• Alfalfa foliage present at the time of application will be burned which may reduce the yield of the first cutting.</li> <li>• Do not cut or harvest within 42 days of application.</li> <li>• Do not apply more than once per season.</li> <li>• Tank mix with metribuzin (Sencor) for improved burndown of weed vegetation and residual weed control. Consult the metribuzin product label for a list of weeds controlled, rates of application, and precautions.</li> </ul>

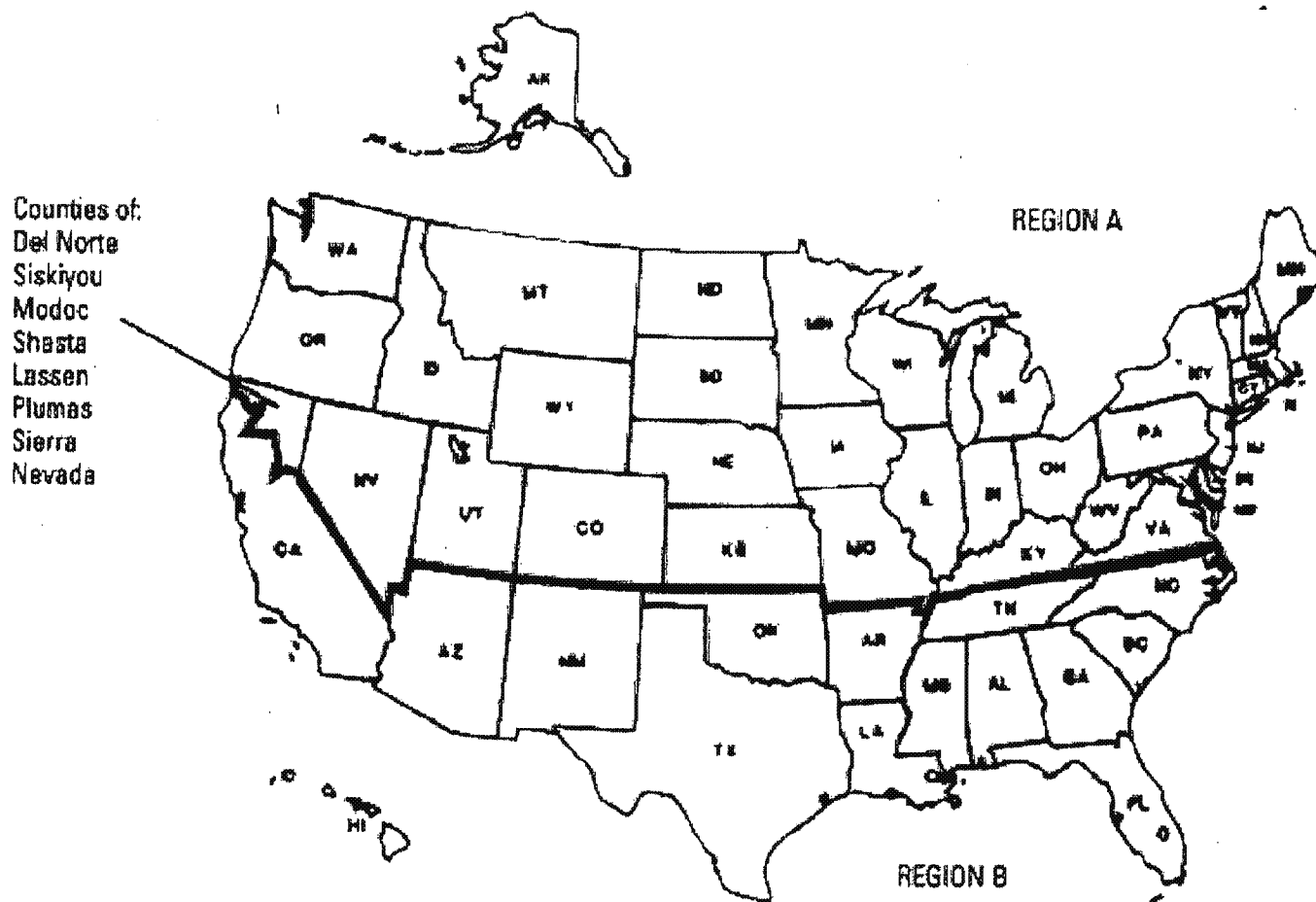


Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b>  Dormant season tank mix with Velpar® L herbicide Region A - See map at end of alfalfa section.	2	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 10 gals.	42	<ul style="list-style-type: none"> <li>For control of weeds such as chickweed, downy brome and tansymustard.</li> <li>Use the 1.0 pt. rate of Gramoxone Inteon when weeds and grasses are less than 4" tall.</li> <li>Mix with 1-2 qts. of Velpar L per acre.</li> <li>Use the lower rate of Velpar L on loamy sands or sandy loams. Refer to Velpar L label for directions, limitations, cautions and for a list of weeds controlled.</li> <li>Apply once to established alfalfa stands during the dormant season.</li> <li>Do not apply if <b>fall regrowth</b> following last fall cutting is greater than 6", or if <b>spring regrowth</b> is more than 2".</li> <li>Do not apply to alfalfa during the first season after seeding.</li> <li>Temporary chlorosis may occur on alfalfa regrowth.</li> <li>Stress which may be caused in part by low fertility, disease, insects, winterkill, over cutting, drought or frost may increase the chances of crop injury.</li> <li><b>DO NOT USE</b> on gravelly or rocky soils, exposed subsoils, hardpan, sand or poorly drained alkaline soils as crop injury, including mortality, may result.</li> <li>Do not cut or harvest within 42 days of application.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b>  Dormant Season  On established plantings: Region B-See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1-year-old: Region A- See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1- year-old: Region B- See map at end of Alfalfa section.	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals; and suppression of perennial weeds.</li> <li>Apply during late fall or winter months after the last fall cutting and before first spring cutting.</li> <li>In the California counties of Orange, Riverside and all counties north of these counties, do not apply if <b>spring regrowth</b> after grazing or cutting is more than 2". In all other areas within Region B, do not apply if <b>regrowth</b> after grazing or cutting is more than 2".</li> <li>Do not harvest within 60 days of application.</li> <li>CAUTION: Applications to alfalfa that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green alfalfa foliage present at the time of application will be burned.</li> <li>Total hay yield of first cutting may be reduced in alfalfa fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight.</li> <li>Do not apply more than once per season.</li> <li>Tank mix with metribuzin (Sencor) for improved burndown of weed vegetation and residual weed control in <b>dormant established</b> (at least 1-year old) alfalfa. Consult the metribuzin product label for a list of weeds controlled, rates of application, and precautions.</li> <li>Do not apply tank mix with metribuzin on newly established (less than 1-year old) alfalfa.</li> </ul> <b>California</b> <ul style="list-style-type: none"> <li>For desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.</li> <li>Use high rate if ryegrass, shepherdspurse, sowthistle or groundsel is present.</li> </ul>
	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	
	1	Broadcast	0.75-1.25 pts.	Ground: 10 gals. Air: 5 gals.	60	

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b>  Between-cuttings treatment in established plantings. (Includes first year alfalfa) (All states East of the Rocky Mountains)	3	Broadcast	1.0 pt.	Ground: 10 gals.	30	<ul style="list-style-type: none"> <li>• Weeds much beyond the seedling stage and the stubble of weeds cut off during harvest will be less affected by this treatment.</li> <li>• Apply immediately after alfalfa has been removed for hay or silage.</li> <li>• Do not treat more than 5 days after cutting.</li> <li>• CAUTION: First year alfalfa stands and yields may be reduced if alfalfa is allowed to regrow more than 2".</li> <li>• Alfalfa foliage present at time of application will be burned.</li> <li>• In arid areas where moisture is limited, weed control may be reduced.</li> <li>• Do not cut or harvest within 30 days of application.</li> <li>• Make 1-3 applications, as needed, during the growing season. These sprays may be applied in addition to a dormant application.</li> <li>• For first year alfalfa, do not apply more than twice during the first growing season.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b> (For use only in the following states: ID, MT, NV, OR, UT, WA, WY)  Desiccation of alfalfa to facilitate harvest of alfalfa seed  Gramoxone Inteon/Reglone® Tank Mix	2	Broadcast           Broadcast	2.5-4.0 pts.           2.0-4.0 pts. Gramoxone Inteon/ 2 pts. Reglone	Ground: 20-25 gals. Air: 5-10 gals.           Ground: 20-25 gals. Air: 5-10 gals.	See Precautions           See Precautions	<ul style="list-style-type: none"> <li>Do not harvest until at least 4 days after application.</li> <li>Do not apply when weather conditions favor drift from treated areas.</li> <li>Do not apply by ground equipment within 25 ft., or by air within 75 ft. of lakes; reservoirs; rivers; permanent streams, marshes or natural ponds; estuaries; and commercial fish farm ponds.</li> <li>For use only on fields in production of alfalfa seed. Not for use on fields producing alfalfa for livestock feed. No portion of the treated field, including seed, seed screenings, hay forage, or stubble, may be used for human or animal feed.</li> <li>Do not cut current year's treated alfalfa seed crop for hay or forage. Do not graze current year's treated alfalfa seed crops.</li> <li>Treated alfalfa seed is not to be used for sprouting. All alfalfa seed treated with Gramoxone Inteon/Reglone tank mix is to be tagged at processing plants, "NOT FOR HUMAN CONSUMPTION". It shall be the grower's responsibility to notify the processing plants of any seed crop treated with Gramoxone Inteon/Reglone tank mix.</li> <li>Screenings from alfalfa seed processing are prohibited from feed channels. All Gramoxone Inteon/Reglone treated alfalfa seed screenings must be removed from the feed market.</li> </ul>



Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
ALMONDS	5	Directed Spray	1.25-4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems (except suckers) or foliage.</li> <li>Use a shield or wrap plant when spraying around young trees or vines.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>Do not apply when nuts to be harvested are on the ground.</li> <li>For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatments may be necessary.</li> </ul>
ARTICHOKE (Globe)	3	Directed Spray	2.5-4.0 pts.	Ground: 20-100 gals.	1	<ul style="list-style-type: none"> <li>Up to 3 applications per season, do not exceed 8 pts. per season.</li> <li>Applications at least 7 days apart.</li> <li>Do not harvest within 24 hours of last application.</li> </ul>
ASPARAGUS	3	Preplant or Preemergence Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Apply prior to emergence of the crop.</li> <li>Crop plants emerged at time of application will be killed.</li> </ul>
ASPARAGUS Preemergence to established plantings at least 2 years old	3	Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals.	6	<ul style="list-style-type: none"> <li>Apply prior to emergence of crop or after last harvest.</li> <li>Crop plants emerged at time of planting will be killed.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>BEANS, DRY</b>  Sweet lupin White sweet lupin White lupin Grain lupin  Adzuki beans Asparagus beans Black beans Broad beans Field beans Garbanzo beans Kidney beans Lablab beans Lima beans Moth beans Mung beans Navy beans Pinto beans Rice beans Snap beans Tepary beans Urd beans Wax beans  Blackeyed peas Chickpeas Cowpeas Crowder peas Southern peas  Catjang Guar  <b>PEAS, DRY</b>	2	Harvest-Aid	1.2-2.0 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>• Add spreader (nonionic) at 1 qt./100 gals. of spray mix.</li> <li>• For vining type beans or bush type with lush growth, use a single application of the higher rate.</li> <li>• May also be applied as a split application. <b>DO NOT</b> make more than 2 applications or exceed a total of 2.0 pts./A. The split application may improve vine coverage.</li> <li>• Apply when the crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 40% (bush type peas or beans) or 30% (vine type peas or beans) of the leaves still green in color.</li> <li>• <b>DO NOT</b> apply when weather conditions favor spray drift. A drift control agent may be included to reduce spray drift.</li> <li>• <b>NOT REGISTERED FOR USE ON DRY BEANS OR DRY PEAS IN CALIFORNIA.</b></li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>BERRIES</b> Blackberries Blueberries Boysenberries Currant Elderberry Gooseberry Huckleberry Loganberry Raspberries	5	Postemergence Directed Spray	2.0-4.0 pts.	Ground: 50 gals.	-	<ul style="list-style-type: none"> <li>Apply before emergence of new canes or shoots as injury to those canes or shoots can occur.</li> <li>Apply as a coarse spray to avoid crop injury from fine spray mist.</li> </ul>
<b>CACAO</b>	5	Directed Spray	2.0-4.0 pts.	Ground: 50-200 gals.	1	<ul style="list-style-type: none"> <li>Apply when weeds are succulent and growth is from 1-6".</li> <li>For mature woody weeds, late-germinating weeds and grasses and for perennials; retreatment or spot treatment may be necessary.</li> <li>Do not allow spray to contact cacao plants as injury may result. Use a shield for young trees.</li> <li>Do not spray under windy conditions.</li> <li>Do not graze treated areas or feed treated cover crops to livestock.</li> </ul>
<b>CASSAVAS, TANIERS &amp; YAMS</b> (Puerto Rico only)	3 2	Shielded Post Directed Spray	2.0 pts.	Ground: 50 gals.	90	<ul style="list-style-type: none"> <li>Apply when weeds are succulent and growth is 1-6".</li> <li>On cassavas and taniers, do not make more than 3 applications per crop season.</li> <li>On yams do not make more than 2 applications per crop season.</li> <li>Do not allow spray to contact cassavas, tanier or yam plants as injury may result.</li> <li>Do not spray under windy conditions.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> </ul>



Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CHEMICAL FALLOW</b> General Information				Ground: 5 gals. Air: 5 gals.  See Precautions, Restrictions and Comments		<ul style="list-style-type: none"> <li>• Use higher spray volumes for better coverage as density of stubble, crop residue or weeds increase.</li> <li>• To control volunteer wheat or downy brome, fall-applied treatments generally work best with Gramoxone Inteon. If possible, tank mix with Atrazine for maximum burndown and residual control.</li> <li>• Apply from immediately after harvest up to emergence of the newly seeded crop as a broadcast or band treatment.</li> <li>• Cut wheat as high as possible to avoid cutting weeds too short, and allow the weeds to grow at least 2-3" after harvest before applying Gramoxone Inteon.</li> <li>• The addition of dicamba, (Banvel) or 2,4-D ester (Low Volatile) may aid in the suppression of emerged perennial broadleaf weeds and large annual broadleaf weeds.</li> <li>• Refer to 2,4-D ester (Low Volatile), Banvel or residual herbicide label(s) for directions, limitations, cautions and for a listing of weeds controlled.</li> <li>• For extended weed control during the fallow period, tank mixes with registered residual herbicide combinations other than those listed on this label are permissible.</li> <li>• Weeds taller than 6" may not be controlled.</li> <li>• Weeds and grasses emerging after application will not be controlled.</li> <li>• Crop plants emerged at the time of application will be killed.</li> <li>• By ground application, apply 5-60 gallons of spray mix per acre. If applying at &lt;10 GPA by ground, utilize the following additional precautions: <ul style="list-style-type: none"> <li>• Do not apply with floaters or exceed a speed of 10 mph.</li> <li>• Apply with flat fan nozzles only at 30-40 PSI.</li> <li>• Apply only in a tank mix with atrazine at a minimum of 0.5 lb. a.i./A.</li> <li>• By air, apply in 5-10 gals. of spray mix per acre.</li> </ul> </li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CHEMICAL FALLOW</b>  Continuous Wheat 2-3 Month Recropping Interval	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3-4.0 pts.	Ground: 5 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• Make application at least 45 days prior to seeding.</li> <li>• Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see <b>Photosynthetic Inhibitor Herbicides</b> section) for volunteer wheat or downy brome control in the spring.</li> <li>• Refer to the Chemical Fallow General Information section.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Fallow-Wheat Rotations (Fall applied after harvest; seeded 12-14 months later)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3-4.0 pts.	Ground: 5 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• Spray before weeds produce seed.</li> <li>• Volunteer wheat and downy brome control are better with late August or early September applications.</li> <li>• Tank mix with Atrazine Marksman® Herbicide, or Command® Herbicide for enhanced burndown and residual weed control.</li> <li>• Tank mix with metribuzin, (Sencor 75DF) for burndown and residual control of grass and broadleaf weeds.</li> <li>• Refer to the product labels for specific use rates for your soil type, use directions, cautions and a list of weeds controlled.</li> <li>• Refer to the Chemical Fallow General Information section.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CHEMICAL FALLOW</b>  Wheat-Fallow-Wheat Rotations (Spring applied; seeded 3-5 months later)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>• Application should be made March 1 to April 15, prior to spring rains to conserve moisture.</li> <li>• Volunteer wheat is easier to control after the boot stage, but soil moisture loss will be greater.</li> <li>• Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see <b>Photosynthetic Inhibitor Herbicides</b> section) for volunteer wheat or downy brome control in the spring.</li> <li>• Refer to the Chemical Fallow General Information section.</li> <li>• Tank mix with metribuzin, (Sencor ) for burndown and residual control of grass and broadleaf weeds.</li> <li>• Refer to the metribuzin, (Sencor ) label for use rates for your soil type, use directions, cautions, and weeds controlled.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Annual Crop <sup>1</sup> -Wheat Rotations (Fall applied in wheat stubble)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• Tank mix with AAtrex/Atrazine or Marksman for enhanced burndown and residual weed control. Refer to the labels for specific use rates for your soil type, use directions, cautions, and a list of weeds controlled.</li> <li>• Spray after wheat harvest and before weeds produce seed. If grasses such as foxtails or barnyardgrass recover, respray before they develop seed.</li> <li>• Volunteer wheat and downy brome are easier to control with late August to November applications. Refer to the Chemical Fallow General Information section.</li> </ul>

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<b>CHEMICAL FALLOW</b>  Wheat-Annual Crop- Wheat Rotations (Spring applied prior to planting an annual crop <sup>1</sup> )  <sup>1</sup> Approved Annual Crops are grain sorghum, corn, wheat, or proso millet.	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>• Tank mix with AAtrex/Atrazine for enhanced burndown and residual weed control. Refer to the labels for specific use rates for your soil type, use directions, cautions, and a list of weeds controlled.</li> <li>• Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see <b>Photosynthetic Inhibitor Herbicides</b> section) for volunteer wheat or downy brome control in the spring.</li> <li>• Follow the AAtrex/Atrazine recommendations pertaining to soil pH and recropping intervals.</li> <li>• Refer to the Chemical Fallow General Information section.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CLOVER AND OTHER LEGUMES<sup>1</sup></b> Dormant Season  On established plantings: Region A- See map at end of Alfalfa section.  On established plantings: Region B- See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1- year-old: Region A- See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1-year-old: Region B- See map at end of Alfalfa section.	1	Broadcast	2.0-3.1 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals, and suppression of perennial weeds.</li> <li>Apply during late fall or winter months after the last fall cutting and before first spring cutting.</li> <li>Do not apply if <b>regrowth</b> after grazing or cutting is more than 2".</li> <li>Do not harvest within 60 days of application.</li> <li><b>CAUTION:</b> Applications to clover or other legumes that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green clover or other legumes foliage present at the time of application will be burned.</li> <li>Clover or other legumes foliage present at the time of application will be discolored and temporarily stunted.</li> <li>Total hay yield of first cutting may be reduced in clover or other legumes fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight.</li> <li>Do not apply more than once per season.</li> </ul> <b>California</b> <ul style="list-style-type: none"> <li>For desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.</li> <li>Use high rate if ryegrass, shepherdspurse, sowthistle or groundsel is present.</li> </ul> <p><sup>1</sup>Other legumes include velvetbean, lespedeza, lupine, sainfoin, trefoil, vetch, crown vetch, and milk vetch.</p>
	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	
	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	
	1	Broadcast	0.75-1.2 pts.	Ground: 10 gals. Air: 5 gals.	60	

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CORN</b> <b>FIELD CORN</b> <b>POPCORN</b> <b>SWEET CORN</b> <b>SEED CORN</b> (Used alone)	3	Preplant or Preemergence (Broadcast or Banded Over Row)	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>Includes field, fresh, sweet, forage, fodder and popcorn.</li> <li>Seedbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.</li> </ul>
<b>CORN</b>  Tank Mixes for No-till/Reduced Till	3	Preplant or Preemergence (Broadcast or Banded Over Row)	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.*	-	<ul style="list-style-type: none"> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: 2,4-D Ester (Low Volatile), 2,4-D Amine, AAtrex/Atrazine, Balance®, Banvel, Bicep MAGNUM, Bicep II Magnum, Bicep Lite II MAGNUM, Callisto®, Clarity, Degree™, Degree Xtra™, Distinct®, Dual MAGNUM, Fulltime™, Frontier®, Guardsman®, Harmony® Extra Herbicide (Preplant Only), Harness®, Harness® Xtra, Lorox, Lumax®, Lexar™, Princep, Prowl®.</li> <li>Gramoxone Inteon may also be tank mixed with Warrior®, Karate®, Ambush® Insecticide.</li> <li>Refer to respective product label(s) for rates of application, directions for use, limitations, cautions, and for a list of weeds or insects controlled.</li> </ul> <p>*Refer to respective product labels to determine if these products can be applied by air.</p>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
FIELD CORN POPCORN SWEET CORN SEED CORN	3	Postemergence Directed Spray (Including Hooded or Shielded)	1.0-2.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• Use higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray contacts corn plants.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height.</li> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply when corn is at least 10" tall with nozzles arranged to spray no higher than the lower 3" of corn stalks.</li> <li>• Corn plants shorter than 10" may be injured and not recover (corn height measured from soil surface to top of whorl).</li> <li>• For corn greater than 20" tall, arrange the nozzles to spray no higher than the lower 1/3 of the corn stalks.</li> <li>• Corn foliage sprayed will be injured, but the crop will recover and develop normally.</li> </ul>

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<b>FIELD CORN</b> Popcorn Seed Corn	1	Harvest Aid Broadcast	1.2-2.0 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Make ONE (1) application at least 7 days prior to harvest.</li> <li>Apply after the corn is mature after the black layer has formed at the base of the kernels (this indicates maturity). Consult your local agricultural authority for help in identifying the black layer.</li> <li>Add nonionic surfactant containing at least 75% surface active ingredient at 0.25% v/v.</li> <li>Use 2.0 pts. to desiccate mature broadleaf weeds and grasses or broadleaf weeds and grasses that are taller than 18".</li> <li>Drought stressed plants, especially broadleaf weeds can be difficult to kill and desiccation may not be complete.</li> </ul>
<b>FIELD CORN ONLY</b> (grain, fodder, forage)	3	Postemergence directed spray USDA Witchweed Eradication Program	2.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Initiate sprays in late June to early July and repeat in early August if regrowth occurs.</li> <li>Follow application instructions in postemergence directed spray section above.</li> </ul>
<b>FIELD CORN ONLY</b> (grain, fodder, forage)  2,4-D Amine Tank Mix	3	Postemergence directed spray USDA Witchweed Eradication Program	8.0 fl. oz. + 0.5 lbs. 2,4-D Amine AE	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Apply as a directed spray onto grassy weeds and witchweed before witchweed blooms. Reapply if regrowth occurs.</li> <li>Follow application instructions in postemergence directed spray section above.</li> </ul>
<b>COTTON</b> (Used alone)	3	Preplant or Preemergence	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Apply prior to, during or after planting, but before crop emergence.</li> <li>For fallow bed treatment, beds should be preformed to permit maximum weed and grass emergence prior to treatment.</li> <li>Seeding should be done with a minimum of soil disturbance.</li> </ul>



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<b>COTTON</b> (California only; Used alone)	3	Preplant	8.0-16 fl. oz.	Ground: 10 gal Air: 5 gal.	-	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>
<b>COTTON</b>  Goal™ Herbicide Tank Mix	3	Preplant or Fallow Bed Broadcast	2.5-4.0 pts.	Ground or Air: 10 gals.	-	<ul style="list-style-type: none"> <li>Refer to Goal label for specific use directions and restrictions, and weeds controlled.</li> </ul>
<b>COTTON</b>  Other Tank Mixes	3	Preplant or Preemergence	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: Cotoran, Dual MAGNUM®, Meturon®, Cotton-Pro®, Caparol, Diuron, Harmony® Extra (Preplant Only), MSMA, Prowl, Zorial®</li> <li>When tank mixing with Cotoran DF or Meturon DF, follow mixing instructions in the <b>Order of Tank Mixing</b> section carefully and maintain constant agitation.</li> <li>When tank mixing with any of the herbicides listed above, refer to that product's label for specific directions and restrictions and for a list of weeds controlled.</li> </ul>

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<b>COTTON</b>  General directions for all cotton harvest aid uses		Harvest Aid				<b>Harvest Aid Use Precautions (Applies to all sections)</b> <ul style="list-style-type: none"> <li>Do not pasture livestock in treated fields or feed treated foliage.</li> <li>Do not apply to cotton within 3 days before harvest.</li> <li>Repeat application if necessary. Do not exceed a total of 2.0 pts./A as a harvest aid.</li> <li>May be tank mixed with other cotton harvest aid materials known to be effective by the local expert. Unless otherwise instructed in this label, refer to tank mix product label for rates, directions, limitations and cautions.</li> <li>Gramoxone Inteon can be applied in a tank mix with methyl parathion and/or Karate insecticide.</li> <li>Nodes above cracked bolls (NACB) timing is for guidance and is not intended to restrict the local expert in their use of the product.</li> </ul>
<b>SOUTHERN COTTON</b>  Harvest aid for boll opening and defoliation (tank mix with phosphate and chlorate defoliants)	4	Broadcast	8.0 fl. oz. + 1 pt. phosphate or 1 gal. chlorate	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Development of immature bolls will be inhibited.</li> <li>Apply when 80% or more of the bolls are open and the remaining bolls to be harvested are mature.</li> </ul>

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<b>SOUTHERN COTTON</b>  Additional tank mixes for boll opening and defoliation	4	Broadcast	3.1-5.0 fl. oz.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>To aid in defoliation and opening of mature bolls, Gramoxone Inteon may be tank mixed with the following products: Accelerate® Defoliant, DEF® Defoliant, Dropp® Defoliant, Ethephon® Plant Growth Regulator, Folex® Defoliant, Harvade® Harvest Growth Regulator, Prep™ PGR</li> <li>Apply when 60% or more of the bolls are open and the remaining bolls to be harvested are mature.</li> <li>Development of immature bolls will be inhibited.</li> <li>Refer to tank mix product label for rate, directions, limitations and cautions.</li> </ul>
<b>SOUTHERN COTTON</b>  Post Defoliation-To aid in opening of mature bolls and to desiccate green weeds	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>Use higher rate if weed infestation is heavy or dense.</li> <li>Apply when 75% or more of the bolls are open and remaining bolls to be harvested are mature.</li> <li>Development of immature bolls will be inhibited.</li> <li>After a defoliation or conditioning application has been made, delay desiccation application of Gramoxone Inteon approximately 3-7 days to minimize leaf sticking.</li> </ul>
<b>WESTERN COTTON</b>  Harvest aid for boll opening and early defoliation	4	Broadcast	5.5-8.0 fl. oz. + phosphate or sodium chlorate; and/or other compatible harvest aid products.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Use higher rate of Gramoxone Inteon on rank cotton.</li> <li>Do not use more than 8.0 fl oz of Gramoxone Inteon for early defoliation as excessive desiccation may occur.</li> <li>Early defoliation timing is when 60% or more of the bolls are open and the remaining bolls to be harvested are mature (approximately 4 NACB).</li> <li>Development of immature bolls will be inhibited.</li> <li>Do not use more than 4.0 lbs. of actual sodium chlorate defoliant per acre at this early defoliation timing.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>WESTERN COTTON</b>  Harvest aid for boll opening and mid-to-late defoliation	4	Broadcast	8.0-16.0 fl. oz. alone or tank mix with sodium chlorate or phosphate defoliant and/or other compatible harvest aid products.		3 (Alone)	<ul style="list-style-type: none"> <li>In desert cotton areas or on rank vigorous cotton, use the 16fl. oz. rate of Gramoxone Inteon.</li> <li>Mid-to-late defoliation timing is when 75% or more of the bolls are open and remaining bolls to be harvested are mature (approximately 3 or fewer NACB).</li> <li>Development of immature bolls will be inhibited.</li> </ul>
<b>COTTON Stripper or Spindle Harvested</b>  Harvest aid for defoliation and boll opening	4	Broadcast	3.0-11.25 fl. oz.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>IT IS ADVISABLE, BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, TO APPLY THE RANGE OF RATES ON A SMALL BLOCK OF COTTON TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS.</li> <li>Apply when 75% of the bolls are open and the remaining bolls to be harvested are mature.</li> <li>DEVELOPMENT OF IMMATURE BOLLS WILL BE INHIBITED. SLICE BOLLS AND INSPECT THE SEED FOR MATURITY.</li> </ul> <p>Gramoxone Inteon may be applied alone or tank mixed with the following cotton harvest aids: Accelerate Defoliant, DEF<sup>®</sup> Defoliant, Ethephon<sup>®</sup> Plant Growth Regulant, Folex<sup>®</sup> Defoliant, Harvade<sup>®</sup> Harvest Growth Regulant, Prep PGR</p> <ul style="list-style-type: none"> <li>May be applied as a split application. Do not exceed a total of 2.0 pts/A per year.</li> <li>To avoid leaf sticking, apply Gramoxone Inteon as a desiccant approximately 3-7 days after defoliation or a conditioning application and 7-14 days before harvest.</li> <li>Cooler temperatures may cause a longer waiting period between application of Gramoxone Inteon as a desiccant and defoliation/condition.</li> <li>Lower rates in the range may be necessary south of I-10 in Texas where temperatures are typically higher during defoliation.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>COTTON</b>  Late season desiccation	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>• IT IS ADVISABLE, BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, TO APPLY THE RANGE OF RATES ON A SMALL BLOCK TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS.</li> <li>• May be applied as a split application. Do not exceed a total of 2.0 pts./A per year.</li> <li>• Apply when 85% of the bolls are open and the remaining bolls to be harvested are mature (approximately 0 NACB).</li> <li>• Development of immature bolls will be inhibited. Slice bolls and inspect the seed for maturity.</li> <li>• Lower rates in the range may be necessary south of I-10 in Texas where temperatures are typically higher during defoliation.</li> <li>• If a defoliation or conditioning application has been made, delay desiccation application of Gramoxone Inteon approximately 3-7 days to minimize leaf sticking.</li> <li>• May be tank mixed with other harvest aid materials known to the local expert to be effective.</li> </ul>
<b>COTTON</b>  Desiccation of Regrowth	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>• Use to desiccate regrowth occurring after defoliation or desiccation.</li> <li>• Regrowth is difficult to control, therefore, thorough coverage with the full recommended rate is necessary.</li> <li>• Control is dependent on growing conditions and desiccation of small new regrowth may not always be complete.</li> <li>• Use higher rate if regrowth is excessive.</li> </ul>

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<b>EASTER LILIES</b> (Field grown)	2	Preemergence	2.5-4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Do not apply more than twice per season.</li> </ul>
<b>FALLOW LAND</b>  Prior to planting of any crops.	2	Preplant Broadcast to Fallow Land	1.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Fallow land may be between operations such as disking, ripping, plowing, leveling, irrigating or listing for ground preparation purposes.</li> <li>Use for the control of weeds such as bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dog fennel, tansy mustard, London rocket, sowthistle, rescue brome, wild oats, volunteer cereals and other winter annuals and for suppression of perennial weeds or sedges.</li> <li>Use the higher rate for weeds approaching the maximum size of 6".</li> <li>Do not make more than 2 applications during the fallow period.</li> <li>Allow maximum weed emergence prior to application to maximize the benefit of this use.</li> <li>Adhere to the preharvest intervals and other crop specific restrictions for planted crops elsewhere on this label.</li> </ul>
<b>GRASSES (For Seed)</b> (For Use in Seedbed Preparation)	3	Preplant, At Planting, or Preemergence	2.0-4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Prepare the seedbeds and allow weeds to germinate.</li> <li>Apply Gramoxone Inteon when weeds are at the 3-5 leaf stage.</li> <li>Repeat applications as necessary prior to grass emergence.</li> <li>Do not graze treated areas or use the seed or straw from treated areas for animal feed or bedding.</li> </ul>

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<b>GUAR</b> (Preharvest desiccation)	3	Preharvest	2.0 pts.	Ground: 10 gals.	4	<ul style="list-style-type: none"> <li>• Apply after the pods are fully mature.</li> <li>• Do not graze treated areas or use the treated forage for animal feed.</li> </ul>
<b>GUAVA</b>	4	Directed Spray	3.75 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>• Do not allow spray to contact green stems, fruit or foliage.</li> <li>• Do not graze treated areas.</li> <li>• Do not feed cover crops grown in treated areas to livestock.</li> <li>• For mature woody weeds, late-germinating weeds and grasses, and perennials, retreatment or spot spraying may be necessary.</li> </ul>
<b>HOPS</b> (ID, OR, & WA only)	3	Directed Spray and/or Suckering and Stripping	2.0 pts.	Ground: 10 gals.	14	<ul style="list-style-type: none"> <li>• Retreatment or spot treatment may be necessary.</li> <li>• Do not apply more than 3 times per season.</li> <li>• Do not allow spray to contact green stems, foliage, flowers, or cones as injury may result.</li> <li>• Do not allow animals to graze in treated hopyards.</li> <li>• Hop vine refuse and silage may be fed to livestock.</li> <li>• For suckering and stripping, spray only the basal 2 ft. of the vines.</li> <li>• Experience with varieties other than Cascade, Yakima Cluster, and Bullion is limited. If using Gramoxone Inteon on other varieties than these, test the use pattern on a small number of vines of each variety to determine sensitivity to injury. Do not use on unlisted varieties if unacceptable crop injury occurs.</li> <li>• Chemical Pruning: To burn back existing vines and obtain even emergence of subsequent vines, spray when vines are less than 3 ft. tall.</li> <li>• APPLICATION TO HOP VINES LESS THAN 6 FT. TALL MAY CAUSE UNACCEPTABLE INJURY.</li> </ul>

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LENTILS	2	Harvest Aid	1.2-2.0 pts.	Ground: 20 gals. Air: 7 gals.	7	<ul style="list-style-type: none"> <li>Add nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume.</li> <li>May also be applied as a split application. <b>DO NOT</b> make more than 1 application or exceed a total of 1.0 pt./A.</li> <li>Apply when crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 30% of the leaves still green in color.</li> <li><b>DO NOT</b> apply when weather conditions favor spray drift. A drift control agent may be included to reduce spray drift.</li> <li><b>NOT REGISTERED FOR USE ON LENTILS IN CALIFORNIA.</b></li> </ul>
MINT (Peppermint, Spearmint)	2	Dormant Season	2.0-3.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>For suppression of weeds such as Italian ryegrass, prickly lettuce, groundsel, chickweed, downy brome and bluegrass.</li> <li>Apply when crop is dormant before spring growth begins and when weeds are less than 6" tall.</li> <li>Do not apply more than 3.0 pts./A per dormant season.</li> <li>May be tank mixed with Sinbar Herbicide (terbacil) weed killer for improved contact activity and residual control of Italian ryegrass, prickly lettuce and groundsel. Apply this tank mixture no more than once per season. Refer to the Sinbar label for rates, directions, and cautions and for a list of weeds controlled.</li> </ul>



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ONIONS (seeded) AND GARLIC	1	Preplant/ Preemergence	2.5-4.0 pts.	Ground: 10 gals.	60 200 (CA only)	<ul style="list-style-type: none"> <li>Use the higher rate for heavy weed infestations or wild oat control. Apply only one application per season at the 4.0 pts./A dosage.</li> <li>Allow maximum weed and grass emergence prior to treatment but apply prior to crop emergence.</li> <li>Apply a maximum of 4.0 pts./A per season.</li> </ul>
PASSION FRUIT	5	Directed Spray	3.75 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Use a shield or wrap vine if bark is still green at application time.</li> <li>If application is to be made during harvest season, pick all fruit off the ground prior to application.</li> <li>Do not allow animals to graze on treated areas.</li> <li>Retreatment or spot treatment may be necessary.</li> </ul>
PEANUTS	2	Broadcast At Ground Crack Postemergence	8.0-16.0 fl. oz.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>To control or suppress small (1-6") emerged annual grass and broadleaf weeds in peanuts at ground crack. A second application may be made up to 28 days after ground crack.</li> <li>For at ground crack use, Gramoxone Inteon can be tank mixed with Pursuit® herbicide or Dual MAGNUM for residual weed control. Consult the Pursuit or Dual MAGNUM label for a list of weeds controlled, rates of application, and precautions.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per acre per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Do not apply by air.</li> </ul>

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<b>PEANUTS</b>  Basagran® Herbicide Tank Mix	2	Broadcast At Ground Crack Postemergence	8.0-16.0 fl. oz.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>For improved control of weeds such as cocklebur, bristly starbur, smartweed and prickly sida, tank mix Gramoxone Inteon with Basagran at 1 pt./A.</li> <li>This tank mix can be applied at the ground crack stage of peanuts. A second application may be made up to 28 days after ground crack.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per acre per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Refer to the Basagran label for specific use directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not apply this tank mix if peanuts show injury (leaf phytotoxicity and/or plant stunting) produced by any other herbicide treatment as injury may be enhanced and/or prolonged.</li> <li>Do not apply this tank mix during prolonged periods of drought or unseasonably cold weather as unsatisfactory weed control may result.</li> <li>Do not apply by air.</li> </ul>

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<b>PEANUTS</b>  Butyrac® Herbicide or Butoxone® Herbicide 200 Tank Mix	2	Broadcast Postemergence	8.0-16.0 fl. oz.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>For improved control of weeds such as cocklebur, sicklepod and morningglory tank mix Gramoxone Inteon with 8-16 oz. (0.125-0.25 lbs.) per acre of Butyrac or Butoxone 200.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Refer to the complete Butyrac or Butoxone 200 label for specific use directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not apply by air.</li> </ul>
<b>PERSIMMON</b>	5	Directed Spray	3.75 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems, fruit, or foliage.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>For mature woody weeds, late-germinating weeds and grasses, and perennials, retreatment or spot spraying may be necessary.</li> </ul>
<b>PIGEON PEAS</b> (Puerto Rico only)	1	Directed Spray	2.0 pts.	Ground: 10 gals.	60	<ul style="list-style-type: none"> <li>Avoid contact with pigeon pea foliage.</li> <li>Do not make more than 1 application per season.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> <li>Cannery waste can be fed to livestock.</li> </ul>
<b>PINEAPPLE</b>	3	Directed Spray	2.0-4.0 pts.	Ground: 10 gals.	20	<ul style="list-style-type: none"> <li>Retreatment may be necessary on more mature weeds.</li> <li>Do not exceed 3 applications per season.</li> </ul>
<b>POTATO</b>	3	Preplant or Preemergence Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Apply up to ground cracking, before potatoes have emerged.</li> </ul>
<b>POTATO</b>  (California, Washington, Oregon, Idaho only; Used alone)	3	Preplant Broadcast	8.0-16.0 fl. oz.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>

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RICE	3	Preplant or Preemergence Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>• Apply as a broadcast spray before, during or after planting, but before crop emergence. Use higher rates and spray volumes when vegetation is dense.</li> <li>• Seeding should be done with a minimum amount of soil disturbance.</li> <li>• Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.</li> <li>• For improved or extended weed control, Gramoxone Inteon may be tank mixed with other herbicides registered for this use. Refer to tank mix herbicide labels for specific directions, limitations, cautions and for a list of weeds controlled.</li> <li>• Do not flood/flush within 48 hours of application in order to ensure complete kill of vegetation. If cool, cloudy and/or wet weather delays speed of kill, do not flood/flush until complete kill is evident.</li> </ul>
SAFFLOWER	3	Preplant or Preemergence Broadcast or Banded Over Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• Apply before, during, or after planting but before crop emergence.</li> </ul>
SAFFLOWER (California only)	3	Preplant Broadcast	1.0 pt.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• For control of volunteer barley in preformed seedbeds.</li> </ul>
SMALL GRAINS (Barley, wheat)	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>•</li> </ul>
SMALL GRAINS (Wheat Only) Hoelon® 3EC Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• A tank mix with Hoelon 3EC will improve grass control.</li> <li>• Apply when weeds are actively growing and 1-6" in height. Weeds 6" or taller may not be controlled.</li> <li>• Do not apply this tank mix to Barley as crop injury may result.</li> </ul>

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<b>SORGHUM</b> (Grain)	3	Preplant/ Preemergence Broadcast or Band	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Seedbeds should be formed as far ahead of planting as possible to allow maximum weed and grass emergence.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> </ul>
<b>SORGHUM</b> (Grain)  Atrazine & 2,4-D ester [Low Volatile] Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.		48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with Atrazine for improved preemergence or residual weed control. The addition of 2,4-D ester (Low Volatile) may aid in the suppression of perennial and annual broadleaf weeds emerged at the time of application. Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and a list of weeds controlled.</li> </ul>
<b>SORGHUM</b> (Grain)  Harmony® Extra Herbicide Tank Mix	3	Preplant	2.0-3.75 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with Harmony Extra for improved weed control.</li> <li>Refer to the Harmony Extra label for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> </ul>

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<b>SORGHUM</b> (Grain)	2	Postemergence Directed (Including Hooded or Shielded)	1.0-2.0 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• Use higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray contacts sorghum plants.</li> <li>• Do not exceed 2 postemergence-directed applications or exceed a total of 4.0 pts. Gramoxone Inteon per season.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height.</li> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply when sorghum is at least 12" tall when naturally standing.</li> <li>• Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Use precision directed-spray application equipment adjusted so that no more than the lower 3" of the sorghum stalk is contacted by the application spray.</li> <li>• Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>

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SOYBEANS	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Do not exceed a total of 6.0 pts. of Gramoxone Inteon per season.</li> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: 2,4-DB, 2,4-D, Authority®, Canopy, Canopy XL, Command, Dual MAGNUM, Dual II Magnum, Goal, Harmony® Extra (Preplant Only), Lorox, Lorox Plus, Flexstar, Firstrate™, Frontier, Gemini®, Warrior, Karate, Prowl, Pursuit, Scepter®, Sencor, Surflan®, Turbo®</li> <li>The rate of Gramoxone Inteon to be used in these tank mixtures is dependent on weed height and growing conditions. Use the highest recommended rate of Gramoxone Inteon under dry conditions or where the weed canopy is dense. Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> <li>The lower rate may be used when weeds are less than 4" tall and a selective postemergence spray or cultivation will be made within 3 weeks after planting.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Do not graze or harvest for forage or hay before the R3 stage of soybean development (early pod).</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>SOYBEANS</b>  2,4-D ester (Low Volatile) tank mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>• Apply 2,4-D ester (Low Volatile) at 0.35-0.475 lbs. a.i./A at least 7 days prior to planting.</li> <li>• Apply 2,4-D ester (Low Volatile) at 0.475-0.95 lbs. a.i./A at least 30 days prior to planting.</li> <li>• Do not apply 2,4-D ester (Low Volatile) prior to planting soybeans if you are not prepared to accept the results of soybean injury including possible loss of stand and yield.</li> <li>• Do not use the amine formulation as Gramoxone Inteon activity may be reduced.</li> <li>• May be tank mixed with residual herbicides listed above.</li> <li>• Refer to the 2,4-D ester (Low Volatile) label for a list of rates, directions, limitations and cautions and for a list of weeds controlled.</li> </ul>



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SOYBEANS	3	Postemergence Directed Spray (Includes Hooded or Shielded)	4.5-8.0 fl. oz.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• For control of seedling johnsongrass, crabgrass, goosegrass, <i>Brachiaria</i>, Texas millet and pigweed less than 2" tall, use the lower rate of Gramoxone Inteon.</li> <li>• For control of 2-4 " red rice, <i>Brachiaria</i>, barnyard grass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, and fall panicum, use 8.0 fl. oz. of Gramoxone Inteon.</li> <li>• For control of 2-3" sicklepod, purslane, pigweed, cutleaf ground cherry, and common ragweed, use 8.0 fl. oz. of Gramoxone Inteon.</li> <li>• For control of 2-4" grasses in mixture with common cocklebur, morningglory, and red rice, apply Gramoxone Inteon at 8.0 fl. oz./A plus 0.2 lb. active ingredient per acre of a 2,4-DB formulation.</li> <li>• Refer to the 2,4-DB label for directions, limitations, and cautions.</li> <li>• Do not graze or harvest for forage or hay.</li> <li>• If needed make a second and final application 7-14 days later.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> <li>• Use higher rate on larger (&gt; 6" ) or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray intentionally or accidentally (including drift of fine droplets) contacts the plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Do not treat if soybeans are less than 8" tall.</li> <li>• Use precision directed spray application equipment adjusted so that no more than the lower 3" of the soybean plant is contacted by the application spray.</li> <li>• Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
SOYBEANS	3	Harvest Aid	8.0-16.0 fl. oz.	Ground: 20 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Indeterminant varieties: Apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less.</li> <li>Determinant varieties: Apply when plants are mature, i.e, beans are fully developed, 1/2 of leaves have dropped, and remaining leaves are yellowing.</li> <li>Immature soybeans will be injured.</li> <li>Mature cocklebur, especially drought-stressed plants, are tolerant to Gramoxone Inteon and desiccation will not be complete. Always use the higher rate for cocklebur.</li> <li>Do not apply within 15 days of harvest.</li> <li>Do not graze or harvest for forage or hay.</li> </ul>
STRAWBERRIES	3	Postemergence Directed Spray	2.0 pts.	Ground: 20 gals.	21	<ul style="list-style-type: none"> <li>Apply by directing spray between the rows and using shields to prevent spray contact with crop plants.</li> <li>Do not allow spray to contact strawberry plants as injury or excessive residues may result.</li> <li>Do not apply more than 3 times per season.</li> <li>Do not graze livestock in treated areas.</li> </ul>
SUGAR BEETS	3	Preplant or Preemergence	2.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>Use the higher rate for heavier weed infestations.</li> <li>Seeding or transplanting should be done with a minimum amount of soil disturbance.</li> <li>Crop plants emerged at time of application will be killed.</li> <li>Can be used in fallow bed/stale seedbed for weed control.</li> <li>Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>SUGARCANE</b>	2	Postemergence Directed Spray (Includes Hooded or Shielded)				<b>General Comments</b> <ul style="list-style-type: none"> <li>Apply as a hooded, shielded or directed spray to avoid contact with cane foliage to prevent leaf burn and yield reduction.</li> <li>Make a second and final application, if necessary, when new weed growth is 2-6" high.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> </ul>
-- Florida --	2		2.0 pts.	Ground: 50 gals.	-	<ul style="list-style-type: none"> <li>For optimum results, apply in early spring (March-April) when weeds are small.</li> <li>Do not apply after June 1 as cane growth may be stunted and yields reduced.</li> </ul>
-- Hawaii --	2		2.0 pts.	Ground: 20 gals.	-	<ul style="list-style-type: none"> <li>Do not apply after cane rows have closed in.</li> </ul>
-- Louisiana --	2		1.0-3.0 pts.	Ground: 20 gals.	30	<ul style="list-style-type: none"> <li>For tiller control, apply when tillers are less than 18" high.</li> <li>Use the higher rate for heavier weed infestations or tiller growth.</li> </ul>
-- Florida & Texas --	1	Harvest Aid	0.6-1.0 pts.	Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Use higher rate under cool, cloudy weather conditions.</li> <li>Apply 3-14 days before burning and harvest.</li> </ul>
<b>SUNFLOWER</b>	3	Preplant or Preemergence Broadcast or Banded Over Row	2.5-4.0 pts.	Ground: 10 gal Air: 5 gal	-	<ul style="list-style-type: none"> <li>Apply before, during, or after planting but before crop emergence.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>SUNFLOWER</b>	2	Preharvest Desiccation Broadcast	1.2-2.0 pts.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>• Apply when sunflower seeds reach physiological maturity (when seed moisture is 35% or lower). For many varieties, this corresponds to the time when the back of the heads are yellow and the bracts are turning brown.</li> <li>• Do not graze treated areas or feed treated forage to livestock.</li> <li>• Use the higher rate when crop stands or weed infestations are heavy.</li> </ul>
<b>TARO, DRYLAND</b> (Hawaii Only)	2	Postemergence Directed Spray	2.0-3.0 pts.	Ground: 10 gals.	180	<ul style="list-style-type: none"> <li>• Do not allow spray to contact the taro plants as injury may result.</li> <li>• Make the first application when weed growth is 1-4" high.</li> <li>• Weeds emerging after the application will not be controlled.</li> <li>• A single re-treatment may be made; however, do not harvest dryland taro within 6 months of the last application.</li> </ul>
<b>TREE PLANTATION ESTABLISHMENT</b> Deciduous and Conifers	3	Preplant Broadcast	2.0-4.0 pts.	Ground: 20 gals.	-	<ul style="list-style-type: none"> <li>• Prepare ground early to allow maximum emergence of weeds.</li> <li>• Apply prior to planting. Plant with minimal soil disturbance.</li> <li>• Use the higher rate for heavier weed infestations.</li> <li>• For improved burndown or residual control, tank mix Gramoxone Inteon with other herbicides labelled for this use.</li> <li>• Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> <li>• Do not apply in less than 20 gals./A as weed control will be reduced.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>TREES AND VINES</b> Orchards, Vineyards, Windbreak, Shade & Ornamental Trees	5 except for:	Directed Spray	2.5-4.0 pts.	Ground: 10 gals.	Apricots 28 Cherries 28 Figs 13 Kiwi Fruit 14 Nectarines 28 Olives 13 Peaches 14 Pistachios 7 Plums 28	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems (except suckers), fruit or foliage.</li> <li>Use a shield or wrap plant when spraying around young trees or vines.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>Do not apply when figs, nuts or olives to be harvested are on the ground.</li> <li>For apricots - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For cherries - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For figs - Do not harvest within 13 days after application and do not exceed 5 postemergence directed applications per season.</li> <li>For grapes - treat when sucker growth is no more than 8" long. Late season applications to weeds should be made to avoid contact with desirable foliage.</li> <li>For kiwi fruit - Do not treat more than 3 times per year. Do not harvest within 14 days after application.</li> <li>For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatment may be necessary.</li> <li>For nectarines - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For olives - Do not harvest within 13 days after application and do not exceed 4 postemergence directed applications per season.</li> <li>For peaches - Do not harvest within 14 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For pistachios - Do not exceed two applications after shells split. Do not harvest within 7 days after application.</li> <li>For plums - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> </ul>
Acerola	3					
Apples	Cherries					
Apricots	3					
Avocados	Kiwi Fruit					
Bananas	3					
Beechnut	Nectarines					
Brazil Nut	3					
Butternut	Olives					
Calamondin	4					
Cashew	Peaches					
Cherries	3					
Chestnut	Pistachios					
Chinquapin	5					
Citrus Citron	(only 2 after shells split)					
Coffee	Plums					
Crabapple	3					
Figs						
Filberts						
Grapefruit						
Grapes						
Hickory Nut						
Kiwi Fruit						
Kumquat						
Lemon						
Lime						
Loquat						
Macadamia Nuts						
Mandarin						
Mayhaw						
Nectarines						
Olives						
Orange (sour & sweet)						
Papayas						
Peaches						
Pears						
Pear, oriental						

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>TREES AND VINES</b> Pecans Pistachios Plums Prunes Pummelo Quince Satsuma mandarin Walnuts Other shade and ornamental trees such as arborvitae, ash, elm, fir, oak, pine, etc.						
<b>TREES AND VINES</b> Tank Mixes	5 except for: Apricots 3 Cherries 3 Kiwi Fruit 3 Nectarines 3 Olives 4 Peaches 3 Pistachios 5 (only 2 after shells split) Plums 3	Directed Spray	2.5-4.0 pts.	Ground: 10 gals.	Refer to other TM labels	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with registered residual herbicides listed below for combined emerged and residual weed control. Always refer to other herbicide label(s) for respective precautions, limitations, restrictions, dates and directions for use and weeds controlled.</li> <li>Gramoxone Inteon may be tank mixed with the following herbicides: Devrinol®, Goal, Karmex®, Krovar® I Herbicides, Princep, Sinbar, Surflan, Solticam®</li> </ul>
<b>TYFON</b> (New Hampshire only)	3	Preplant Preemergence	2.5-4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>Seeding should be done with a minimum of soil disturbance.</li> <li>Weeds and grasses emerging after treatment will not be controlled.</li> <li>Crop plants emerged at time of application will be injured.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>VEGETABLES</b> (Seeded or Transplanted) Beans (Lima, Snap) Broccoli Brussels Sprouts Cabbage Cantaloupe Carrots Cauliflower Cavalo Broccolo Chayote Fruit Chinese Cabbage Chinese Waxgourd Citron Melon Collards Cucumber Eggplant Endive (Escarole) Gherkin Gourd, Edible Groundcherry Kale Kohlrabi Lettuce Mizuna <i>Momordica</i> spp. Musk Melons Mustard Greens Mustard Spinach Peas Pepino Peppers Pumpkin Rape Greens Squash Sweet Corn Tomatillo Turnips Tomatoes Watermelons	3	Preplant Preemergence	2.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.</li> <li>Applications can be made as a banded or broadcast treatment before, during or after planting but prior to the crop emergence.</li> <li>Use the higher rate for heavier weed infestations.</li> <li>Seeding or transplanting should be done with a minimum amount of soil disturbance.</li> <li>Crop plants emerged at time of application will be killed.</li> <li>Can be used in fallow bed/stale seedbed for weed control alone or tank mixed with Goal. Consult the Goal label for a list of weeds controlled, rates of application and precautions.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>VEGETABLES</b> Eggplant Tomatoes Peppers	3	Directed Spray	2.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>For control or suppression of emerged weeds between rows after crop establishment.</li> <li>Use precision directed spray application equipment adjusted to prevent spray contact with crop plants. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>Apply when weeds are succulent and weed growth is less than 6".</li> <li>Do not apply more than 3 applications per season.</li> <li>Do not allow animals to graze in treated areas.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>
<b>VEGETABLES</b> Tomatoes	2	After Final Harvest	2.4-3.75 pts.	Ground: 40-120 gals.		<ul style="list-style-type: none"> <li>Apply in 40-120 gallons of water per acre.</li> <li>Add NIS containing 75% or more surface active agent at 0.125 v/v (1 pt./100 gals. spray solution).</li> <li>Thorough coverage of the tomato vines is required to ensure maximum herbicide burndown.</li> <li>Use of dirty or muddy water may deactivate Gramoxone Inteon.</li> <li>To help facilitate removal of Sweet Potato Whitefly, burn tomato vines with propane burners as soon as possible after the vines have dried down sufficiently.</li> <li>DO NOT apply more than a total of 1.875 lbs. active ingredient (paraquat) per acre per season.</li> <li>To minimize drift, do not use nozzles or nozzle configurations which produce fine spray droplets (mist).</li> </ul>
<b>VEGETABLES</b> (California, Washington, Oregon, Idaho only) Lettuce Melon Sugar Beets Tomatoes	2	Broadcast	0.75-1.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>



Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
VEGETABLES Rhubarb	2	Dormant	2.5-4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>• Apply during dormant season before buds in crown begin to grow.</li> <li>• Do not make more than 2 applications per season.</li> </ul>

## ALFALFA

**Table 2. New Seedlings - Suppression and control of broadleaf weeds and grasses in new alfalfa seedlings grown for hay (California only)**

For Control of:	Rate/Acre	
	For Suppression	For Control
Spikeweed (4 inches tall or less)	8 fl. oz.	16-24 fl. oz.
Volunteer Small Grain (8 inches tall or less)	8-16 fl. oz.	32 fl. oz.
Fiddleneck (6 inches tall or less)	8-16 fl. oz.	32 fl. oz.
Shepherdspurse	16-32 fl. oz.	-
Annual Bluegrass	-	16-32 fl. oz.
Chickweed	-	16-32 fl. oz.
Red Maids (6 inches tall or less)	-	16-32 fl. oz.

Do not use the 8.0 fl. oz. rate unless the alfalfa has at least 3 trifoliate leaves; the 16.0 fl. oz. rate unless the alfalfa has 6 trifoliate leaves; or rates over 16.0 fl. oz. unless there are 9 trifoliate leaves.

## RESIN SOAKING

Pines (Loblolly, Shortleaf, Longleaf, Slash, Virginia, Pond, Pitch, and Spruce Pines)

**Tree Selection** - Select trees to be treated from stands on sites not subject to periods of extreme drought stress as the desiccating effect of Gramoxone Inteon to pines is accentuated during such periods, causing a reduction in the amount of oleoresin deposited in the xylem. Select trees to be treated from vigorous, nonstagnated stands, either natural or planted. In stagnated stands or commercial timber stands, plan treating with Gramoxone Inteon not sooner than three years after a commercial thinning.

**Application Directions** - Apply Gramoxone Inteon diluted in water to a suitable wound in the tree trunk to bring the treatment into contact with the xylem (sapwood).

**Bark Streaks or Cuts:** This type of wound is made using a standard or rotary bark hack or a chainsaw chipping tool employed in naval stores work to remove a single 1-inch wide streak of bark about 1-2 ft. from ground level. The total length should not exceed 1/3 of the tree circumference. Multiple streaks or cuts can result in serious girdling of the trunk and premature death of the tree. A coarse spray (about 1.7-5.0 ml.) Gramoxone Inteon solution (1-5% cation, wt./wt. basis) should be applied to runoff to the exposed xylem, using a low-pressure sprayer. The amount of spray required per cut depends on tree circumference and the length of cut or streak (1/3 of circumference). For a 9-inch diameter tree, 3 ml. of spray will cover the 1-inch wide streak. Using 3 ml. of a 3 or 6% Gramoxone Inteon solution will result in application of 60 or 120 mg. Gramoxone Inteon per streak.

**Time of Treatment:** Resin soaking can occur from treatments made any time of the year; however, cool season treatments under nondrought conditions usually result in less severe pine beetle infestations and longer tree life.

**Interval Between Treatment and Tree Harvest:** The interval between application of Gramoxone Inteon and tree harvest should be a minimum of 6 months and preferably from 12-24 months. Intervals of over 6 months may not be possible under conditions of drought or serious pine beetle attacks, which may make early harvest necessary. The Gramoxone Inteon treatment may encourage beetle attack, or may cause premature death of the tree. Desiccation of the xylem tissue, rather than the desired resin soaking, may occur, and is more likely at higher dosage rates.

**Effect on Stem Growth:** Gramoxone Inteon treatment can result in reduced stem growth during the interval between treatment and tree harvest.

Dilution Table for Gramoxone Inteon (2.0 lbs. cation per gallon):	
Concentration of Cation Desired (Wt./Wt. Basis)	To 1 Gallon of Gramoxone Inteon add the following No. Gals. of Water:
0.2%	118.8
0.5%	46.8
1.0%	22.9
2.0%	10.9
3.0%	6.9
4.0%	4.9
5.0%	3.7

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CONSERVATION RESERVE, FEDERAL SET-ASIDE, CONSERVATION COMPLIANCE PROGRAMS</b> (For use in compliance with the Federal Conservation Reserve Program or Federal set-aside programs).	3	Broadcast	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>For improved emerged weed control or extended weed control, Gramoxone Inteon may be tank mixed with other herbicides registered for this use. Refer to tank mix herbicide labels for specific directions, limitations, cautions and for a list of weeds controlled.</li> </ul>
<b>NONCROP USES</b>	10	Broadcast or Spot Treatment	2.5-4.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>For use in noncrop areas such as public airports, electric transformer stations, pipeline pumping stations, around commercial buildings, storage yards and other installations, fence lines or similar noncrop areas.</li> <li>Avoid contact with the foliage of ornamentals or desired plants.</li> </ul>
<b>PASTURE RESEEDING</b> For suppression of existing sod and undesirable emerged broadleaf weeds and grasses prior to or at time of planting grasses or forage legumes	3	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	See specific geographic recommendation	<p><b>West of Cascade and Sierra Nevada Mountains</b></p> <ul style="list-style-type: none"> <li>Apply in October through December after first fall rains and after weeds have emerged and sod has started new growth.</li> <li>For best seeding results, apply on moderately to heavily grazed areas.</li> <li>Do not use in areas with heavy sod and weed growth.</li> </ul> <p><b>East of Rocky Mountains</b></p> <ul style="list-style-type: none"> <li>Use the 2.0 pt. rate on vigorous or coarse sod species such as brome grass.</li> <li>Apply prior to, or at time of seeding grasses or forage legumes.</li> <li>Apply only to grazed or mowed pastures not more than 3" in height at time of treatment.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
						<b>Bermudagrass or Bahiagrass Sod</b> <ul style="list-style-type: none"> <li>• Apply in late summer or early fall to sod not exceeding 3 inches in height.</li> <li>• For control of emerged Little Barley, apply in February or March before the midboot stage of Little Barley.</li> </ul>
						<b>Bermudagrass and Coastal Bermudagrass Pastures</b> <ul style="list-style-type: none"> <li>• Apply when bermudagrass is dormant.</li> <li>• For control of little barley, apply before the mid-boot stage.</li> <li>• Do not mow for hay until 40 days after treatment</li> </ul>
For Control of Endophyte-Fungus-Infected Fescue Forage Legume/Grass Mixture and Other Grass Pastures	2	Broadcast (Split Application)	1.0-2.0 pts. followed by 1.0-2.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>• Use split applications of 10-21 days apart if necessary.</li> <li>• Do not exceed 4.0 pts./A total in preparation for reseeding.</li> <li>• For spring plantings, the initial application of 1.0-2.0 pts. may be made the previous fall.</li> <li>• Apply when fescue is actively growing and no more than 4" high.</li> <li>• To reduce the infestation of endophyte-infested grass, do not allow fescue to go to seed starting with the preceding year's crop.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
*For Prickly Pear Desiccation in Pastures	10	Spot Sprays	1.0 fl. oz. per gallon of water	Spray to wet weed foliage		<p>*Not for use in California.</p> <ul style="list-style-type: none"> <li>Knapsack, backpack sprayers, pump-up pressure sprayers, hand-guns, hand wands, and other hand-held equipment can be used to direct the spray onto weed foliage for spray to wet applications.</li> <li>Mix 1.0 fl oz of Gramoxone Inteon and 1/3 fl. oz. of a nonionic surfactant per gallon of water.</li> <li>Spray coverage should be uniform and provide complete cover of all green prickly pear foliage.</li> <li>Apply in May through September for best desiccation results.</li> <li>Do not use more than 2.5 pts. of Gramoxone Inteon per acre per year.</li> <li>Apply only to pastures with no more than 3" of height at time of treatment.</li> <li>For improved desiccation and perennial control of Prickly pear, tank mix with Grazon P+D Specialty Herbicide at a rate of 1-2 fl. oz. per gallon of water.</li> <li>Refer to the Grazon P+D Specialty Herbicide label for directions, restrictions, and precautions.</li> </ul>
*For Juniper Species leaf moisture reduction or desiccation prior to <u>Prescribed</u> burning of pastures	10	Broadcast	2.0 pts.	Air: 5 gals.		<p>*Not for use in California.</p> <ul style="list-style-type: none"> <li>Use only in conjunction with prescribed burning as recommended and monitored by local SCS or University and Extension Range Specialists.</li> <li>Apply during hot, dry weather conditions (generally July and August).</li> <li>Use 2% v/v nonionic surfactant in a minimum of 5 gpa spray solution.</li> <li>Juniper leaf moisture content should be monitored; however, maximum leaf moisture reduction generally occurs 3-4 weeks after Gramoxone Inteon application.</li> <li>Significant soil moisture and/or wet weather conditions prior to or after application will decrease the potential for Juniper Crown burns.</li> <li>Cool or humid weather conditions also adversely affect leaf moisture reduction.</li> <li>Do not graze livestock after application or prior to burning.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
*Native Pastures	2	Broadcast	1.5-1.8 pts.	Ground: 10 gals. Air: 5 gals.		<p>*Not for use in California</p> <ul style="list-style-type: none"> <li>• Apply Gramoxone Inteon for control of Downy and Japanese Brome.</li> <li>• Apply in spring after 90% node formation of brome species, but before full bloom.</li> <li>• Emerged native perennial grasses will be burned by application, but application after 90% node formation will allow adequate time for native grasses to recover and attain maximum growth in the use season.</li> <li>• Do not apply more than 1.8 pts. Gramoxone Inteon per year</li> <li>• Apply only to pastures with no more than 3" of height at time of treatment.</li> </ul>

<b>Conversion Table Gramoxone Inteon to Be Applied</b>			
<b>Ounces</b>	<b>Pints</b>	<b>Lb. a.i.</b>	<b>Acres/Gallon</b>
16.0	1.0	0.25	8.00
24.0	1.5	0.375	6.00
32.0	2.0	0.5	4.00
40.0	2.5	0.625	3.20
48.0	3.0	0.75	2.66
56.0	3.5	0.875	2.28
64.0	4.0	1.00	2.00

## **STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

### **Pesticide Storage**

Store at temperatures above 32°F.

### **Pesticide Disposal**

Pesticides wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### **Container Disposal**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For Bulk/Mini-Bulk Containers - Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

### **Bulk/Mini-Bulk Refillable Containers**

Before refilling, inspect thoroughly for damage, such as cracks, punctures, bulges, dents, abrasions and damaged or worn threads on closure devices. After filling and



before transporting, check for leaks. Do not refill or transport damaged or leaking container.

For help with any spill, leak or fire involving this material, call 1-800-888-8372.

**CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!**

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AAtrex®, Ambush®, Bicep MAGNUM®, Bicep II MAGNUM®, Bicep Lite II MAGNUM®, Callisto®, Caparol®, Devrinol®, Dual MAGNUM®, Flexstar®, Karate®, Lexar™, Lumax®, Princep®, Reglone®, Solicam®, Zorial®, and the Syngenta logo are trademarks of a Syngenta Group Company

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Harvade® trademark of Uniroyal Chemical Company

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For non-emergency (e.g., current product information), call  
Syngenta Crop Protection at 1-800-334-9481.

Syngenta Crop Protection, Inc.  
Greensboro, North Carolina 27409  
[www.syngenta-us.com](http://www.syngenta-us.com)

(Base/Container Label)

**RESTRICTED USE PESTICIDE  
Due to Acute Toxicity**

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Gramoxone Inteon™

Herbicide

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:	
Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) .....	30.1%
Other Ingredients:	69.9%
Total:	100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon.  
Contains alerting agent (odor), emetic, dye and Inteon Technology.

See directions for use in attached booklet.

EPA Reg. No. 100-

EPA Est.

**KEEP OUT OF REACH OF CHILDREN.**



**DANGER / POISON  
PELIGRO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

2.5 gallons  
Net Contents

\_\_\_\_ gallons  
Net Contents

<b>FIRST AID</b> <b>Contains Paraquat, a Bipyrldylium Herbicide</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• <b>SPEED IS ESSENTIAL.</b> Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fullers Earth.</li> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• The odor of this product is from the alerting agent, which has been added, not from the paraquat.</li> <li>• If person is not breathing, call 911 or an ambulance.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>NOTE TO PHYSICIAN</b> Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment'. ( <a href="http://www.syngenta.com/pqmedguide/">http://www.syngenta.com/pqmedguide/</a> ) Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment..	
<b>HOT LINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call <b>1-800-888-8372</b>	

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## PRECAUTIONARY STATEMENTS

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### HAZARDS TO HUMANS AND DOMESTIC ANIMALS



**DANGER / POISON**  
**PELIGRO**

May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist NIOSH-approved respirator with any N, R, P, or HE filter. Causes substantial but temporary eye injury. Wear protective eyewear (face shield required when mixing/loading). Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing. Avoid contact with skin. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash clothing before reuse.

**IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

### Environmental Hazards

**Wildlife:** This product is toxic to wildlife. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

**Drift:** Gramoxone Inteon is a contact herbicide that desiccates all green plant tissue. Paraquat dichloride is toxic to nontarget crops and plants if off-target movement occurs. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion. Refer to the local state laws, regulations, guidelines and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement.

## Physical and Chemical Hazards

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

[Warranty Statement on Bulk Only]

### CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and Buyer and User assume the risk of any such use. SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **IT IS THE MANUFACTURER'S INTENTION THAT THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT**

**LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitations of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

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## **STORAGE AND DISPOSAL**

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Do not contaminate water, food, or feed by storage or disposal.

### **Pesticide Storage**

Store at temperatures above 32°F.

### **Pesticide Disposal**

Pesticides wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### **Container Disposal**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For Bulk/Mini-Bulk Containers - Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

### **Bulk/Mini-Bulk Refillable Containers**

Before refilling, inspect thoroughly for damage, such as cracks, punctures, bulges, dents, abrasions and damaged or worn threads on closure devices. After filling and before transporting, check for leaks. Do not refill or transport damaged or leaking container.

For help with any spill, leak or fire involving this material, call 1-800-888-8372.

**CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!**



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Syngenta Crop Protection, Inc.  
Greensboro, NC 27409  
[www.syngenta-us.com](http://www.syngenta-us.com)

GRAMOXONE INTEON CLEAN-HARM – pd – 09/15/04, 08/05/05, 8/10/05  
000100-XXXXX.20040914.GRAMOXONE-INTEON-091404.pdf  
000100-XXXXX.20040914B.GRAMOXONE-INTEON-091404.pdf  
000100-XXXXX.20040914C.GRAMOXONE-INTEON-091404.pdf



Addendum to Gramoxone Inteon Label

Page i

This logo will appear on caps of 2.5 gallon jugs. It will also appear on pressure sensitive labels for 30 gallon, 120 gallon and bulk containers.



Addendum to Gramoxone Inteon label.

Page ii.

One of two bands shown here may appear on 30 gallon containers.



**SEE NEW RATE** AS COMPARED TO GRAMOXONE MAX

**SEE NEW RATE** AS COMPARED TO GRAMOXONE MAX

**SEE NEW RATE** AS COMPARED TO GRAMOXONE MAX

# GRAMOXONE

## Best Use Guidelines for Gramoxone Inteon

- For best results, treat actively growing weeds and grasses when they are between one- and six-inches tall.
- Always add a non-ionic surfactant (NIS).
- Obtain complete coverage of target weeds for most effective control.
- Use flat-fan nozzles for the most effective application.
- Use clean water or clear liquid nitrogen fertilizer as a carrier when spraying.
- Tank mix with other herbicides for improved burndown of difficult weeds and for residual control.
- Excellent glyphosate resistance management herbicide due to its unique mode of action.

### Burndown Weed Control & Equivalence to Gramoxone Max

	Standard Burndown Rate (Pints/A)		
Gramoxone Inteon	2.5	3.0	4.0
Gramoxone Max equivalent	1.7	2.0	2.7

### Cotton Harvest Aid Guidelines & Equivalence to Gramoxone Max

	Cotton HA Defoliation and Boll Opening Rate (fl.oz./A)		Cotton HA Late-Season Desiccation Rate (Pints/A)	
Gramoxone Inteon	3.0	11.0	1.0	2.0
Gramoxone Max equivalent	2.1	7.5	0.7	1.3

For more information, visit the Syngenta Crop Protection website: [www.syngentacropprotection.com](http://www.syngentacropprotection.com) or call 1-866-SYNGENTA (866-796-4368).

Gramoxone Inteon and Gramoxone Max are restricted use pesticides.

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**Important:** Always read and follow label instructions before buying or using these products. Syngenta Crop Protection, Inc. warrants that its products conform to the chemical description set forth on the products' labels. NO OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY TO SYNGENTA PRODUCTS. Syngenta Crop Protection, Inc. neither assumes nor authorizes any representative or other person to assume for it any obligation or liability other than such as is expressly set forth herein. IN NO EVENT SHALL SYNGENTA CROP PROTECTION, INC. BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM ANY USE OR HANDLING OF ITS PRODUCTS. No statements or recommendations contained herein are to be construed as inducements to infringe any relevant patent now or hereafter in existence.

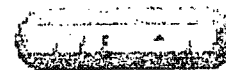
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G&S 405.54110 (8/05)

**syngenta**

SCP 141-00006-A

# GRAMOXONE



## Las Mejores Pautas Del Uso Para Gramoxone Inteon

- Para obtener resultados óptimos, aplique a maleza y hierbas en crecimiento que tengan entre 1 y 6 pulg. (2.5 y 15 cm) de altura.
- Agregue siempre un surfactante no iónico (NIS).
- Para lograr un control de máxima eficacia, realice un cubrimiento completo de las malezas que desee eliminar.
- Para lograr una aplicación de máxima eficacia, utilice boquillas de abanico plano.
- Al rociar, utilice agua limpia o fertilizante de nitrógeno líquido transparente como portador.
- A fin de lograr mejores resultados de quemado y control residual de malezas difíciles, mezcle el producto con otros herbicidas en el tanque.
- Este herbicida ofrece un excelente manejo de resistencia a glifosatos gracias a su exclusivo modo de acción.

### Control de malezas por quemado y equivalencia de Gramoxone Max

	Tasa de quemado estándar tasa (pintas/acre)		
Gramoxone Inteon	2.5	3.0	4.0
Equivalente de Gramoxone Max	1.7	2.0	2.7

### Guías para ayudar a la cosecha de algodón y equivalencia de Gramoxone Max

	Tasa de defoliación y apertura de capsulas (onzas liquidas/acre)		Tasa de desecación de temporada tardia (pintas/acre)	
Gramoxone Inteon	3.0	11.0	1.0	2.0
Equivalente de Gramoxone Max	2.1	7.5	0.7	1.3

Gramoxone Max y Gramoxone Inteon son pesticidas de uso restringido. Siempre lea la etiqueta antes de comprar y siga las instrucciones antes de utilizar estos productos.

**syngenta**

Revised - Dec, 2016



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

DATE: July 29, 2005

MEMORANDUM

TXR # 0052955

SUBJECT: Paraquat: Toxicokinetics in Dogs

FROM: Alberto Protzel, Ph.D.  
Branch Senior Scientist  
Toxicology Branch  
Health Effects Division (7509C)

*Alberto Protzel 7/29/05*

THRU: Louis Scarano, Ph.D. Chief  
Toxicology Branch  
Health Effects Division (7509C)

*Alberto Protzel for 7/29/05*

TO: Hope Johnson/ Risk Manager Reviewer  
James Tompkins/Risk Manager  
Registration Division (7509C)

Paraquat Dichloride [PC Code: 061601]  
DP Barcode: D309472

Action: Review four Toxicokinetics studies of Paraquat in Dogs

Conclusions:

1. Four toxicokinetics studies [MRIDs 46364510-11 and 4636517-18] of Paraquat formulations in dogs have been reviewed and Classified Acceptable/Non-Guideline.
2. Taken together, these studies show that inclusion of an emetic agent and a gelling agent decreases the acute oral toxicity of paraquat formulations in dogs.

AUG 17 2005  
*k*

3. This protection is not absolute, since dogs dosed at the highest dose may show small lung lesions consistent with paraquat toxicity.
4. Extrapolation of these results for protection of humans will require careful consideration of the actual conditions of human exposure, and the relative pharmacokinetics and pharmacodynamics of paraquat, emetic agent and gelling agent in humans versus dogs.

#### **Detailed Considerations.**

Four Toxicokinetics studies with paraquat have been submitted by Syngenta Crop Protection, Inc. The following paragraphs contain Executive Summaries of these studies.

1. Brammer, A., Heylings, J., Swain, C. (2004). Paraquat 240 G/L SL Formulation (A7813K): Toxicokinetic study in the dog. Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. CTL No. XD7355. September 8, 2004. **MRID 46364510.**

**EXECUTIVE SUMMARY:** A non-guideline study (MRID 46364510) was conducted in which three male beagle dogs were given incremental doses (via gelatin capsule) of Paraquat 240 g/L formulation A7813K (252 g/L paraquat; 1.5 g/L PP796 emetic; Lot No. J4267/75-2). Doses were 150, 302, and 602 mg/kg (equivalent to 32, 64, and 128 mg paraquat ion/kg, respectively) given at 1, 6, and 10 weeks, respectively. Plasma kinetics (concentration-time course, rate of absorption, peak plasma concentrations, and AUC parameters) were determined. Clinical observations (emesis response and general observations), clinical chemistry, gross pathology, and histopathology of selected organs/tissues were assessed.

This study, conducted to evaluate the toxicity and kinetics of a new emetic-containing paraquat formulation (A7813K which contains a "trigger gel" allowing for greater effectiveness of the PP796 emetic agent), provided data on key plasma kinetic parameters (rate of absorption and AUC values at 1, 4 and 24 hours). Absorption rates were approximately 19, 15, and 98 ng/ml/min for the 150, 302, and 602 mg/kg doses. AUC values were not notably different between the low and mid-dose but ~2-fold greater for the high dose. The 602 mg/kg dose of A7813K resulted in a peak plasma concentration of 2.8 paraquat ion µg/ml which was similar to that achieved with a 43 mg/kg dose of Gramoxon (a contemporary formulation lacking the "trigger gel"). Study results also demonstrated that the A7813K formulation was less toxic to dogs while providing for plasma levels and a systemic dose similar to that achieved with an existing formulation (Gramoxon) which does not contain gelling agents to increase the effectiveness of the PP796 emetic component. However, small lung lesions consistent with paraquat toxicity were seen in one of the three dogs at *postmortem*.

2. Brammer, A., Heylings, J., Swain, C. (2004). Gramoxone 200 G/L SL Formulation



(A3879D): Toxicokinetic study in the dog. Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. CTL No. XD7388. September 8, 2004. **MRID 46364511**. Unpublished.

**EXECUTIVE SUMMARY:**

A non-guideline study (MRID 46364511) was conducted to compare plasma kinetic data for Gramoxone 200 G/L SL formulation A3879D in dogs to data from an earlier study. Specifically, three male beagle dogs were given a single 43 mg/kg oral dose (via gelatin capsule) of Gramoxone 200 G/L SL formulation A3879D (195 g/L paraquat; 1.5 g/L and non-specified amount of PP796 emetic; Batch No. BSN3I1030). Plasma kinetics (concentration-time course), rate of absorption, and AUC parameters were determined for the paraquat ion and the emetic.

This was a cursory study designed to evaluate the plasma kinetics of a paraquat formulation in dogs following a single 43 mg/kg oral dose and to compare the results to data acquired from an earlier study. At the dose tested, Gramoxone was not overtly toxic to the dogs. Only one of three dogs exhibited emesis (to be expected from the emetic-containing Gramoxone) possibly indicative that emetic levels in plasma were insufficient to induce prompt emesis at the dose tested. Plasma concentration-time course data for both the paraquat ion and the PP796 emetic were variable (2-4 fold) among the three dogs, although near-complete elimination from the plasma occurred within 7 hours for the emetic, and at 12-24 hours for the paraquat ion. Peak plasma concentrations of paraquat ion ranged from 1.14 to 4.22 µg/ml. Peak plasma concentrations of the emetic ranged from 0.65 to 1.12 µg/ml. AUC values for both components were also variable due to the plasma kinetics (4.56-10.26 µg paraquat/ml-hr at 24 hours and 2.03-3.16 µg emetic/ml-hr. Most variability could be attributed to one dog. The kinetics observed in this study were similar to those reported in an earlier study.

3. Brammer, A. (2004). Paraquat 200 G/L SL Formulation (A3879BU): Toxicokinetic study in the dog. Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. CTL No. XD7201. January 7, 2004. **MRID 46364517**. Unpublished.

**EXECUTIVE SUMMARY:**

A non-guideline study (MRID 46364517) was conducted in which three male beagle dogs were given incremental doses (via gelatin capsule) of Paraquat 200 g/L formulation A3879BU (203 g/L paraquat; 1.56 g/L PP796 emetic; Lot No. J6481/016). Doses were 46, 92, 184, 368, and 736 mg/kg (equivalent to 8, 16, 32, 64, and 128 mg paraquat ion/kg, respectively) given at 1, 5, 9, 13, and 18 weeks. Plasma kinetics (concentration-time course), rate of absorption and AUC parameters were determined. Clinical observations (emesis response and general observations), clinical chemistry, gross pathology, and histopathology of selected organs/tissues were assessed.

The paraquat A3879BU dosing regimen produced signs of toxicity only at the highest dose and primarily in one dog. Peak plasma levels (2.57, 2.00, 3.07, 1.94, and 8.21 for the low to high doses) occurred at 0.5 to 1 hour, tended to occur earlier at higher doses, and did not exhibit a quantitative dose-response. Moderate individual variability was observed among the three dogs (generally 2-3 fold differences). The time-course data showed that the paraquat ion was almost completely eliminated within 24 hours after each dose. Peak plasma concentration of the emetic agent (PP796) occurred at 0.5 to 1 hour. The dose relationship was inconsistent at the 368 mg/kg dose (notably lower plasma emetic concentration) due to compromised absorption of the test article in one dog. The plasma levels at time points up to 2 hours tended to show a dose response but the 368 mg/kg dose varied somewhat from this pattern. Although the plasma concentration-time course was variable, the emetic component was nearly completely cleared from the plasma by 24 hours after dosing. At a given time point, the paraquat ion AUC values were similar for all doses except the highest, thereby indicating that the PP796-induced emesis was limiting the systemic dose of the paraquat ion. At the highest dose, the plasma paraquat ion concentration was approaching known toxic levels as demonstrated by the effects in one dog of this dose group.

This is a cursory study designed to examine the effectiveness of a novel paraquat formulation intended to limit accumulation of the toxic paraquat ion by inducing emesis in a non-target species. Although minor problems were noted (primarily due to one of three dogs), the study provided preliminary data indicating the effectiveness of the novel formulation.

A non-guideline study (MRID 46364517) was conducted to compare plasma kinetic data for Paraquat 200 G/L formulation A3879BU in dogs with Gramoxone, a commercial standard product.

4. Heylings, J., Swain, C., Brammer, A. (2004). Paraquat: Gramoxone 200 G/L SL Formulation: Toxicokinetic study in the dog. Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. CTL No. 026118. January 28, 2004. **MRID 46364518.**

#### **EXECUTIVE SUMMARY:**

A non-guideline study (MRID 46364518) was conducted to compare plasma kinetic data for Gramoxone 200 G/L SL formulation (CTL ref. no. Y00061, purity 20% assumed) in dogs administered the compound (44 mg Gramoxone/kg, equivalent to 8 mg paraquat ion/kg) via gelatin capsule or by gavage. These data were obtained from a series of studies conducted at Central Toxicology Laboratory over a period of several years. Specifically, the studies provided data for 12 dogs administered the test article via gelatin capsule and seven dogs dosed by gavage.

At the dose tested, emesis was the only treatment-related effect in the dogs. Emesis, an expected response, occurred as early as 16 minutes post dose and generally ceased

several hours post dose Paraquat ion profiles (concentration-time data and AUC estimates) were similar in dogs administered Gramoxone (44 mg/kg, equivalent to 8 mg paraquat ion) via gelatin capsule or by gavage. Peak plasma concentrations of 3-4 µg/ml were achieved at one hour post dose. The paraquat ion was almost completely cleared at 24 hours post dose in both groups. The variability in plasma concentration-time data could be attributed to individual variability among the limited number of dogs in each experimental group. AUC values over 24 hours were approximately 16 and 15 µg/ml·hr, respectively, for the gelatin capsule and gavage administrations.

The report is principally an analysis of plasma profile data from a series of earlier studies and was not designed or submitted as a guideline study.

240912

DATA EVALUATION RECORD

PARAQUAT  
STUDY TYPE: TOXICOKINETICS - DOG  
[NON-GUIDELINE]  
MRID 46364510

Prepared for

Health Effects Division  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
1801 Bell Street  
Arlington, VA 22202

Prepared by

Toxicology and Hazard Assessment Group  
Life Sciences Division  
Oak Ridge National Laboratory  
Oak Ridge, TN 37831  
Task Order No. 94-2005

Primary Reviewer:

Robert A. Young, Ph.D., D.A.B.T.

Signature:

Date:

Robert A. Young  
JUN 29 2005

Secondary Reviewers:

H.T. Borges, Ph.D., MT (ASCP), D.A.B.T.

Signature:

Date:

H.T. Borges  
JUN 29 2005

Robert H. Ross, M.S., Group Leader

Signature:

Date:

Robert H. Ross  
JUN 29 2005

Quality Assurance:

LeeAnn Wilson, M.A.

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Date:

L.A. Wilson  
JUN 29 2005

Disclaimer

This review may have been altered subsequent to the contractor's signatures above.

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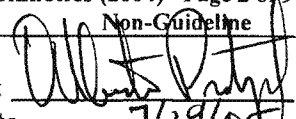
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EPA Reviewer: A. Protzel, Ph.D.

Toxicology Branch, Health Effects Division (7509C)

EPA Work Assignment Manager: P.V. Shah, Ph.D.

Registration Action Branch 1, Health Effects Division (7509C)

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Date 7/29/05

Signature: P.V. Shah

Date 7/29/05

Template version 11/01

TXR#: 0052955

**DATA EVALUATION RECORD****STUDY TYPE:** Toxicokinetics - dog [Non-guideline].**PC CODE:** 061601**DP BARCODE:** 309472**SUBMISSION NO.:** NA**TEST MATERIAL (PURITY):** (Paraquat 240 G/L Formulation [A7813K]; 22.3% a.i. w/w)**SYNONYMS:****CITATION:** Brammer, A., Heylings, J., Swain, C. (2004). Paraquat 240 G/L SL Formulation (A7813K): Toxicokinetic study in the dog. Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. CTL No. XD7355. September 8, 2004. MRID 46364510. Unpublished.**SPONSOR:** Syngenta Crop Protection, Inc., 410 Swing Road, P. O. Box 18300, Greensboro, NC 27419.**EXECUTIVE SUMMARY:** A non-guideline study (MRID 46364510) was conducted in which three male beagle dogs were given incremental doses (via gelatin capsule) of Paraquat 240 g/L formulation A7813K (252 g/L paraquat; 1.5 g/L PP796 emetic; Lot No. J4267/75-2). Doses were 150, 302, and 602 mg/kg (equivalent to 32, 64, and 128 mg paraquat ion/kg, respectively) given at 1, 6, and 10 weeks, respectively. Plasma kinetics (concentration-time course, rate of absorption, peak plasma concentrations, and AUC parameters) were determined. Clinical observations (emesis response and general observations), clinical chemistry, gross pathology, and histopathology of selected organs/tissues were assessed.

This study, conducted to evaluate the toxicity and kinetics of a new emetic-containing paraquat formulation (A7813K which contains a "trigger gel" allowing for greater effectiveness of the PP796 emetic agent), provided data on key plasma kinetic parameters (rate of absorption and AUC values at 1, 4 and 24 hours). Absorption rates were approximately 19, 15, and 98 ng/ml/min for the 150, 302, and 602 mg/kg doses. AUC values were not notably different between the low and mid-dose but ~2-fold greater for the high dose. The 602 mg/kg dose of A7813K resulted in a peak plasma concentration of 2.8 paraquat ion µg/ml which was similar to that achieved with a 43 mg/kg dose of Gramoxon (a contemporary formulation lacking the "trigger gel"). Study results also demonstrated that the A7813K formulation was less toxic to dogs while providing for plasma levels and a systemic dose similar to that achieved with an

## PARAQUAT 240 G/L FORMULATION (A7813K)

effectiveness of the PP796 emetic component. However, small lung lesions consistent with paraquat toxicity were seen in one of the three dogs at *postmortem*.

This study (MRID 46364510) on the toxicity and plasma kinetics of Paraquat 240 g/L (A7813K formulation) in dogs is classified **Acceptable/Non-Guideline** but does not satisfy the 85-1 Guideline Requirement for a metabolism study [OPPTS 870.7485, OECD 417]. The study was neither designed nor submitted as a guideline study.

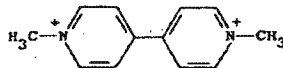
**COMPLIANCE:** Signed GLP, Data Confidentiality Claim, and Quality Assurance statements were provided in the study report.

**I. MATERIALS AND METHODS:****A. MATERIALS:****1. Test compound:** Paraquat 240 g/L SL formulation (A7813k)

<b>Radiolabelled test material:</b>	Not used
Radiochemical purity	NA
Specific Activity	NA
Lot/Batch #:	NA

**Non-Radiolabelled test material:**

Description:	Clear green liquid
Lot/Batch #:	J4267/75-2 (CTL ref. no.: Y12693/044)
Purity:	252 g/L paraquat and 1.5 g/L PP796 emetic
Contaminants:	None noted
CAS # of TGA1:	4685-14-7
Structure:	



**2. Vehicle and/or positive control:** Kinetics and emesis response data for Gramoxon (an alternate formulation of paraquat) were used for comparison to the currently tested A7813K formulation.

**3. Test animals:**

Species:	Dog; male
Strain:	Beagle
Age/weight at study initiation:	47-49 weeks; 11-11.5 kg
Source:	Conventional Animal Breeding Unit, Alderley Park, Macclesfield, UK
Housing:	Adjacent pens, 3/pen except on treatment days when they were housed individually for 6-7 hrs for observation
Diet:	350 g Laboratory Diet A (Special Diet Services Ltd., Stepfield, Witham, Essex, UK) daily
Water:	Tap water <i>ad libitum</i>
Environmental conditions:	<b>Temperature:</b> 19±2°C <b>Humidity:</b> 45-65% (elevation to 82% on several recorded on several occasions) <b>Air changes:</b> 15/hr <b>Photoperiod:</b> 12 hrs/12 hrs

Acclimation period:

4. **Dose preparations:** Amounts of A7813K required to achieve the target doses of paraquat ion (Table 1) were placed into gelatine capsules. The amount of test material was calculated as:

$$\text{mg formulation/kg} = \frac{(\text{dose volume [ml]} \times \text{specific gravity [1.13]}) \times 1000}{\text{weight (kg)}}$$

The capsules were filled immediately prior to dosing and placed in a second capsule to minimize contamination with oral/esophageal secretions. The high dose was divided between two capsules. Total dose volumes were 0.133, 0.267, and 0.533 ml/kg for the 150, 302, and 602 mg/kg doses, respectively.

Analysis of the dose preparations prior to dosing by Jealotts Hill International confirmed the paraquat ion and emetic (PP796) concentrations.

## B. STUDY DESIGN AND METHODS:

1. **Group arrangements:** The experimental groups are shown in Table 1. Feed consumption was recorded (mean g feed/dog/day) for at least one week prior to treatment and throughout the treatment period. The A7813K formulation contains a "trigger gel" which increases the effectiveness of the PP796 emetic agent. The study was designed to ascertain the effectiveness of the emetic and resulting impact on plasma paraquat ion levels.

TABLE 1. Experimental protocol for toxicokinetic study in male beagle dogs given multiple oral doses of Paraquat 240 G/L SL Formulation (A7813K)			
Dose No.	A7813K dose (mg/kg) (mg paraquat ion/kg)	Week no.	Comments
1	150 (32)	1	3 dogs each received incremental doses (orally in gelatine capsules) at designated weeks; dogs fed at 4 hrs post dose and observed for 6-7 hrs
2	302 (64)	6	
3	602 (128)	10	

Data taken from p 16, MRID 46364510.

2. **Dosing and sample collection/preparation/analysis:** The dogs were dosed with the gelatine capsules (as described in §I.A.4) at approximately the same time of day and fed four hours later. Each of three dogs was dosed at 1, 6, and 10 weeks (Table 1). The dogs were weighed weekly prior to feeding, on day 1 of treatment and at weekly intervals thereafter. Clinical observations were conducted on the dogs for at least four hours following dosing and hourly thereafter. On non-dosing days, the dogs were observed at least twice daily for signs of toxicity or abnormal behavior.

Blood samples (from the jugular vein) were collected in heparinized tubes prior to feeding on the day before each dose, at 24 hours post dose and immediately prior to termination. The following clinical chemistry parameters were assessed:

Electrolytes:		Other:	
x	Calcium	x	Albumin
x	Chloride	x	Blood creatinine
	Magnesium	x	Blood urea nitrogen
x	Phosphorus	x	Cholesterol
x	Potassium	x	Globulins
x	Sodium	x	Glucose
Enzymes		x	Total bilirubin
x	Alkaline phosphatase (ALK)	x	Total serum protein (TP)
	Cholinesterase (ChE)	x	Triglycerides
x	Creatinine phosphokinase		Serum protein electrophoresis
	Lactic acid dehydrogenase (LDH)	x	A/G Ratio
x	Serum alanine aminotransferase (also SGPT)		
x	Serum aspartate aminotransferase (also SGOT)		
	Gamma glutamyl transferase (GGT)		
x	Glutamate dehydrogenase		

Blood samples were also taken for determination of the blood kinetic parameters of the test article and the emetic agent. For each dose, 2 ml blood samples were collected (in lithium heparin) on the day of dosing, 15 min, 30 minutes, and 1, 2, 4, 7, 12, and 24 hours post dose. Blood samples were centrifuged and subjected to spectrophotometric and fluorescence HPLC analysis.

At 2 weeks after the final dose, the dogs were killed by an overdose of sodium pentobarbitone), exsanguinated, and a necropsy performed. Macroscopic examinations included abnormal tissue, kidney, heart, lungs, stomach, duodenum, ileum, jejunum, liver, and esophagus. All tissues were subjected to microscopic examination.

### 3. Analytical techniques:

**Second derivative spectrophotometric analysis:** Plasma paraquat was determined by passing an aliquot (50-300 µl) of plasma through an ANSYSS SPEC PLUS PT SI cartridge. The cartridge was rinsed with HCl and the eluent collected. Dithionite reagent in NaOH was then passed through the cartridge and the eluent collected in the same cuvette as the HCl rinse. Second order derivative spectra (360-440 nm) were determined relative to a reagent blank using a Unicam UV1 spectrophotometer. The paraquat concentration was determined by reference to a standard curve for 0-10 µg paraquat/ml plasma. The limit of quantification (LOQ) was 0.1 µg/ml.

**Fluorescence HPLC:** For plasma samples containing less than 0.1 µg paraquat/ml, fluorescence HPLC was used. Plasma samples (200 µl) were derivatized with 1% potassium ferricyanide in 9M NaOH and extracted in chloroform. The chloroform extractions were processed in silica cartridges and acetonitrile. The resulting paraquat dipyrindrone was eluted and analyzed by HPLC (Inertsil Phenyl-3 5 µ column); flow rate was 1 ml/min using a mobile phase of 30% acetonitrile and 70% water, and fluorescence detection. The amount of paraquat in each sample was determined by comparison to a standard curve (0-0.1 µg/ml). The LOQ was 10 ng/ml.



PARAQUAT 240 G/L FORMULATION (A7813K)

4. **Storage stability:** Recommended storage conditions were provided but no other data were available regarding stability. Dosing formulations were prepared immediately prior to administration.
5. **Calculations/ statistical analysis:** Dose calculations and quantitative information regarding dose formulations were provided. Data were expressed as mean  $\pm$  standard deviation.

## II. RESULTS:

- A. **CLINICAL OBSERVATIONS:** Scheduled veterinary examinations revealed no abnormalities. With the exception of vomiting, no clinical signs could be attributed directly to the treatment.

1. **Emesis:** The most notable (and expected) finding was emesis, the duration and severity (i.e., quantity of vomitus) of which increased with dose (Table 2). No additional effects were observed following the cessation of vomiting.

TABLE 2. Time (min) to emesis and duration of emesis in male dogs following oral dosing with Paraquat A7813K				
Dose (mg formulation/kg) [mg paraquat ion/kg]	Male 1	Male 2	Male 3	Mean*
	Time to first emesis			
150 [32]	23	23	31	26 $\pm$ 5
302 [64]	23	21	17	20 $\pm$ 3
602 [128]	23	20	16	20 $\pm$ 4
	Time to last emesis			
150 [32]	32	47	52	44 $\pm$ 10
302 [64]	43	48	51	47 $\pm$ 4
602 [128]	70	113	131	105 $\pm$ 31

\* Mean  $\pm$ SD (calculated by reviewer)

Data taken from p. 20, MRID 46364510.

2. **Bodyweight:** Body weight of the three dogs was not significantly affected by the treatment. Body weights at Week -1 were 11.5, 11.3, and 10.8 kg and at Week 12 were 12.2, 11.3, and 11.2 kg. Dog no.2 lost 0.3 kg during week 11 but regained the weight during the final week.
3. **Food consumption:** Feed consumption was not significantly affected by the treatment. Weekly feed consumption ranged from 307-350 g/dog/day.
4. **Clinical chemistry:** There were no treatment-related effects on clinical chemistry parameters. Dog #3 exhibited clinically insignificant elevation (~3-fold) of plasma ALP level throughout the study (Week -1 to termination).
5. **Gross pathology:** Small, discolored areas were seen in the left and right apical lung lobes of dog No. 2. There were no findings for the other two dogs.

6. **Microscopic pathology:** Microscopic lung lesions consistent with paraquat toxicity were seen in dog No. 2 (fibrosis, interstitial pneumonitis, macrophage infiltration)

**B. TOXICOKINETICS:** The rate of absorption at 15 minutes and AUC values at 1, 4, and 24 hours for paraquat (A7813K) in dogs are summarized in Table 3. Peak plasma paraquat concentrations of ~1.25 µg/ml (150 and 302 mg/kg doses) and ~2.8 µg/ml (602 mg/kg dose) were achieved about 1 hour post dose. Analysis of graphic displays of plasma paraquat concentration-time data indicated increasing individual variability in peak concentrations among the three dogs in each dose group. The variability in peak plasma concentration was especially notable among the dogs in the highest dose group (approximately 1.2, 2.2, and 5.2 µg/ml). Rate of absorption and AUC values for the 150 and 302 mg/kg doses were not substantially different. Rate of absorption at the high dose was notably greater and AUC values were reflective of the greater dose. For comparison of the new formulation (A7813K), similar data (from another study) on a previously used formulation (Gramoxone A3879D) were also presented. Rate of absorption at 15 minutes for the 43 mg/kg Gramoxone dose (8 mg paraquat ion/kg) was 3.7 ng/ml/min. Paraquat AUC values at 1, 4, and 24 hours for Gramoxone were 0.89, 5.63, and 7.98 µg/ml·min, respectively.

TABLE 3. Plasma kinetics of Paraquat (A7813K) in dogs following oral administration.				
Parameter/dose (mg formulation/kg) [mg paraquat ion/kg]	15 min	1 hr	4 hrs	24 hrs
Abs. Rate (ng/ml/min)				
150 [32]	18.90±9.17	—	—	—
302 [64]	15.08±11.10	—	—	—
602 [128]	97.73±68.47	—	—	—
AUC (µg/ml·hr)				
150 [32]	—	0.77±0.15	3.02±0.23	4.65±0.36
302 [64]	—	0.78±0.31	2.56±0.56	3.69±0.66
602 [128]	—	2.04±1.02	6.15±2.49	7.96±3.19

Data taken from Table 5, p. 48, MRID 46364510.

The rate of absorption at 15 minutes and AUC values at 1, 4, and 24 hours for the emetic in dogs are summarized in Table 4. The absorption rates and AUC values for emetic in the three dose levels were similar to those observed for paraquat. Kinetic values for the emetic in Gramoxone (A3879D) were 0.012 ng/ml/min rate of absorption at 15 minutes, and AUC values of 0.41, 2.00, and 2.49 µg/ml·min for 1, 4 and 24 hours, respectively.

## PARAQUAT 240 G/L FORMULATION (A7813K)

TABLE 4. Plasma kinetics of for emetic component (PP796) in dogs following oral administration.				
Parameter/dose (mg formulation/kg) [mg paraquat ion/kg]	15 min	1 hr	4 hrs	24 hrs
Abs. Rate (ng/ml/min)				
150 [32]	0.262±0.134	—	—	—
302 [64]	0.205±0.090	—	—	—
602 [128]	0.549±0.306	—	—	—
AUC (µg/ml·hr)				
150 [32]	—	5.13±1.68	15.00±4.27	18.52±5.08
302 [64]	—	4.48±0.62	13.67±1.44	17.31±2.17
602 [128]	—	9.43±2.80	29.01±8.14	41.93±10.49

Data taken from Table 6, p. 49, MRID 46364510.

### III. DISCUSSION AND CONCLUSIONS

**A. INVESTIGATORS' CONCLUSIONS:** The investigators concluded that at the doses tested, dogs exhibited no significant signs of toxicity and that the paraquat A7813K formulation was rapidly absorbed and eliminated. At the highest dose tested (602 mg/kg equivalent to 128 mg of paraquat ion/kg), paraquat concentration in the blood did not exceed 3 µg/ml. The 24-hour AUC value indicated that the overall 24-hour systemic exposure to paraquat was 7.96 µg/ml·hr which was similar to the 24-hour AUC of 7.98 µg/ml·hr for the currently used Gramoxon formulation. The findings indicated that a substantially higher dose (602 mg/kg) of the A7813K formulation achieved plasma levels of the paraquat ion similar to those achieved with a 43 mg/kg dose of the existing Gramoxon formulation without inducing significant toxicity in dogs. The tested formulation (A7813K) also provided greater effectiveness of the emetic agent relative to the Gramoxon formulation.

The study authors also provided insight into the mechanism by which the A7813K formulation allows for greater paraquat levels in the absence of serious systemic toxicity. Specifically, the A7813K formulation contains a water soluble gelling agent (alignate), the viscosity of which increases upon contact with gastric acid. This, in turn, allows for greater effectiveness of the emetic agent (PP796) resulting in decreased toxicity in the dog.

**B. REVIEWER COMMENTS:** A non-guideline study (MRID 46364510) was conducted in which three male beagle dogs were given incremental doses (via gelatin capsule) of Paraquat 240 g/L formulation A7813K (252 g/L paraquat; 1.5 g/L PP796 emetic; Lot No. J4267/75-2). Doses were 150, 302, and 602 mg/kg (equivalent to 32, 64, and 128 mg paraquat ion/kg, respectively) given at 1, 6, and 10 weeks. Plasma kinetics (concentration-time course), rate of absorption and AUC parameters were determined. Clinical observations (emesis response and general observations), clinical chemistry, gross pathology, and histopathology of selected organs/tissues were assessed.

This study, conducted to evaluate the toxicity and kinetics of a new paraquat formulation, provided data on key plasma kinetic parameters (rate of absorption and AUC values at 1, 4 and 24 hours). The A7813K formulation contains a "trigger gel" which increases the effectiveness of the PP796 emetic agent. The study was specifically designed to ascertain the effectiveness of the emetic and resulting impact on plasma paraquat ion levels. Study results

**PARAQUAT 240 G/L FORMULATION (A7813K)**

also demonstrated that the A7813K formulation was less toxic to dogs while providing for plasma levels and a systemic dose similar to that achieved with an existing formulation (Gramoxon). The protection afforded by the new formulation, however, was not absolute since one of the 3 dogs showed some small lung lesions consistent with paraquat toxicity. The study appeared to be well conducted. A more concise rationale for the selection of the incremental dose regimen would be a useful component of the experimental protocol. Individual variability in clinical chemistry parameters as well as the plasma kinetics assessments were acceptable and typical for this type of study. The investigators' conclusions regarding the toxicity assessment are supported by the data. The assessment of the plasma kinetic parameters are also consistent with the graphic display of the data provided in the study report. The study authors; however, indicated that the 602 mg/kg dose of the A7813K formulation was 16-fold greater than the 43 mg/kg Gramoxon dose; the difference appears to be 14-fold. Details regarding analytical methods for determination of plasma paraquat were provided in the study report.

This study (MRID 46364510) on the toxicity and plasma kinetics of Paraquat 240 g/L (A7813K formulation) in dogs is classified **Acceptable/Non-Guideline** and does not satisfy the 85-1 Guideline Requirement for a metabolism study [OPPTS 870.7485, OECD 417]. The study was neither designed nor submitted as guideline study.

**C. STUDY DEFICIENCIES:** There were no apparent deficiencies in the study.

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# DATA EVALUATION RECORD

PARAQUAT (GRAMOXONE)  
STUDY TYPE: TOXICOKINETICS - DOG  
[NON-GUIDELINE]  
MRID 46364511

Prepared for

Health Effects Division  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
1801 Bell Street  
Arlington, VA 22202

Prepared by

Toxicology and Hazard Assessment Group  
Life Sciences Division  
Oak Ridge National Laboratory  
Oak Ridge, TN 37831  
Task Order No. 94-2005

Primary Reviewer:

Robert A. Young, Ph.D., D.A.B.T.

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Robert A. Young  
JUN 29 2005

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H.T. Borges, Ph.D., MT (ASCP), D.A.B.T.

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JUN 29 2005

Robert H. Ross, M.S., Group Leader

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Date:

Robert H. Ross  
JUN 29 2005

Quality Assurance:

LeeAnn Wilson, M.A.

Signature:

Date:

J.A. Wilson  
JUN 29 2005

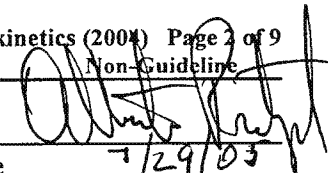
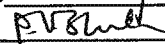
## Disclaimer

This review may have been altered subsequent to the contractor's signatures above.

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EPA Reviewer: A. Protzel, Ph.D.  
Toxicology Branch, Health Effects Division (7509C)  
EPA Work Assignment Manager: P.V. Shah, Ph.D.  
Registration Action Branch 1, Health Effects Division (7509C)

Signature:   
Date: 7/29/03  
Signature:   
Date: 7/29/03  
Template version 11/01

TXR#: 0052955

**DATA EVALUATION RECORD****STUDY TYPE:** Toxicokinetics - dog [Non-guideline].**PC CODE:** 061601**DP BARCODE:** 309472  
**SUBMISSION NO.:** NA**TEST MATERIAL (PURITY):** (Gramoxone 200 G/L SL Formulation [A3879D]; 19.5% a.i. w/w)**SYNONYMS:**

**CITATION:** Brammer, A., Heylings, J., Swain, C. (2004). Gramoxone 200 G/L SL Formulation (A3879D): Toxicokinetic study in the dog. Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. CTL No. XD7388. September 8, 2004. MRID 46364511. Unpublished.

**SPONSOR:** Syngenta Crop Protection, Inc., 410 Swing Road, P. O. Box 18300, Greensboro, NC 27419.

**EXECUTIVE SUMMARY:**

A non-guideline study (MRID 46364511) was conducted to compare plasma kinetic data for Gramoxone 200 G/L SL formulation A3879D in dogs to data from an earlier study. Specifically, three male beagle dogs were given a single 43 mg/kg oral dose (via gelatin capsule) of Gramoxone 200 G/L SL formulation A3879D (195 g/L paraquat; 1.5 g/L and non-specified amount of PP796 emetic; Batch No. BSN3I1030). Plasma kinetics (concentration-time course), rate of absorption, and AUC parameters were determined for the paraquat ion and the emetic.

This was a cursory study designed to evaluate the plasma kinetics of a paraquat formulation in dogs following a single 43 mg/kg oral dose and to compare the results to data acquired from an earlier study. At the dose tested, Gramoxone was not overtly toxic to the dogs. Only one of three dogs exhibited emesis (to be expected from the emetic-containing Gramoxone) possibly indicative that emetic levels in plasma were insufficient to induce prompt emesis at the dose tested. Plasma concentration-time course data for both the paraquat ion and the PP796 emetic were variable (2-4 fold) among the three dogs, although near-complete elimination from the plasma occurred within 7 hours for the emetic, and at 12-24 hours for the paraquat ion. Peak plasma concentrations of paraquat ion ranged from 1.14 to 4.22 µg/ml. Peak plasma concentrations of the emetic ranged from 0.65 to 1.12 µg/ml. AUC values for both components were also variable due to the plasma kinetics (4.56-10.26 µg paraquat/ml·hr at 24 hours and 2.03-

**PARAQUAT 240 G/L FORMULATION (A7813K)**

3.16 µg emetic/ml·hr. Most variability could be attributed to one dog. The kinetics observed in this study were similar to those reported in an earlier study.

This study (MRID 46364511) on the toxicity and plasma kinetics of Gramoxone 200 G/L SL formulation A3879D in dogs is classified **Acceptable/Non-Guideline** and does not satisfy the 85-1 Guideline Requirement for a metabolism study [OPPTS 870.7485, OECD 417]. It was neither designed nor submitted as a guideline study.

**COMPLIANCE:** Signed GLP, Data Confidentiality Claim, and Quality Assurance statements were provided in the study report.

**I. MATERIALS AND METHODS:**

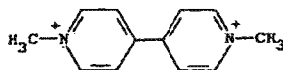
**A. MATERIALS:**

**1. Test compound:** Gramoxone 200 GL SL formulation (A3879D)

<b>Radiolabelled test material:</b>	Not used
Radiochemical purity	NA
Specific Activity	NA
Lot/Batch #:	NA

**Non-Radiolabelled test material:**

Description:	Dark green liquid
Lot/Batch #:	BSN311030 (CTL ref. no. Y12693/074)
Purity:	195 g/L paraquat
Contaminants:	None noted
CAS # of TGAI:	4685-14-7
Structure:	



**2. Vehicle and/or positive control:** None noted.

**3. Test animals:**

Species:	Dog; male
Strain:	Beagle
Age/weight at study initiation:	~10 months; 10.7-12.2 kg
Source:	Conventional Animal Breeding Unit, Alderley Park, Macclesfield, UK
Housing:	Adjacent pens, 3/pen except on treatment days when they were housed individually for 6-7 hrs for observation
Diet:	350 g Laboratory Diet A (Special Diet Services Ltd., Stepfield, Witham, Essex, UK) daily
Water:	Tap water <i>ad libitum</i>
Environmental conditions:	<b>Temperature:</b> 19±2°C <b>Humidity:</b> 45-65% (elevation to 66-70% on several recorded on several occasions) <b>Air changes:</b> 15/hr <b>Photoperiod:</b> 12 hrs/12 hrs
Acclimation period:	4 Weeks

PARAQUAT 240 G/L FORMULATION (A7813K)

4. **Dose preparations:** Amounts of A3879D required to achieve the target doses of paraquat ion (Table 1) were placed into gelatine capsules. The amount of test material was calculated as:

$$\text{mg formulation/kg} = \frac{(\text{dose volume [0.04 ml]} \times \text{specific gravity [1.074]}) \times 1000}{\text{weight (kg)}}$$

The capsules were filled immediately prior to dosing and placed in a second capsule to minimize contamination with oral/esophageal secretions.

Analysis of the dose preparations prior to dosing by Jealotts Hill International confirmed the paraquat ion and emetic (PP796) concentrations.

**B. STUDY DESIGN AND METHODS:**

1. **Group arrangements:** The experimental groups are shown in Table 1. Feed consumption was recorded (mean g feed/dog/day) for at least one week prior to treatment and throughout the 2-week treatment period.

TABLE 1. Experimental protocol for toxicokinetic study in male beagle dogs given a single oral dose of Paraquat 200 G/L SL Formulation (A3879D)	
A3879D dose (mg/kg) (mg paraquat ion/kg)	Comments
43 (8)	3 dogs each received a single dose (orally in gelatin capsules); dogs fed at 4 hrs post dose and observed for 6-7 hrs

Data taken from p 16, MRID 46364511.

2. **Dosing and sample collection/preparation/analysis:** The dogs were dosed with the gelatine capsules (as described in §I.A.4) at approximately 9:00 a.m. and fed four hours later. The dogs were weighed weekly prior to feeding, on day 1 of treatment and at weekly intervals thereafter. Clinical observations were conducted on the dogs for at least four hours following dosing and hourly thereafter. On non-dosing days, the dogs were observed at least twice daily for signs of toxicity or abnormal behavior.

Blood samples (from the jugular vein) were collected in heparinized tubes prior to feeding on the day prior to dosing. The following clinical chemistry parameters were assessed:



## PARAQUAT 240 G/L FORMULATION (A7813K)

Electrolytes:		Other:	
x	Calcium	x	Albumin
x	Chloride	x	Blood creatinine
	Magnesium	x	Blood urea nitrogen
x	Phosphorus	x	Cholesterol
x	Potassium	x	Globulins
x	Sodium	x	Glucose
Enzymes		x	Total bilirubin
x	Alkaline phosphatase (ALK)	x	Total serum protein (TP)
	Cholinesterase (ChE)	x	Triglycerides
x	Creatinine phosphokinase		Serum protein electrophoresis
	Lactic acid dehydrogenase (LDH)	x	A/G Ratio
x	Serum alanine aminotransferase (also SGPT)		
x	Serum aspartate aminotransferase (also SGOT)		
	Gamma glutamyl transferase (GGT)		
x	Glutamate dehydrogenase		

Blood samples were also taken for determination of the blood kinetic parameters of the test article and the emetic agent. For each dose, 2 ml blood samples were collected (in lithium heparin) on the day of dosing, 15 min, 30 minutes, and 1, 2, 4, 7, 12, and 24 hours post dose. Blood samples were centrifuged and subjected to spectrophotometric and fluorescence HPLC analysis.

### 3. Analytical techniques:

**Second derivative spectrophotometric analysis:** Plasma paraquat was determined by passing an aliquot (50-300 µl) of plasma through an ANSYSS SPEC PLUS PT SI cartridge. The cartridge was rinsed with HCl and the eluent collected. Dithionite reagent in NaOH was then passed through the cartridge and the eluent collected in the same cuvette as the HCl rinse. Second order derivative spectra (360-44 nm) were determined relative to a reagent blank using a Unicam UV1 spectrophotometer. The paraquat concentration was determined by reference to a standard curve for 0-10 µg paraquat/ml plasma. The limit of quantification (LOQ) was 0.1 µg/ml.

**Fluorescence HPLC:** For plasma samples containing less than 0.1 µg paraquat/ml, fluorescence HPLC was used. Plasma samples (200 µl) were derivatized with 1% potassium ferricyanide in 9M NaOH and extracted in chloroform. The chloroform extractions were processed in silica cartridges and acetonitrile. The resulting paraquat dipyrindrone was eluted and analyzed by HPLC (Inertsil Phenyl-3 5 µ column); flow rate was 1 ml/min using a mobile phase of 30% acetonitrile and 70% water, and fluorescence detection. The amount of paraquat in each sample was determined by comparison to a standard curve (0-0.1 µg/ml). The LOQ was 10 ng/ml.

4. **Storage stability:** Recommended storage conditions were provided but no other data were available regarding stability. Dosing formulations were prepared immediately prior to administration.

5. **Calculations/ statistical analysis:** Dose calculations and quantitative information regarding dose formulations were provided. Data were expressed as mean  $\pm$  standard deviation.

## II. **RESULTS:**

- A. **CLINICAL OBSERVATIONS:** Scheduled veterinary examinations revealed no abnormalities. With the exception of vomiting, no clinical signs could be attributed directly to the treatment.

1. **Emesis:** The most notable finding was emesis (brown liquid) in one dog which occurred at 1 hour 35 minutes post dose. This was followed by a second emesis (thick frothy, cream-colored vomitus) at 3 hours 20 minutes post dose. Neither of the other dogs vomited.
2. **Bodyweight:** Body weight of the three dogs was not significantly affected by the treatment. Body weights at Day -6 were 10.7, 10.7, and 12.2 kg and at Day 15 were 10.8, 10.8, and 12.0 kg.
3. **Food consumption:** Feed consumption was not significantly affected by the treatment. Daily feed consumption ranged from 230-350 g/dog/day.
4. **Clinical chemistry:** There were no treatment-related effects on clinical chemistry parameters.

- B. **TOXICOKINETICS:** Concentration-time course data for plasma paraquat are shown in Table 2. Peak plasma levels occurred at 1-2 hours but considerable variability in the concentration-time course was observed among the three dogs. The time-course data did, however, show that paraquat was rapidly eliminated to nearly undetectable levels by 12-24 hours post dose.

## PARAQUAT 240 G/L FORMULATION (A7813K)

TABLE 2. Plasma paraquat concentration-time ( $\mu\text{g/ml}$ ) course in dogs given a single oral dose of 43 mg/kg (equivalent to 8 mg paraquat ion/kg).				
Time (hrs)	Animal No.			Mean $\pm$ SD
	1	2	3	
Pre-dose	0.00	0.00	0.00	0.00 $\pm$ 0.00
0.25	0.04	0.08	0.04	0.06 $\pm$ 0.02
0.5	1.88	0.35	0.08	0.77 $\pm$ 0.97
1	4.22	0.99	1.83	2.34 $\pm$ 1.67
2	1.60	1.14	3.37	2.04 $\pm$ 1.18
4	0.41	0.51	0.63	0.52 $\pm$ 0.11
7	0.19	0.07	0.10	0.12 $\pm$ 0.06
12	0.23	0.04	0.08	0.12 $\pm$ 0.10
24	0.04	0.01	0.00	0.02 $\pm$ 0.02

Data taken from Table 7, p. 36, MRID 46364511

The time course data for the emetic component in the Gramoxone formulation are shown in Table 3. Peak plasma concentration was achieved at one-half hours for one dog, one hour for another, and at two hours for the third. Although the plasma concentration-time course was variable during the first two hours, the emetic component was nearly completely cleared from the plasma by seven hours after dosing.

TABLE 2. Emetic concentration-time course (ng/ml) in plasma of dogs given a single oral dose of 43 mg/kg (equivalent to 8 mg paraquat ion/kg).				
Time (hrs)	Animal No.			Mean $\pm$ SD
	1	2	3	
Pre-dose	0.00	0.00	0.00	0.00 $\pm$ 0.00
0.25	0.28	0.23	0.01	0.17 $\pm$ 0.14
0.5	0.98	0.50	0.17	0.55 $\pm$ 0.41
1	0.73	0.57	0.65	0.65 $\pm$ 0.08
2	0.39	1.12	0.57	0.69 $\pm$ 0.38
4	0.15	0.29	0.22	0.22 $\pm$ 0.07
7	0.00	0.00	0.04	0.02 $\pm$ 0.02
12	0.01	0.01	0.02	0.01 $\pm$ 0.00
24	0.00	0.00	0.00	0.00 $\pm$ 0.00

Data taken from Table 8, p. 37, MRID 46364511

Plasma paraquat AUC values at 1, 4, and 24 hours and rate of absorption at 15 minutes for the three dogs are shown in Table 4 and kinetics data for the emetic are shown in Table 5. Consistent with the variability observed for plasma concentrations, the plasma AUC values were also variable among the three dogs (4-fold at the 1-hr time point and ~2-fold at the 12 and 24 hour time points).

## PARAQUAT 240 G/L FORMULATION (A7813K)

TABLE 4. Plasma kinetics for paraquat ion in dogs following administration of a single oral dose of 43 mg Gramoxone/kg (equivalent to 8 mg paraquat ion/kg).				
Animal No.	Absorption rate @ 15 min µg/ml/min	AUC (µg/ml·hr)		
		1 hr	4 hrs	24 hrs
1	2.79	1.77	6.69	10.26
2	5.59	0.40	3.11	4.56
3	2.79	0.50	7.10	9.12
Mean±SD	3.73±1.61	0.89±0.76	5.63±2.19	7.98±3.02

Data taken from Table 5, p. 34, MRID 46364511.

The AUC values for the emetic (Table 5) in the Gramoxone formulation were also variable (up to ~3-fold), especially at the 1-hour time point. Similar to paraquat kinetics, the AUC variability was a function of the variable plasma absorption and elimination.

TABLE 4. Plasma kinetics for emetic in dogs following administration of a single oral dose of 43 mg Gramoxone/kg (equivalent to 8 mg paraquat ion/kg).				
Animal No.	Absorption rate @ 15 min ng/ml/min	AUC (µg/ml·hr)		
		1 hr	4 hrs	24 hrs
1	0.019	0.62	1.72	2.03
2	0.015	0.39	2.64	3.16
3	0.001	0.23	1.63	2.29
Mean±SD	0.012±0.010	0.41±0.20	2.00±0.55	2.49±0.60

Data taken from Table 6, p. 35, MRID 46364511.

### III. DISCUSSION AND CONCLUSIONS:

#### A. INVESTIGATORS' CONCLUSIONS

The investigators concluded that at the dose tested, dogs exhibited no significant signs of toxicity. Emesis in only one of three dogs suggested that the PP796 emetic levels in plasma were insufficient to induce prompt emesis following the single 43 mg Gramoxone/kg dose. Paraquat plasma levels following administration of the Gramoxone 200 G/L SL formulation were variable; possibly the result of one dog inasmuch as the AUC value for the other two dogs were similar to those observed in earlier studies. It was hypothesized that the variability may have been due to possible variations in capsule disintegration rate between the current and earlier study. The investigators concluded that, overall, the kinetics observed in this study were similar to those reported earlier.

- B. REVIEWER COMMENTS:** A non-guideline study (MRID 46364511) was conducted to compare plasma kinetic data for Gramoxone 200 G/L SL formulation A3879D in dogs to data from an earlier study. Specifically, three male beagle dogs were given a single 43 mg/kg oral dose (via gelatin capsule) of Gramoxone 200 G/L SL formulation A3879D (195 g/L paraquat; 1.5 g/L and non-specified amount of PP796 emetic; Batch No. BSN3I1030). Plasma kinetics (concentration-time course), rate of absorption, and AUC parameters were determined for the paraquat ion and the emetic.

This was a cursory study designed to evaluate the plasma kinetics of a paraquat formulation in dogs following a single 43 mg/kg oral dose and to compare the results to data acquired from an earlier study. The study protocol and analytical techniques were well described. At the dose tested, Gramoxone was not overtly toxic to the dogs. Only one of three dogs exhibited emesis (to be expected from the emetic-containing Gramoxone). Plasma concentration-time course data for both the paraquat ion and the PP796 emetic were variable (2-4 fold) among the three dogs, although near-complete elimination from the plasma occurred within 7 hours for the emetic, and at 12-24 hours for the paraquat ion. AUC values for both components were also variable due to the plasma kinetics. Most variability could be attributed to one dog. The reviewer concurs with the conclusions of the investigators.

This study (MRID 46364511) on the toxicity and plasma kinetics of Gramoxone 200 G/L SL formulation A3879D in dogs is classified **Acceptable/Non-Guideline** and does not satisfy the 85-1 Guideline Requirement for a metabolism study [OPPTS 870.7485, OECD 417]. The study was neither designed nor submitted as a guideline study.

**C. STUDY DEFICIENCIES:** There were no apparent deficiencies in the study.

2005/12

# DATA EVALUATION RECORD

PARAQUAT (A3879BU)  
STUDY TYPE: TOXICOKINETICS - DOG  
[NON-GUIDELINE]  
MRID 46364517

Prepared for

Health Effects Division  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
1801 Bell Street  
Arlington, VA 22202

Prepared by

Toxicology and Hazard Assessment Group  
Life Sciences Division  
Oak Ridge National Laboratory  
Oak Ridge, TN 37831  
Task Order No. 94-2005

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Robert A. Young, Ph.D., D.A.B.T.

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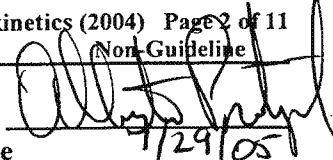
## Disclaimer

This review may have been altered subsequent to the contractor's signatures above.

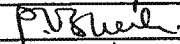
Oak Ridge National Laboratory, managed by UTBattelle, LLC, for the U.S. Dept. of Energy under contract  
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EPA Reviewer: A. Protzel, Ph.D.  
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Date: 7/29/05

Template version 11/01

TXR#: 0052955

**DATA EVALUATION RECORD****STUDY TYPE:** Toxicokinetics - dog [Non-guideline].**PC CODE:** 061601**DP BARCODE:** 309472**SUBMISSION NO.:** NA**TEST MATERIAL (PURITY):** (Paraquat 200 G/L SL Formulation [A3879BU]; 20.3% a.i. w/w)**SYNONYMS:**

**CITATION:** Brammer, A. (2004). Paraquat 200 G/L SL Formulation (A3879BU): Toxicokinetic study in the dog. Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. CTL No. XD7201. January 7, 2004. MRID 46364517. Unpublished.

**SPONSOR:** Syngenta Crop Protection, Inc., 410 Swing Road, P. O. Box 18300, Greensboro, NC 27419.

**EXECUTIVE SUMMARY:**

A non-guideline study (MRID 46364517) was conducted in which three male beagle dogs were given incremental doses (via gelatin capsule) of Paraquat 200 g/L formulation A3879BU (203 g/L paraquat; 1.56 g/L PP796 emetic; Lot No. J6481/016). Doses were 46, 92, 184, 368, and 736 mg/kg (equivalent to 8, 16, 32, 64, and 128 mg paraquat ion/kg, respectively) given at 1, 5, 9, 13, and 18 weeks. Plasma kinetics (concentration-time course), rate of absorption and AUC parameters were determined. Clinical observations (emesis response and general observations), clinical chemistry, gross pathology, and histopathology of selected organs/tissues were assessed.

The paraquat A3879BU dosing regimen produced signs of toxicity only at the highest dose and primarily in one dog. Peak plasma levels (2.57, 2.00, 3.07, 1.94, and 8.21 for the low to high doses) occurred at 0.5 to 1 hour, tended to occur earlier at higher doses, and did not exhibit a quantitative dose-response. Moderate individual variability was observed among the three dogs (generally 2-3 fold differences). The time-course data showed that the paraquat ion was almost completely eliminated within 24 hours after each dose. Peak plasma concentration of the emetic agent (PP796) occurred at 0.5 to 1 hour. The dose relationship was inconsistent at the 368 mg/kg dose (notably lower plasma emetic concentration) due to compromised absorption of the test article in one dog. The plasma levels at time points up to 2 hours tended to show a dose response but the 368 mg/kg dose varied somewhat from this pattern. Although the plasma concentration-

Paraquat 200 G/L SL Formulation (A3879BU)

time course was variable, the emetic component was nearly completely cleared from the plasma by 24 hours after dosing. At a given time point, the paraquat ion AUC values were similar for all doses except the highest, thereby indicating that the PP796-induced emesis was limiting the systemic dose of the paraquat ion. At the highest dose, the plasma paraquat ion concentration was approaching known toxic levels as demonstrated by the effects in one dog of this dose group.

This is a cursory study designed to examine the effectiveness of a novel paraquat formulation intended to limit accumulation of the toxic paraquat ion by inducing emesis in a non-target species. Although minor problems were noted (primarily due to one of three dogs), the study provided preliminary data indicating the effectiveness of the novel formulation.

A non-guideline study (MRID 46364517) was conducted to compare plasma kinetic data for Paraquate 200 G/L formulation A3879BU in dogs with Gramoxone, a commercial standard product. This study (MRID 46364517) on the toxicity and plasma kinetics of Paraquat 200 G/L SL formulation A3879BU in dogs is classified **Acceptable/Non-Guideline** and does not satisfy the 85-1 Guideline Requirement for a metabolism study [OPPTS 870.7485, OECD 417].

**COMPLIANCE:** Signed GLP, Data Confidentiality Claim, and Quality Assurance statements were provided in the study report.

**I. MATERIALS AND METHODS:****A. MATERIALS:****1. Test compound:** Paraquat 200 GL SL formulation (A3879BU)

**Radiolabelled test material:** not used

Radiochemical purity NA

Specific Activity NA

Lot/Batch #: NA

**Non-Radiolabelled test material:**

Description: dark green liquid

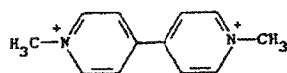
Lot/Batch #: J6481/016 (CTL ref. no. Y00061/947)

Purity: 20.3% (203 g/L paraquat; 1.56 g/L PP796 emetic)

Contaminants: none noted

CAS # of TGAI: 4685-14-7

Structure:

**2. Vehicle and/or positive control:** None noted.**3. Test animals:**

Species: dog; male

Strain: beagle

Age/weight at study initiation: 39-41 weeks; 11-13.2 kg



Paraquat 200 G/L SL Formulation (A3879BU)

Source:	Conventional Animal Breeding Unit, Alderley Park, Macclesfield, UK	
Housing:	adjacent pens, 3/pen except on treatment days when they were housed individually for 6-7 hrs for observation	
Diet:	350 g Laboratory Diet A (Special Diet Services Ltd., Stepfield, Witham, Essex, UK) daily	
Water:	tap water <i>ad libitum</i>	
Environmental conditions:	Temperature:	19±2°C (dropped to 16° on 2 days and increased to 24° for 2 days)
	Humidity:	45-65% (elevation to 67-78% on several recorded on several occasions)
	Air changes:	15/hr
	Photoperiod:	12 hrs/12 hrs
Acclimation period:	at least 2 weeks	

4. **Dose preparations:** Amounts of A3879BU required to achieve the target doses of paraquat ion (Table 1) were placed into gelatine capsules. The amount of test material was calculated as:

$$\text{mg formulation/kg} = \frac{(\text{dose volume [ml]} \times \text{specific gravity [1.15]}) \times 1000}{\text{weight (kg)}}$$

The capsules were filled immediately prior to dosing.

Analysis of the dose preparations prior to dosing by Jealotts Hill International confirmed the paraquat ion and emetic agent (PP796) concentrations.

**B. STUDY DESIGN AND METHODS:**

1. **Group arrangements:** The experimental groups are shown in Table 1. All three dogs were given incremental doses of the test article as indicated in Table 1. Feed consumption was recorded (mean g feed/dog/day) for at least one week prior to treatment and throughout the 2-week treatment period.

Table 1. Experimental protocol for toxicokinetic study in male beagle dogs given a single oral dose of Paraquat 200 G/L SL Formulation (A3879BU)			
Dose	A3879BU dose (mg/kg) (mg paraquat ion/kg)	Week	Comments
1	46 (8)	1	All dogs dosed at approximately the same time of day and fed approximately 4 hours after dosing. Treatment commenced on May 13, 2003; dogs were terminated (overdose of sodium pentobarbitone) September 22, 2003. Blood kinetic parameters (AUC; conc.-time course) determined for all dogs. Dose volumes ranged from 0.01-0.64 ml/kg.
2	92 (16)	5	
3	184 (32)	9	
4	368 (64)	13	
5	736 (128)	18	

Data taken from p 18 and 22, MRID 46364517.

## 2. Dosing and sample collection/preparation/analysis:

The dogs were dosed with the gelatine capsules (as described in §I.A.4) and fed four hours later. The dogs were weighed weekly prior to feeding, on day 1 of treatment and at weekly intervals thereafter. Clinical observations (including ophthalmoscopy) were conducted on the dogs for at least four hours following dosing and hourly thereafter. On non-dosing days, the dogs were observed at least twice daily for signs of toxicity or abnormal behavior.

Blood samples (from the jugular vein) were collected in lithium heparinized tubes prior to feeding and at 24 hours post dose. Additional blood samples were taken at 3 and 6 days after the 5<sup>th</sup> dose. The following clinical chemistry parameters were assessed:

Electrolytes:		Other:	
x	Calcium	x	Albumin
x	Chloride	x	Blood creatinine
	Magnesium	x	Blood urea nitrogen
x	Phosphorus	x	Cholesterol
x	Potassium	x	Globulins
x	Sodium	x	Glucose
Enzymes		x	Total bilirubin
x	Alkaline phosphatase (ALK)	x	Total serum protein (TP)
	Cholinesterase (ChE)	x	Triglycerides
x	Creatinine phosphokinase		Serum protein electrophoresis
	Lactic acid dehydrogenase (LDH)	x	A/G ratio
x	Serum alanine aminotransferase (also SGPT)		
x	Serum aspartate aminotransferase (also SGOT)		
	Gamma glutamyl transferase (GGT)		
x	Glutamate dehydrogenase		

Blood samples were also taken for determination of the blood kinetic parameters ( $AUC_{0-1}$ ,  $AUC_{0-4}$ ,  $AUC_{0-24}$ , and conc.-time course for the paraquat ion and emetic agent). For each dose, 2 ml blood samples were collected (in lithium heparin) on the day of dosing, 15 min, 30 minutes, and 1, 2, 4, 7, 12, and 24 hours post dose. Blood samples were centrifuged and subjected to spectrophotometric and fluorescence HPLC analysis (for analysis of paraquat and emetic agent (PP796).

At termination, the following tissues were examined *in situ*, removed and fixed for examination by light microscopy: any abnormal tissues, heart, lungs, kidney, duodenum, ileum, jejunum, stomach, and liver

## 3. Analytical techniques:

### Second derivative spectrophotometric analysis:

Plasma paraquat was determined by passing an aliquot (50-300  $\mu$ l) of plasma through an ANSYSS SPEC PLUS PT SI cartridge. The cartridge was rinsed with HCl and the eluent collected. Dithionite reagent in NaOH was then passed through the cartridge and the eluent collected in the same cuvette as the HCl rinse. Second order derivative spectra (360-44 nm)

were determined relative to a reagent blank using a Unicam UV1 spectrophotometer. The paraquat concentration was determined by reference to a standard curve for 0-10 µg paraquat/ml plasma. The limit of quantification (LOQ) was 0.1 µg/ml.

#### Fluorescence HPLC:

For plasma samples containing less than 0.1 µg paraquat/ml, fluorescence HPLC was used. Plasma samples (200 µl) were derivatized with 1% potassium ferricyanide in 9M NaOH and extracted in chloroform. The chloroform extractions were processed in silica cartridges and acetonitrile. The resulting paraquat dipyrindone was eluted and analyzed by HPLC (Inertsil Phenyl-3 5 µ column); flow rate was 1 ml/min using a mobile phase of 30% acetonitrile and 70% water, and fluorescence detection. The amount of paraquat in each sample was determined by comparison to a standard curve (0-0.1 µg/ml). The LOQ was 10 ng/ml.

#### 4. Storage stability:

Recommended storage conditions were provided but no other data were available regarding stability. Dosing formulations were prepared immediately prior to administration.

#### 5. Calculations/ statistical analysis:

Dose calculations and quantitative information regarding dose formulations were provided. Data were expressed as mean ± standard deviation.

## II. RESULTS:

### A. CLINICAL OBSERVATIONS

Scheduled veterinary examinations revealed no abnormalities. Vomiting was the most notable clinical sign. The dogs also exhibited slightly decreased activity, restlessness and/or excessive salivation (at the 184-768 mg/kg doses). At the highest dose, these effects were more severe and persistent (retching and/or vomiting up to 3 hours post dose).

#### 1. Emesis

The most notable (and expected) finding was emesis, the duration and severity (i.e., quantity of vomitus) of which increased with dose (Table 2). Time to emesis decreased with dose. No additional effects were observed following the cessation of vomiting.

Table 2. Time (min) to emesis and duration of emesis in male dogs following oral dosing with Paraquat A7813K				
Dose (mg formulation/kg) [mg paraquat ion/kg]	Male 1	Male 2	Male 3	Mean <sup>a</sup>
	Time to first emesis			
46 [8]	68	36	50	51.3±16.0
92 [16]	41	28	37	35.3±6.7
184 [32]	31	23	24	26.0±4.4

368 [64]	29	44	21	31.3±11.7
736 [128]	23	16	22	20.3±3.8
	Time to last emesis			
46 [8]	88	66	67	73.7±12.4
92 [16]	95	42	46	61.0±29.5
184 [32]	72	101	60	77.7±21.1
368 [64]	65	77	59	67.0±9.2
736 [128]	127	75	133	111.7±45.1

<sup>a</sup> Mean ±SD (calculated by reviewer)

Data taken from p. 22, MRID 46364517.

## 2. Bodyweight

Body weight of the three dogs was generally not significantly affected by the treatment; minor weight fluctuations were recorded throughout the study period. The most severe weight loss appeared to be dog no.3 which lost ~0.9 kg from Week 16 to Week 19.1. Body weights at Week-1 were 13.0, 11.2, and 12.3 kg and at termination were 13.1, 12.2, and 12.0 kg.

## 3. Food consumption

Feed consumption was not significantly affected by the treatment although dog no. 3 exhibited decreased feed consumption (221 g/day) during week 18. Daily feed consumption ranged from 221-350 g/dog/day.

## 4. Clinical chemistry

There were no treatment-related effects on clinical chemistry parameters.

## 5. Gross pathology/histopathology

One dog exhibited dark spots on two lobes of the lung which upon histopathologic examination were characterized by slight interstitial fibrosis, focal alveolar macrophage infiltration and slight focal pneumonocyte hypertrophy. Minimal medullary calcifications were also noted in the kidneys of two dogs.

## B. TOXICOKINETICS

Concentration-time course data for plasma paraquat are shown in Table 3. Peak plasma levels (2.57, 2.00, 3.07, 1.94, and 8.21 for the low to high doses) occurred at 0.5 to 1 hour, tended to occur earlier at higher doses, and did not exhibit a quantitative dose-response. Moderate individual variability was observed among the three dogs (generally 2-3 fold differences). The time-course data showed that paraquat was eliminated to nearly undetectable levels within 24 hours for all doses.

Table 3. Plasma paraquat concentration-time ( $\mu\text{g/ml}$ ) course in dogs given sequential oral dose of paraquat A3879BU <sup>a</sup> .					
Time (hrs)	Dose (mg A3879BU/kg)				
	46	92	184	368	736
Pre-dose	0.00 $\pm$ 0.00	0.00 $\pm$ 0.00	0.00 $\pm$ 0.00	0.00 $\pm$ 0.00	0.00 $\pm$ 0.00
0.25	0.28 $\pm$ 0.16	0.13 $\pm$ 0.15	0.60 $\pm$ 0.27	0.92 $\pm$ 0.94	3.31 $\pm$ 2.99
0.5	0.74 $\pm$ 0.16	1.24 $\pm$ 0.58	1.97 $\pm$ 0.81	1.94 $\pm$ 1.51	8.21 $\pm$ 3.65
1	2.57 $\pm$ 0.55	2.00 $\pm$ 1.18	3.07 $\pm$ 0.78	1.90 $\pm$ 0.21	5.23 $\pm$ 2.16
2	1.64 $\pm$ 0.27	1.04 $\pm$ 0.29	1.44 $\pm$ 0.29	1.36 $\pm$ 0.57	2.53 $\pm$ 0.87
4	0.59 $\pm$ 0.26	0.47 $\pm$ 0.25	0.67 $\pm$ 0.44	0.50 $\pm$ 0.10	0.67 $\pm$ 0.44
7	0.12 $\pm$ 0.05	0.19 $\pm$ 0.17	0.15 $\pm$ 0.04	0.12 $\pm$ 0.04	0.17 $\pm$ 0.12
12	0.02 $\pm$ 0.01	0.10 $\pm$ 0.12	0.08 $\pm$ 0.06	0.04 $\pm$ 0.03	0.05 $\pm$ 0.02
24	0.01 $\pm$ 0.00	0.01 $\pm$ 0.00	0.03 $\pm$ 0.02	0.01 $\pm$ 0.00	0.03 $\pm$ 0.00
72	-	-	-	-	0.01 $\pm$ 0.00
144	-	-	-	-	0.00 $\pm$ 0.00

<sup>a</sup> Mean  $\pm$  SD of three dogs

Data taken from Appendix F, pp. 64-65, MRID 46364517.

The time course data for the emetic component in the paraquat A3879BU formulation are shown in Table 4. Peak plasma concentration for the PP796 emetic occurred at 0.5 to 1 hour with no apparent relation to dose. Plasma levels were highly variable within each time frame and dose, due primarily to one dog with substantially lower levels (up to 19-fold lower) at early time points. The plasma levels at time points up to 2 hours tended to show a dose response. The 368 mg/kg dose varied somewhat from this pattern, however. Although the plasma concentration-time course was variable, the emetic component was nearly completely cleared from the plasma by 24 hours after dosing.

Table 4. Plasma emetic (PP796) concentration-time course (µg/ml) in dogs given sequential oral doses of paraquat (A3879BU) <sup>a</sup> .					
Time (hrs)	Dose (mg A3879BU/kg)				
	46	92	184	368	736
Pre-dose	0.13±0.03	0.00±0.00	0.00±0.00	0.39±0.08	0.00±0.00
0.25	0.27±0.05	1.59±1.07	1.86±0.28	1.68±1.15	3.98±3.53
0.5	2.07±0.43	4.48±1.94	8.42±0.97	6.29±5.08	10.04±7.60
1	2.82±0.30	4.24±2.62	7.09±1.87	6.45±1.53	8.39±4.01
2	2.14±0.51	2.70±0.97	4.47±0.88	3.93±0.84	5.50±2.36
4	1.07±0.15	0.91±0.22	1.99±0.05	1.79±0.07	2.15±0.86
7	0.29±0.05	0.40±0.45	0.40±0.06	0.70±0.04	0.38±0.18
12	0.19±0.04	0.00±0.00	0.08±0.02	0.42±0.18	0.08±0.08
24	0.09±0.03	0.00±0.00	0.04±0.04	0.44±0.05	0.00±0.00
72	-	-	-	-	ND
144	-	-	-	-	ND

<sup>a</sup> Mean ± SD of three dogs

Data taken from Appendix G, pp. 66-67, MRID 46364517.

Plasma paraquat AUC values at 1, 4, and 24 hours and rate of absorption at 15 minutes for the three dogs are shown in Table 5 and kinetics data for the emetic are shown in Table 6. AUC values were reflective of early, rapid absorption and a relatively uniform overall systemic dose at all doses except the highest. The AUC value for the 368 mg/kg dose was unexpectedly low.

Table 5. Plasma kinetics for paraquat ion in dogs following administration of incremental oral doses of paraquat A3879BU/kg (equivalent to 8 mg paraquat ion/kg) <sup>a</sup>				
Dose (mg A3879BU/kg)	Absorption rate @ 15 min ng/ml/min	AUC (µg/ml·hr)		
		1 hr	4 hrs	24 hrs
46	18.60±6.20	0.99±0.11	5.34±0.58	6.94±0.91
92	8.91±5.89	1.00±0.31	4.03±0.93	6.38±1.99
184	40.08±10.20	1.66±0.29	6.01±0.59	8.51±0.94
368	61.22±36.00	1.43±0.41	4.93±0.19	6.62±0.20
736	220.65±115.18	5.21±0.81	12.30±2.19	14.60±2.97

<sup>a</sup> Values are mean ± SD of three dogs/dose

Data taken from Table 6, p. 50, MRID 46364517.

The AUC values for the emetic (Table 6) in the paraquat formulation exhibited a dose-related

increase with the exception of the 368 mg/kg dose where the investigators noted a possible absorption deficiency for one dog. Absorption rates at 15 minutes exhibited a similar relationship.

Table 6. Plasma kinetics for emetic (PP796) in dogs following administration of incremental oral doses of paraquat A3879BU/kg (equivalent to 8 mg paraquat ion/kg) <sup>a</sup>				
Dose (mg A3879BU/kg)	Absorption rate @ 15 min $\mu\text{g/ml/min}$	AUC ( $\mu\text{g/ml}\cdot\text{hr}$ )		
		1 hr	4 hrs	24 hrs
46	0.009 $\pm$ 0.002	1.56 $\pm$ 0.06	7.26 $\pm$ 0.41	12.18 $\pm$ 0.35
92	0.106 $\pm$ 0.041	3.14 $\pm$ 0.73	10.22 $\pm$ 2.08	13.19 $\pm$ 3.28
184	0.124 $\pm$ 0.011	5.40 $\pm$ 0.51	17.64 $\pm$ 1.80	23.15 $\pm$ 1.90
368	0.086 $\pm$ 0.044	4.44 $\pm$ 1.47	15.35 $\pm$ 2.62	27.10 $\pm$ 2.01
736	0.265 $\pm$ 0.136	6.86 $\pm$ 2.61	21.45 $\pm$ 6.30	26.87 $\pm$ 7.02

<sup>a</sup> Values are mean  $\pm$  SD of three dogs/dose

Data taken from Table 7, p. 51, MRID 46364517.

### III. DISCUSSION AND CONCLUSIONS

#### A. INVESTIGATORS' CONCLUSIONS

The investigators concluded that at the dose regimen tested, dogs exhibited minimal to no toxic responses. Due to the emetic effect of the PP796, the plasma paraquat levels remained low. The maximum plasma concentration of  $\sim 12 \mu\text{g/ml}$  occurred in one dog of the 736 mg/kg dose. Plasma paraquat levels and AUC values for the 46-368 mg/kg doses were indicative of the effectiveness of the emetic agent in limiting systemic dose of the paraquat ion. At the highest dose (736 mg/kg), mean blood levels reached  $10 \mu\text{g/ml}$  (the plasma level known to induce notable toxicity and inducing minor toxicity in this study) but overt toxic effects were transient with their reduction correlating with a decreased plasma paraquat ion concentration. Pulmonary lesions (consistent with paraquat toxicity) were observed in the one dog with the  $12 \mu\text{g/ml}$  plasma level. Peak plasma concentrations of the emetic agent were attained at 0.5 to 1 hour and were apparently sufficient to allow for minimizing the plasma paraquat levels. The plasma profile for the emetic exhibited an inconsistent dose relationship due primarily to the response of one dog for which emetic absorption was reportedly compromised by ingestion of feces. When compared with previously available paraquat formulations (i.e., Gramoxone), the gelling agent and emetic in the A3879BU formulation appear to allow for proper absorption of the emetic while somewhat limiting paraquat absorption, thereby reducing paraquat-induced toxicity.

#### B. REVIEWER COMMENTS:

A non-guideline study (MRID 46364517) was conducted in which three male beagle dogs were given incremental doses (via gelatin capsule) of Paraquat 200 g/L formulation A7813BU (203 g/L paraquat; 1.56 g/L PP796 emetic; Lot No. J6481/016). Doses were 46,

92, 184, 368, and 736 mg/kg (equivalent to 8, 16, 32, 64, and 128 mg paraquat ion/kg, respectively) given at 1, 5, 9, 13, and 18 weeks. Plasma kinetics (concentration-time course), rate of absorption and AUC parameters were determined. Clinical observations (emesis response and general observations), clinical chemistry, gross pathology, and histopathology of selected organs/tissues were assessed.

The paraquat A3879BU dosing regimen produced signs of toxicity only at the highest dose and primarily in one dog. Peak plasma levels (2.57, 2.00, 3.07, 1.94, and 8.21 for the low to high doses) occurred at 0.5 to 1 hour, tended to occur earlier at higher doses, and did not exhibit a quantitative dose-response. Moderate individual variability was observed among the three dogs (generally 2-3 fold differences). The time-course data showed that paraquat was eliminated to nearly undetectable levels within 24 hours for all doses. Peak plasma concentration of the emetic agent (PP796) occurred at 0.5 to 1 hour. The dose relationship was inconsistent at the 368 mg/kg dose due to one dog exhibiting lower plasma emetic concentrations (up to 19-fold at early time points) due to compromised absorption of the test article. The plasma levels at time points up to 2 hours tended to show a dose response. The 368 mg/kg dose varied somewhat from this pattern, however. Although the plasma concentration-time course was variable, the emetic component was nearly completely cleared from the plasma by 24 hours after dosing. At a given time point, the paraquat ion AUC values were similar for all doses except the highest, thereby indicating that the PP796-induced emesis was limiting the systemic dose of the paraquat ion. At the highest dose, the plasma paraquat ion concentration was approaching known toxic levels as demonstrated by the effects in one dog of this dose group.

This is a cursory study designed to examine the effectiveness of a novel paraquat formulation intended to limit accumulation of toxic paraquat ion by inducing emesis in a non-target species. Although minor problems were noted (primarily due to minor toxicity in one of three dogs), the study provided preliminary data indicating the effectiveness of the novel formulation.

This study (MRID 46364517) on the toxicity and plasma kinetics of Paraquat 200 G/L SL formulation A3879BU in dogs is classified **Acceptable/Non-Guideline** and does not satisfy the 85-1 Guideline Requirement for a metabolism study [OPPTS 870.7485, OECD 417].

### C. STUDY DEFICIENCIES

It is curious that there were pretreatment plasma levels of emetic in dogs of the 368 mg/kg dose group. Individual plasma level data were unavailable in the study report.



2003/12  
historical  
co

DATA EVALUATION RECORD  
  
PARAQUAT (GRAMOXONE)  
STUDY TYPE: TOXICOKINETICS - DOG  
[NON-GUIDELINE]  
MRID 46364518

Prepared for

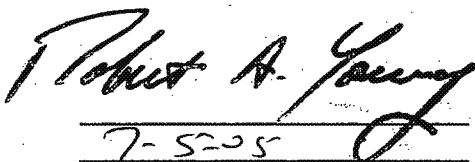
Health Effects Division  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
1801 Bell Street  
Arlington, VA 22202

Prepared by

Toxicology and Hazard Assessment Group  
Life Sciences Division  
Oak Ridge National Laboratory  
Oak Ridge, TN 37831  
Task Order No. 94-2005

Primary Reviewer:

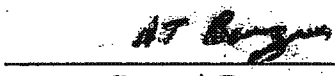
Robert A. Young, Ph.D., D.A.B.T.

Signature: 

Date: 7-5-05

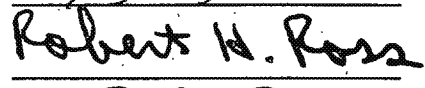
Secondary Reviewers:

H.T. Borges, Ph.D., MT (ASCP), D.A.B.T.

Signature: 

Date: 7-5-05

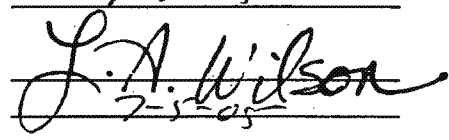
Robert H. Ross, M.S., Group Leader

Signature: 

Date: 7-5-05

Quality Assurance:

LeeAnn Wilson, M.A.

Signature: 

Date: 7-5-05

Disclaimer

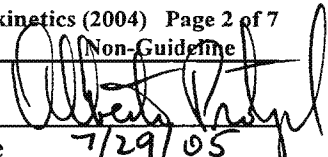
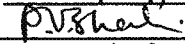
This review may have been altered subsequent to the contractor's signatures above.

Oak Ridge National Laboratory, managed by UTBattelle, LLC, for the U.S. Dept. of Energy under contract  
DEAC0500OR22725

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k

SYNG-PQ-01775584  
SYNG-PQ-01775584\_R

EPA Reviewer: A. Protzel, Ph.D.  
Toxicology Branch, Health Effects Division (7509C)  
EPA Work Assignment Manager: P.V. Shah, Ph.D.  
Registration Action Branch 1, Health Effects Division (7509C)

Signature:   
Date: 7/29/05  
Signature:   
Date: 7/29/05

Template version 11/01

**TXR#:** 0052955

**DATA EVALUATION RECORD**

**STUDY TYPE:** Toxicokinetics - dog [Non-guideline].

**PC CODE:** 061601

**DP BARCODE:** 309472

**SUBMISSION NO.:** NA

**TEST MATERIAL (PURITY):** (Gramoxone 200 G/L SL Formulation; 20% a.i. w/w)

**SYNONYMS:**

**CITATION:** Heylings, J., Swain, C., Brammer, A. (2004). Paraquat: Gramoxone 200 G/L SL Formulation: Toxicokinetic study in the dog. Central Toxicology Laboratory, Alderley Park, Macclesfield, Cheshire, UK. CTL No. 026118. January 28, 2004. MRID 46364518. Unpublished.

**SPONSOR:** Syngenta Crop Protection, Inc., 410 Swing Road, P. O. Box 18300, Greensboro, NC 27419.

**EXECUTIVE SUMMARY:**

A non-guideline study (MRID 46364518) was conducted to compare plasma kinetic data for Gramoxone 200 G/L SL formulation (CTL ref. no. Y00061, purity 20% assumed) in dogs administered the compound (44 mg Gramoxone/kg, equivalent to 8 mg paraquat ion/kg) via gelatin capsule or by gavage. These data were obtained from a series of studies conducted at Central Toxicology Laboratory over a period of several years. Specifically, the studies provided data for 12 dogs administered the test article via gelatin capsule and seven dogs dosed by gavage.

At the dose tested, emesis was the only treatment-related effect in the dogs. Emesis, an expected response, occurred as early as 16 minutes post dose and generally ceased several hours post dose. Paraquat ion profiles (concentration-time data and AUC estimates) were similar in dogs administered Garmoxone (44 mg/kg, equivalent to 8 mg paraquat ion) via gelatin capsule or by gavage. Peak plasma concentrations of 3-4 µg/ml were achieved at one hour post dose. The paraquat ion was almost completely cleared at 24 hours post dose in both groups. The variability in plasma concentration-time data could be attributed to individual variability among the limited number of dogs in each experimental group. AUC values over 24 hours were approximately 16 and 15 µg/ml-hr, respectively, for the gelatin capsule and gavage administrations.

This study (MRID 46364518) on the toxicity and plasma kinetics of Gramoxone 200 G/L SL formulation in dogs is classified **Acceptable/Non-Guideline** and does not satisfy the 85-1 Guideline Requirement for a metabolism study [OPPTS 870.7485, OECD 417]. The report is principally an analysis of plasma profile data from a series of earlier studies and was not designed or submitted as a guideline study.

**COMPLIANCE:** Signed GLP, Data Confidentiality Claim, and Quality Assurance statements were provided in the study report.

## I. MATERIALS AND METHODS:

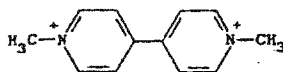
### A. MATERIALS:

#### 1. Test compound: Gramoxone 200 GL SL formulation

<u>Radiolabelled test material:</u>	[ <sup>3</sup> H]-paraquat for radioimmunoassay; no details provided
Radiochemical purity	NA
Specific Activity	NA
Lot/Batch #:	NA

#### Non-Radiolabelled test material:

Description:	dark green liquid
Lot/Batch #:	CTL ref. no. Y00061
Purity:	20% (assumed; emetic content not stated)
Contaminants:	none noted
CAS # of TGAI:	4685-14-7
Structure:	



#### 2. Vehicle and/or positive control: None noted.

#### 3. Test animals:

Species:	dog; male
Strain:	beagle
Age/weight at study initiation:	16-24 weeks; 13.6-17.8 kg
Source:	Dog Animal Breeding Unit, Alderley Park, Macclesfield, UK
Housing:	housed individually in indoor pens with a separate exercise area.
Diet:	400 g Laboratory Diet A (Special Diet Services Ltd., Stepfield, Witham, Essex, UK) daily except for 24-hr fasting prior to treatment
Water:	tap water <i>ad libitum</i> except for 1 hr pre-dose and 1 hr post dose
Environmental conditions:	<b>Temperature:</b> 20°C nominal <b>Humidity:</b> not controlled <b>Air changes:</b> 15/hr <b>Photoperiod:</b> 11 hrs light/13 hrs dark
Acclimation period:	at least 1 week

#### 4. Dose preparations: Paraquat (Gramoxone 200 g/l formulation) required to achieve a target dose of 8 mg paraquat ion/kg was administered either in a gelatine capsule or by gavage.

The amount of test material was calculated as:

$$\text{mg formulation/kg} = \frac{(\text{dose volume [0.04 ml]} \times \text{specific gravity [1.1]}) \times 1000}{\text{weight (kg)}}$$

## B. STUDY DESIGN AND METHODS:

1. **Group arrangements:** The reviewed study (MRID 46364518) analyzed data extracted from previous studies; the experimental groups are shown in Table 1. Plasma samples collected at 24 hours post dose during these studies were analyzed for paraquat and plasma kinetic parameters determined. The dogs in the studies were randomly allocated to the treatment groups although several experiments utilized the same dogs. Feed consumption was recorded (mean g feed/dog/day) 24 hours post dose and throughout the study period. Feed consumption was calculated at weekly intervals and expressed as g feed/day.

Table 1. Experimental sets for toxicokinetic study in male beagle dogs given Paraquat (Gramoxone 200 G/L SL Formulation)			
Study No./Date <sup>a</sup>	No. of dogs	Dose <sup>b</sup> (mg paraquat ion/kg)	Comments
XD1236 (1-28-88)	3	8	gelatin capsule (* same dogs)
XD1328 (1-28-88)	3	8	gelatin capsule
XD1328 (3-14-89)	3	8	gelatin capsule
XD1328 (1-16-91)	3	8	gelatin capsule (* same dogs)
XD1236 (6-23-87)	3	8	gavage (* same dogs)
XD1328 (1-28-88)	4	8	gavage

<sup>a</sup> Date of dosing

<sup>b</sup> Gramoxone dose was 44 mg/kg which provided the target 8 mg paraquat ion/kg  
Data taken from Appendix A, p. 31, MRID 46364518.

All of the dogs were observed continuously for several hours post dose and at least twice daily for clinical signs or behavioral abnormalities. The timing and qualitative descriptions of vomiting and feces were recorded. All dogs were given full clinical examinations (including cardiac and pulmonary auscultation) prior to each dose and prior to termination.

## 2. Dosing and sample collection/preparation/analysis:

Blood samples (from the jugular vein) were collected in heparinized tubes prior to dosing, at 15 and 30 minutes post dose, and at 1, 2, 4, 7, 12, and 24 hours after dosing. Plasma was separated by centrifugation.

## 3. Analytical techniques:

### **Radioimmunoassay:**

Plasma paraquat was determined by radioimmunoassay. For this procedure, the test samples and a series of standards were buffered with [<sup>3</sup>H]-paraquat. Antiserum-containing antibodies developed against a derivative of monoquat) was added. A short (non-specified) incubation period allowed free paraquat ion to be adsorbed onto bovine serum albumin-charcoal

suspension. Following centrifugation, the antibody-[<sup>3</sup>H]-paraquat ion complex in the supernatant was analyzed by LSC and the paraquat quantified by comparison to standards. Plasma profiles of paraquat ion over 24 hours were determined for each dog and mean±SD calculated

4. **Storage stability:**

Recommended storage conditions were provided but no other data were available regarding stability. Dosing formulations were prepared immediately prior to administration.

5. **Calculations/ statistical analysis:**

Dose calculations and quantitative information regarding dose formulations were provided. Data were expressed as mean ± standard deviation. AUC values were calculated using the linear trapezoidal rule from pooled data. AUC<sub>0-1</sub>, AUC<sub>0-4</sub>, and AUC<sub>0-24</sub> were calculated.

**II. RESULTS:**

**A. CLINICAL OBSERVATIONS**

There were no signs of toxicity in any of the dogs in any studies following oral administration of 44 mg Gramoxone/kg.

**1. Emesis**

The most notable finding was emesis which occurred as early as 16 minutes post dose. The dogs reportedly had no long-lasting effects (e.g., retching, additional vomiting, decreased feed consumption).

**2. Bodyweight**

There were no significant effects on body weight beyond a slight decrease that could be associated with the fasting prior to dosing.

**3. Food consumption**

Feed consumption was not significantly affected by the treatment. Daily feed consumption ranged from 230-350 g/dog/day.

**4. Clinical chemistry**

There were no treatment-related effects on clinical chemistry parameters.

**B. TOXICOKINETICS**

Concentration-time course data for plasma paraquat ion are shown in Table 2. The plasma profiles were similar between the gelatine capsule and gavage administration groups. The observed minimal variability could be attributed to individual variability among the dogs in each group. Peak plasma concentrations (~3-4 µg/ml) of the paraquat ion occurred at 1 hour for both dosing techniques and clearance was nearly complete at 24 hours after dosing although still measurable.

Table 2. Plasma paraquat ion concentration-time data ( $\mu\text{g/ml}$ ) in dogs following a single oral dose of 44 mg Gramoxone/kg (8 mg paraquat ion/kg) <sup>a</sup>		
Time (hrs)	Administration	
	Gelatine capsule	Gavage
Pre-dose	0.00 $\pm$ 0.00	0.00 $\pm$ 0.00
0.25	1.38 $\pm$ 1.26	1.59 $\pm$ 0.93
0.5	2.34 $\pm$ 1.26	2.81 $\pm$ 0.55
1	3.94 $\pm$ 0.88	3.46 $\pm$ 0.49
2	3.00 $\pm$ 0.73	2.27 $\pm$ 0.53
4	1.38 $\pm$ 0.42	1.28 $\pm$ 0.61
7	0.45 $\pm$ 0.31	0.34 $\pm$ 0.08
12	0.20 $\pm$ 0.15	0.17 $\pm$ 0.06
24	0.07 $\pm$ 0.08	0.19 $\pm$ 0.17

<sup>a</sup> Mean $\pm$ SD for 12 dogs (gelatine capsule experiments) or 7 dogs (gavage experiments); see Table 1 for experimental groups.

Data taken from Appendix B, p. 32, MRID 46364518.

Plasma AUC values for the dogs in the various experiments analyzed are shown in Table 3. Consistent with the plasma profiles, the AUC values were similar for the gelatin capsule and gavage dosing.

Table 3. Plasma paraquat ion AUC data ( $\mu\text{g/ml}\cdot\text{hr}$ ) in dogs following a single oral dose of 44 mg Gramoxone/kg (8 mg paraquat ion/kg) <sup>a</sup>		
AUC	Administration	
	Gelatine capsule	Gavage
AUC <sub>0-1 hrs</sub>	2.21 $\pm$ 0.22	2.32 $\pm$ 0.16
AUC <sub>0-4 hrs</sub>	10.06 $\pm$ 0.49	8.73 $\pm$ 0.43
AUC <sub>0-24 hrs</sub>	15.98 $\pm$ 0.89	14.63 $\pm$ 1.00

<sup>a</sup> Mean $\pm$ SD for 12 dogs (gelatine capsule experiments) or 7 dogs (gavage experiments); see Table 1 for experimental groups.

Data taken from Table 3, p. 30, MRID 46364518

### III. DISCUSSION AND CONCLUSIONS

#### A. INVESTIGATORS' CONCLUSIONS

The investigators concluded that analysis of paraquat ion profiles (concentration-time data and AUC estimates) were similar in dogs administered Gramoxone (44 mg/kg, equivalent to 8 mg paraquat ion) via gelatin capsule or by gavage. Peak plasma concentrations of 3-4 µg/ml were achieved at one hour post dose. The paraquat ion was almost completely cleared at 24 hours post dose in both groups. At the dose tested, emesis was the only treatment-related effect in the dogs. Emesis, an expected response, occurred as early as 16 minutes post dose and generally ceased several hours post dose.

#### B. REVIEWER COMMENTS:

A non-guideline study (MRID 46364518) was conducted to compare plasma kinetic data for Gramoxone 200 G/L SL formulation (CTL ref. no. Y00061, purity 20% assumed) in dogs administered the compound (44 mg Gramoxone/kg, equivalent to 8 mg paraquat ion/kg) via gelatin capsule or by gavage. These data were obtained from a series of studies conducted at Central Toxicology Laboratory over a period of several years. Specifically, the studies provided data for 12 dogs administered the test article via gelatin capsule and 7 dogs dosed by gavage.

The report provided a summary of clinical effects observed for dogs receiving a single dose Gramoxone 200 GL SL formulation by gavage via gelatine capsule. Specifically, the study utilized data from previously conducted studies to compare plasma profiles for paraquat ion between the two dosing techniques. The data clearly showed peak plasma concentrations of 3-4 µg paraquat ion/ml were achieved at one hour following dosing regardless of the administration method and that similar AUC values were attained for both groups. The experiments upon which this comparative analysis was based utilized only 3-4 dogs each and some experiments utilized the same dogs, although they were performed at 1-2 year intervals. The variability in plasma concentration-time data could be attributed to individual variability among the limited number of dogs in each experimental group. Although clearly not designed or submitted as a guideline study, the report achieved its purpose of comparing plasm profile data for the two dose methods.

This study (MRID 46364518) on the toxicity and plasma kinetics of Gramoxone 200 G/L SL formulation in dogs is classified **Acceptable/Non-Guideline** and does not satisfy the 85-1 Guideline Requirement for a metabolism study [OPPTS 870.7485, OECD 417]. The report is principally an analysis of plasma profile data from a series of earlier studies and was not designed or submitted as a guideline study.

#### C. STUDY DEFICIENCIES

Purity is "assumed" to be 20%. The investigators noted that compound purity was the responsibility of the study sponsor (Syngenta Crop Protection) and provided no additional information. This purity, however, is similar to that used in other paraquat studies submitted by this registrant. This was not considered to be a basis for study rejection. Humidity was not controlled but assuming it was within normal ranges would not have adversely affected the study outcome.

6-02





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

November 29, 2004

MEMORANDUM

Subject: Name of Pesticide Product: Gramoxone Inteon  
EPA File Symbol: 100-RERT  
DP Barcode: D309349  
Decision No.: 348898  
PC Code: 061601 Paraquat dichloride

From: Breann Hanson, Toxicologist  
Technical Review Branch  
Registration Division (7505C)

*B. Hanson*  
*JCH*

To: Hope Johnson, RM Team 25  
Herbicide Branch  
Registration Division (7505C)

Applicant: Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419

FORMULATION FROM LABEL:

<u>Active Ingredient:</u>			<u>% by wt.</u>
061601	Paraquat dichloride	CAS No. 1910-42-5	30.1%
<u>Inert Ingredients:</u>			<u>69.9%</u>
Total:			100.0%

AUG 17 2005

*K*

**ACTION REQUESTED:**

The Product Manager requests:

"The registrant, Syngenta, has submitted an application for a new formulation of paraquat dichloride. The formulation is designed to gel if ingested, thus minimizing entry to intestine. They have submitted the five pack of acute tox (inhalation study is cited, and i have blown back a copy for your review), along with toxicokinetic study in the dog to show how the gelling effect helps lessen the toxicity. Please review these studies for acceptance. This product is a me-too with 100-1009, so please review to see if this product is toxicologically substantially similar to 100-1009 cyclone. I have included MRID's 46364503-46364518, along with the CSF, the application letter, the data matrix, the label, and the me-too label and csf for comparison. NOTE: MRID's 46364511-46364518 are for the 200 g/l formulation that will be used in Mexico. The 240 g/l formulation will be used here in the U.S. However, Jim Jones agreed to review the Mexican formulation studies for Mexico under the NAFTA Agreement. For further information, contact Luis Suguiyama 305-6027..."

**BACKGROUND:** Syngenta Crop Protection, Inc. has submitted 2 sets of 5 pack acute toxicity studies in support of registration for Gramoxone Inteon, EPA File Symbol: 100-RERT. The submission included a CSF, label, application, data matrix and letter from the sponsor. The studies were conducted at SafePharm Laboratories Ltd., Derbyshire, UK (MRID numbers 463645-03 through -06), Product Safety Laboratories, Dayton, NJ (MRID number 463645-07), or Central Toxicology Laboratory, Cheshire, UK (MRID numbers 463645-12 through -16). Two of the submitted studies (MRIDs 463645-08 and -09) will not be reviewed by TRB due to being extraneous to this registration. The 4 toxicokinetic studies have been forwarded to HED. No acute inhalation toxicity study was submitted due to the fact that the company has agreed to take a category I classification for the inhalation route.

**RECOMMENDATIONS:** The studies have been reviewed and are classified as acceptable. Because actual studies have been submitted no determination of similarity with 100-1009 has been made. The acute toxicity profile for the 240 g/L Gramoxone Inteon formulation, EPA File Symbol: 100-RERT, is:

Acute oral toxicity	II	Acceptable	MRID 46364503
Acute dermal toxicity	II <i>III</i>	Acceptable	MRID 46364514*
Acute inhalation toxicity	I	Cited	MRID 00046105
Primary eye irritation	II	Acceptable	MRID 46364506
Primary skin irritation	III	Acceptable	MRID 46364504
Dermal sensitization	Negative	Acceptable	MRID 46364507

\* although a study (MRID 46364505) was submitted for the 240 g/L formulation in which the category for acute dermal toxicity is III, the study sent in for the 200 g/L formulation has a more restrictive category II for dermal toxicity. It is TRB's recommendation that this more restrictive

study be used to register the 240 g/L formulation. The signal word remains DANGER.

**LABELING:** Based on the toxicity profile above, the following are the precautionary and first aid statements for this product as obtained from the Label Review System:

**PRODUCT ID #:** 000100-01217

**PRODUCT NAME:** Gramoxone Inteon

### PRECAUTIONARY STATEMENTS

#### Hazards to Humans and Domestic Animals:

**SIGNAL WORD:** DANGER

**POISON** ☠

#### SPANISH SIGNAL WORD: PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

Restricted Use Pesticide due to toxicity categories. For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Fatal if inhaled. Do not breathe spray mist. May be fatal if swallowed or absorbed through skin. Causes substantial but temporary eye injury. Do not get in eyes, on skin, or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Wear coveralls worn over short-sleeved shirt and short pants, socks, chemical resistant footwear, and chemical-resistant gloves (such as Natural Rubber, Selection Category A).

For handling activities, use a non-powered, NIOSH-approved air purifying cartridge respirator equipped with an organic-vapor (OV) removing cartridge plus an N-, R- or P-series filter, OR a non-powered air purifying canister-type respirator equipped with an organic vapor canister that uses an N-, R-, or P-series air-purifying filter.

#### USER SAFETY RECOMMENDATIONS:

Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

#### First Aid:

If inhaled:

- Move the person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for further treatment advice.

If swallowed:

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to by a poison control center or doctor.

-Do not give anything to an unconscious person.

If in eyes:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
- Call a poison control center or doctor for treatment advice.

If on skin:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN: Note to PM/CRM/Registrant: The proposed label should contain a Note to Physician which addresses the category I Acute Inhalation Toxicity. The following statements are suggested types of information that may be included, if applicable:

- technical information on symptomatology;
- use of supportive treatments to maintain life functions;
- medicine that will counteract the specific physiological effects of the pesticide;
- company telephone number to specific medical personnel who can provide specialized medical advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-xxx-xxxx for emergency medical treatment information.

The acute toxicity profile for the 200 g/L Gramoxone Inteon formulation, EPA File Symbol: 100-RERT, is:

Acute oral toxicity	III	Acceptable	MRID 46364515
Acute dermal toxicity	II	Acceptable	MRID 46364514
Acute inhalation toxicity	I	Cited	MRID 00046105
Primary eye irritation	II	Acceptable	MRID 46364512
Primary skin irritation	IV	Acceptable	MRID 46364513
Dermal sensitization	Negative	Acceptable	MRID 46364516

**LABELING:** Based on the toxicity profile above, the following are the precautionary and first aid statements for this product as obtained from the Label Review System:

**PRODUCT ID #:** 000100-01217

**PRODUCT NAME:** Gramoxone Inteon

#### PRECAUTIONARY STATEMENTS

**Hazards to Humans and Domestic Animals:**

**SIGNAL WORD: DANGER**

**POISON** ☠

**SPANISH SIGNAL WORD: PELIGRO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

Restricted Use Pesticide due to toxicity categories. For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Fatal if inhaled. Do not breathe spray mist. May be fatal if absorbed through skin. Causes substantial but temporary eye injury. Harmful if swallowed. Do not get in eyes, on skin, or on clothing. Wear coveralls worn over long-sleeved shirt and long pants, socks, chemical-resistant footwear, and chemical-resistant gloves (such as Natural Rubber, Selection Category A). Wear protective eyewear (goggles, face shield, or safety glasses).

For handling activities, use a non-powered, NIOSH-approved air purifying cartridge respirator equipped with an organic-vapor (OV) removing cartridge plus an N-, R- or P-series filter, OR a non-powered air purifying canister-type respirator equipped with an organic vapor canister that uses an N-, R-, or P-series air-purifying filter.

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. When mixing and loading wear a chemical resistant apron. For overhead exposure wear chemical-resistant headgear. When cleaning equipment wear a chemical-resistant apron.

**USER SAFETY RECOMMENDATIONS:**

Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

**First Aid:**

**If inhaled:**

- Move the person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for further treatment advice.

**If on skin:**

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

**If in eyes:**

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
- Call a poison control center or doctor for treatment advice.

**If swallowed:**

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to by a poison control center or doctor.
- Do not give anything to an unconscious person.

**NOTE TO PHYSICIAN:** Note to PM/CRM/Registrant: The proposed label should contain a Note to Physician which addresses the category I Acute Inhalation Toxicity. The following statements are suggested types of information that may be included, if applicable:

- technical information on symptomatology;
- use of supportive treatments to maintain life functions;
- medicine that will counteract the specific physiological effects of the pesticide;
- company telephone number to specific medical personnel who can provide specialized medical advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-xxx-xxxx for emergency medical treatment information.

**Reviewer:** Breann Hanson  
**Risk Manager (EPA):** Hope Johnson, RM 25

**Date:** Nov. 29, 2004

**STUDY TYPE:** Acute Oral Toxicity - SD rat; OPPTS 870.1100; OECD 425

**TEST MATERIAL:** Paraquat 240 g/l SL Formulation (A7813K) (Paraquat: 22.3%, Batch Reference: J4267/75-2; green liquid)

**CITATION:** Pooles, A. (2004) Paraquat 240 g/l SL Formulation (A7813K): Acute Oral Toxicity in the Rat. Laboratory Study Identification: 006/438. Unpublished study prepared by SafePharm Laboratories Ltd. August 3, 2004. MRID 46364503.

**SPONSOR:** Syngenta Crop Protection, Inc., P.O. Box 18300, Greensboro, NC 27419

**EXECUTIVE SUMMARY:** In an acute oral toxicity study (MRID 46364503), 6 female Sprague-Dawley rats (Age: 8-12 weeks, Weight: 203-234 g; Source: Charles River (UK) Ltd., Kent, UK) were given a single oral dose of Paraquat 240 g/l SL Formulation (A7813K) (Paraquat: 22.3%, Batch Reference: J4267/75-2; green liquid) by oral gavage. The study was initiated at a dose of 175 mg/kg in one female, and due to survival of that animal an additional 5 females were dosed at either 175 or 550 mg/kg following the up-and-down procedure. Individual animal body weights were recorded prior to test substance administration and again on days 7 and 14, or at death. Clinical checks for mortality and signs of toxicity were made four times post-dosing on initial study day and at least once daily for 14 days. All animals were necropsied on study day 14.

The 3 animals dosed at 175 mg/kg survived, gained weight and appeared healthy throughout the study. No gross internal findings were observed at necropsy.

The 3 animals dosed at 550 mg/kg died by study day 4. One animal was killed *in extremis* on study day 3. Signs of toxicity noted in 2/3 animals included hunched posture, piloerection and laboured respiration and/or decreased respiratory rate. Lethargy and ataxia were also noted in one animal, as well as emaciation. At necropsy, animals that died during the study were noted as having abnormally red lungs, dark liver and dark kidneys. No gross internal findings were observed for the animal killed *in extremis*.

Oral LD<sub>50</sub> Females = 310 mg/kg (95% C.I.= 175-550 mg/kg)

Based on the LD<sub>50</sub> in female rats, Paraquat 240 g/l SL Formulation (A7813K) is classified as EPA Toxicity Category II.

This acute oral study is classified as acceptable. It does satisfy the guideline requirement for an acute oral study (OPPTS 870.1100; OECD 425) in the rat.

**COMPLIANCE:** Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

## RESULTS and DISCUSSION:

Individual animals were dosed as follows:

### Main Test

Dosing Sequence	Animal No.	Sex	Dose level (mg/kg)	Sort-Term Outcome	Long-Term Outcome
1	1-0	F	175	S	S
2	2-0		550	D	D
3	3-0		175	S	S
4	4-0		550	D	D
5	5-0		175	S	S
6	6-0		550	D	D

S = survival    D = death

AOT425statpgm (Version: 1.0) Test Results and Recommendations  
Acute Oral Toxicity (OECD Test Guideline 425) Statistical Program  
Date/Time: Tuesday, November 23, 2004, 12:55:41 PM  
Data file name: work.dat  
Last modified: 11/23/2004 12:55:41 PM

Test/Substance: paraquat  
Test type: Main Test  
Limit dose (mg/kg): 5000  
Assumed LD50 (mg/kg): Default  
Assumed sigma (mg/kg): 0.5

Recommended dose progression: 5000, 1750, 550, 175, 55, 17.5, 5.5, 1.75



DATA:

Test Seq.	Animal ID	Dose (mg/kg)	Short-term Result	Long-term Result
1	1-0	175	O	O
2	2-0	550	X	X
3	3-0	175	O	O
4	4-0	550	X	X
5	5-0	175	O	O
6	6-0	550	X	X

(X = Died, O = Survived)

Dose Recommendation: The main test is complete.  
Stopping criteria met: 5 reversals in 6 tests. LR criterion.

SUMMARY OF LONG-TERM RESULTS:

Dose	O	X	Total
175	3	0	3
550	0	3	3
All Doses	3	3	6

Statistical Estimate based on long term outcomes:  
Estimated LD50 = 310.2 (Based on an assumed sigma of 0.5).  
Approximate 95% confidence interval is 175 to 550.

A. **Mortality** - As noted in table.

B. **Clinical observations** - The 3 animals dosed at 175 mg/kg survived, gained weight and appeared healthy throughout the study.

The 3 animals dosed at 550 mg/kg died by study day 4. One animal was killed *in extremis* on study day 3. Signs of toxicity noted in 2/3 animals included hunched posture, piloerection and laboured respiration and/or decreased respiratory rate. Lethargy and ataxia were also noted in one animal, as well as emaciation.

C. **Gross Necropsy** - No gross internal findings were observed at necropsy for the animals surviving the study or the one animal killed *in extremis*.

Findings at necropsy for the remaining animals included abnormally red lungs, dark liver and dark kidneys.

D. **Reviewer's Conclusions**: Agree with study author.

**Reviewer:** Breann Hanson  
**Risk Manager (EPA):** Hope Johnson, RM 25

**Date:** Nov. 29, 2004

**STUDY TYPE:** Acute Dermal Toxicity - SD Rat; OPPTS 870.1200; OECD 402

**TEST MATERIAL:** Paraquat 240 g/l SL Formulation (A7813K) (Paraquat: 22.3%, Batch Reference: J4267/75-2; green liquid)

**CITATION:** Pooles, A. (2004) Paraquat 240 g/l SL Formulation (A7813K): Acute Dermal Toxicity (Limit Test) in the Rat. Laboratory Study Identification: 006/439. Unpublished study prepared by SafePharm Laboratories Ltd. August 3, 2004. MRID 46364505.

**SPONSOR:** Syngenta Crop Protection, Inc., P.O. Box 18300, Greensboro, NC 27419

**EXECUTIVE SUMMARY:** In an acute dermal toxicity study (MRID 46364505), 5/sex of Sprague-Dawley rats (Age: 8-12 weeks; Weight: 238-268 g males, 208-224 g females; Source: Charles River (UK) Ltd., Kent, UK) were dermally exposed to a single application of Paraquat 240 g/l SL Formulation (A7813K) (Paraquat: 22.3%, Batch Reference: J4267/75-2; green liquid) at 2,000 mg/kg. At first only 2 animals were treated (1 male, 1 female). Afterwards an additional 8 animals were treated. The test material was applied evenly to each exposure area, approximately 10% of the total BSA, covered with gauze and then semi-occluded with self-adhesive bandages for 24 hours. Individual animal body weights were recorded prior to test substance administration and again on days 7 and 14, or after death. Clinical checks for mortality and signs of toxicity were made four times post-application on initial study day and at least once daily for 14 days. Animals were also graded for dermal irritation (Draize) after removal of the dressings and once daily for 14 days. All animals were necropsied on study day 14.

2/5 females were killed *in extremis* during the study. All remaining animals survived the study. Survivors gained weight throughout the study, except for 2 females which lost weight during the first week of the study. Signs of toxicity noted in females included hunched posture, lethargy, ataxia, decreased respiratory rate, laboured or increased respiration, dehydration, emaciation, pallor of the extremities and red/brown staining around the snout and eyes. Females recovered from these symptoms by study day 12. Males appeared normal throughout the study. Dermal irritation noted during the study included well-defined erythema, crust formation and hardened light brown-coloured scabs, small superficial scattered scabs and glossy skin. At necropsy, abnormally red lungs were noted in one of the females killed *in extremis*. No gross internal findings were observed at necropsy for the remaining animals.

Dermal LD<sub>50</sub> Males => 2,000 mg/kg  
Females => 2,000 mg/kg  
Combined => 2,000 mg/kg

Based on the dermal LD<sub>50</sub> of 2,000 mg/kg, Paraquat 240 g/l SL Formulation (A7813K) is

classified as EPA Toxicity Category III.

This acute dermal study is classified acceptable. It does satisfy the guideline requirement for an acute dermal study (OPPTS 870.1200; OECD 402) in the rat.

**COMPLIANCE:** Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

**RESULTS and DISCUSSION:**

Dose(mg/kg)	Mortality/Number Tested		
	Males	Females	Combined
2000	0/5	2/5	2/10

**A. Mortality** - As noted in table.

**B. Clinical observations** - 2/5 females were killed *in extremis* during the study. All remaining animals survived the study. Survivors gained weight throughout the study, except for 2 females which lost weight during the first week of the study. Signs of toxicity noted in females included hunched posture, lethargy, ataxia, decreased respiratory rate, laboured or increased respiration, dehydration, emaciation, pallor of the extremities and red/brown staining around the snout and eyes. Females recovered from these symptoms by study day 12. Males appeared normal throughout the study. Dermal irritation noted during the study included well-defined erythema, crust formation and hardened light brown-coloured scabs, small superficial scattered scabs and glossy skin.

**C. Gross Necropsy** - At necropsy, abnormally red lungs were noted in one of the females killed *in extremis*. No gross internal findings were observed at necropsy for the remaining animals.

**D. Reviewer's Conclusions:** Agree with study author.

**Reviewer:** Breann Hanson  
**Risk Manager (EPA):** Hope Johnson, RM 25

**Date:** Nov. 29, 2004

**STUDY TYPE:** Primary Eye Irritation - NZW Rabbit, OPPTS 870.2400; OECD 405

**TEST MATERIAL:** Paraquat 240 g/l SL Formulation (A7813K) (Paraquat: 22.3%, Batch Reference: J4267/75-2; green liquid)

**CITATION:** Pooles, A. (2004) Paraquat 240 g/l SL Formulation (A7813K): Acute Eye Irritation in The Rabbits. Laboratory Study Identification: 006/407. Unpublished study prepared by SafePharm Laboratories Ltd. July 14, 2004. MRID 46364506.

**SPONSOR:** Syngenta Crop Protection, Inc., P.O. Box 18300, Greensboro, NC 27419

**EXECUTIVE SUMMARY:** In a primary eye irritation study (MRID 46364506), 0.1 mL of undiluted Paraquat 240 g/l SL Formulation (A7813K) (Paraquat: 22.3%, Batch Reference: J4267/75-2; green liquid) was instilled into the conjunctival sac of the right eye of 3 male young adult New Zealand albino rabbits (Source: David Percival Ltd., Cheshire, UK). The untreated left eye served as a control. At first only one animal was treated and an assessment of the initial pain reaction was made. The two remaining animals were given one drop of local anaesthetic into both eyes prior to instillation. Animals were then observed at 1, 24, 48, 72 hours and on days 7, 10, 14, 17, 21 and for two treated eyes on days 24 and 28, post-instillation. Irritation was scored according to Draize.

No corneal opacity or iritis was noted at any point during the study. One hour after instillation 3/3 eyes exhibited conjunctivitis redness, chemosis and discharge (scores 1-2). Positive effects were noted in 2/3 eyes through study day 10. 1 eye experienced positive discharge (score 2) through study day 24. 1 treated eye exhibited an area of haemorrhage over the nictitating membrane at 24-hours. Haemorrhaging was noted in all treated eyes at 48 and 72-hours. Fur loss around the treated eye was noted in 3/3 treated eyes on study days 10, 14 and 17, with this loss persisting in one eye to the 21-day observation.

The test substance is mildly irritating. In this study, Paraquat 240 g/l SL Formulation (A7813K) is classified as EPA Toxicity Category II.

This study is classified as acceptable. It does satisfy the guideline requirement for a primary eye irritation study (OPPTS 870.2400; OECD 405) in the rabbit.

**COMPLIANCE:** Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

## RESULTS AND DISCUSSION:

Observations	Number "positive"/number tested										
	Hours				Days						
	1	24	48	72	7	10	14	17	21	24	28
Corneal Opacity	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3
Iritis	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3
Conjunctivae											
Redness*	3/3	3/3	3/3	3/3	3/3	1/3	0/3	0/3	0/3	0/3	0/3
Chemosis*	1/3	1/3	2/3	1/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3
Discharge*	0/3	3/3	3/3	3/3	3/3	2/3	1/3	1/3	1/3	1/3	0/3

\*Score of 2 or more required to be considered "positive"

**A. Observations** - No corneal opacity or iritis was noted at any point during the study. One hour after instillation 3/3 eyes exhibited conjunctivitis redness, chemosis and discharge (scores 1-2). Positive effects were noted in 2/3 eyes through study day 10. 1 eye experienced positive discharge (score 2) through study day 24. 1 treated eye exhibited an area of haemorrhage over the nictitating membrane at 24-hours. Haemorrhaging was noted in all treated eyes at 48 and 72-hours. Fur loss around the treated eye was noted in 3/3 treated eyes on study days 10, 14 and 17, with this loss persisting in one eye to the 21-day observation.

**B. Reviewer's Conclusions:** Agree with the study author.

**Reviewer:** Breann Hanson  
**Risk Manager (EPA):** Hope Johnson, RM 25

**Date:** Nov. 29, 2004

**STUDY TYPE:** Primary Dermal Irritation - NZW Rabbit; OPPTS 870.2500; OECD 404

**TEST MATERIAL:** Paraquat 240 g/l SL Formulation (A7813K) (Paraquat: 22.3%, Batch Reference: J4267/75-2; green liquid)

**CITATION:** Pooles, A. (2004) Paraquat 240 g/l SL Formulation (A7813K): Acute Dermal Irritation In The Rabbit. Laboratory Study Identification: 006/406. Unpublished study prepared by SafePharm Laboratories Ltd. July 13, 2004. MRID 46364504.

**SPONSOR:** Syngenta Crop Protection, Inc., P.O. Box 18300, Greensboro, NC 27419

**EXECUTIVE SUMMARY:** In a primary dermal irritation study (MRID 46364504), 3 young adult New Zealand albino rabbits (1 male, 2 females; Source: David Percival Ltd., Cheshire, UK) were dermally exposed to 0.5 mL of undiluted Paraquat 240 g/l SL Formulation (A7813K) (Paraquat: 22.3%, Batch Reference: J4267/75-2; green liquid). Initially only one animal was treated and after consideration of the skin reactions in this animal two additional animals were treated. The test substance was introduced under a gauze patch, placed on the dose site on each animal and then secured with a strip of surgical adhesive tape for 4 hours. Animals were then observed for up to 28 days, to assess the reversibility of skin reactions.. Dermal irritation was scored according to the Draize system at 1, 24, 48, 72 hours post-patch removal for all animals and up through study days 7, 10, 14, 17, 21, 24 and 28.

One hour post-patch removal well-defined erythema (score 2) and very slight oedema (score 1) was noted at 2/3 treated sites. This irritation persisted at 72 hours for both treated sites, persisting to the 7-day observation in one animal. Very slight erythema (score 1) was noted at the other treated site from 24-hours to study day 14. One animal had extreme weight loss at the 72-hour observation and was killed for humane reasons. One skin site appeared normal at the 21-day observation while the other site appeared normal on study day 28.

Increased salivation, loss of skin elasticity, crust formation, reduced regrowth of fur, loss of skin flexibility and slight desquamation were also noted during the study.

In this study, the formulation is moderately irritating to the skin. Paraquat 240 g/l SL Formulation (A7813K) is classified as EPA Toxicity Category III.

This study is classified as acceptable. It does satisfy the guideline requirement for a primary dermal irritation study (OPPTS 870.2500; OECD 404) in the rabbit.

**COMPLIANCE:** Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

# RESULTS and DISCUSSION:

## INDIVIDUAL SKIN IRRITATION SCORES

### ERYTHEMA/EDEMA

ERYTHEMA/EDEMA												
Animal Number	Sex	Hours				Days						
		1	24	48	72	7	10	14	17	21	24	28
91	M	0/0	1/0	1/0	1/0	1/0	1/0	1/0	0/0	0/0	0/0	0/0
30 <sup>a</sup>	F	2/1	2/1	2/1	2/1	-	-	-	-	-	-	-
31		2/1	2/1	2/2	2/2	2/2	- <sup>b</sup>	0/0	0/0	0/0	0/0	0/0
Severity of Irritation - Mean Score		1.3/0.6	1.6/0.6	1.6/1.0	1.6/1.0	1.5/1.0	1/0	0.5/0	0/0	0/0	0/0	0/0

<sup>a</sup> Animal 30 was killed for humane reasons after the 72-hour observation period.

<sup>b</sup> A reading for erythema and oedema could not be made to crust formation.

**A. Observations** - One hour post-patch removal well-defined erythema (score 2) and very slight oedema (score 1) was noted at 2/3 treated sites. This irritation persisted at 72 hours for both treated sites, persisting to the 7-day observation in one animal. Very slight erythema (score 1) was noted at the other treated site from 24-hours to study day 14. One animal had extreme weight loss at the 72-hour observation and was killed for humane reasons. One skin site appeared normal at the 21-day observation while the other site appeared normal on study day 28.

**B. Results** - Test substance is moderately irritating to the skin.

**C. Reviewer's Conclusions** - Agree with study author.

Reviewer: Breann Hanson  
Risk Manager (EPA): Hope Johnson, RM 25

Date: Nov. 29, 2004

**STUDY TYPE:** Dermal Sensitization - Guinea Pig; OPPTS 870.2600; OECD 406

**TEST MATERIAL:** Paraquat (240 g/L) and PP796 (1.5 g/L) SL (A7813K) (Paraquat: 22.3% w/w, Batch Reference: J4267/75-2; clear green liquid)

**CITATION:** Merkel, D. (2004) Dermal Sensitization Study in Guinea Pigs (Buehler Method) with Paraquat (240 g/L) and PP796 (1.5 g/L) SL (A7813K). Laboratory Study Identification: 15409. Unpublished study prepared by Product Safety Laboratories. July 23, 2004. MRID 46364507.

**SPONSOR:** Syngenta Crop Protection, Inc., P.O. Box 18300, Greensboro, NC 27419

**EXECUTIVE SUMMARY:** In a dermal sensitization study (MRID 46364507) with Paraquat (240 g/L) and PP796 (1.5 g/L) SL (A7813K) (Paraquat: 22.3% w/w, Batch Reference: J4267/75-2; clear green liquid), 30 male young adult Hartley guinea pigs (Weight: 382-480 g males; Source: Elm Hill Breeding Labs, Chelmsford, MA) were tested using the Buehler method. Once a week for 3 weeks, 0.4 mL of a 10% w/w mixture of the test substance in distilled water was applied to the dose site of each animal using a lint patch and secured with surgical tape to 20 test animals. After 6 hours of exposure, the patches were removed. 24 and 48 hours after each induction the animals were scored for dermal irritation. Thirteen days after the last induction dose challenge doses of 0.2 mL of a 1% w/w mixture of the test substance in distilled water and a 0.3% w/w mixture were applied to the right side of the test animals and to a set of 10 naive control guinea pigs for 6 hours. Approximately 24 and 48 hours after challenge, the animals were graded for dermal irritation. The procedures were validated using alpha-Hexylcinnamaldehyde (HCA) as the positive control substance.

All animals survived and appeared healthy throughout the study. During the induction phase of the study, very faint to faint erythema (score 0.5-1) was noted for most of the treated sites. During the challenge phase, very faint erythema (score 0.5) was noted for 12/20 test sites treated with the 1% w/w mixture at the 24 hour reading. Irritation persisted at 5/20 to 48 hours. Naive controls treated with the 1% w/w mixture exhibited very faint erythema at 2/10 treated sites at the 24 hour reading. Irritation cleared from these sites by 48 hours. Very faint erythema was noted for 2/20 test sites treated with the 0.3% w/w mixture, with irritation clearing by 48 hours. In control animals, very faint erythema was noted for 2/10 treated sites, with irritation clearing by 48 hours.

Based on the results of this study, Paraquat (240 g/L) and PP796 (1.5 g/L) SL (A7813K) does not have to be labeled as a dermal sensitizer.

This study is classified as acceptable. It does satisfy the guideline requirement for a primary



dermal sensitization study (OPPTS 870.2600; OECD 406) in the Guinea pig .

**COMPLIANCE:** Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

## **I. PROCEDURE**

**A. Induction** - Once a week for 3 weeks, 0.4 mL of a 10% w/w mixture of the test substance in distilled water was applied to the dose site of each animal using a lint patch and secured with surgical tape to 20 test animals. After 6 hours of exposure, the patches were removed. 24 and 48 hours after each induction the animals were scored for dermal irritation.

**B. Challenge** - Thirteen days after the last induction dose challenge doses of 0.2 mL of a 1% w/w mixture of the test substance in distilled water and a 0.3% w/w mixture were applied to the right side of the test animals for 6 hours. Approximately 24 and 48 hours after challenge, the animals were graded for dermal irritation.

**C. Naive Controls** - A naive control group of 10 animals were tested with 0.2 mL of the 1% w/w and 0.3% w/w mixture at challenge only.

## **II. RESULTS and DISCUSSION:**

**A. Reactions and duration** - All animals survived and appeared healthy throughout the study. During the induction phase of the study, very faint to faint erythema (score 0.5-1) was noted for most of the treated sites. During the challenge phase, very faint erythema (score 0.5) was noted for 12/20 test sites treated with the 1% w/w mixture at the 24 hour reading. Irritation persisted at 5/20 to 48 hours. Naive controls treated with the 1% w/w mixture exhibited very faint erythema at 2/10 treated sites at the 24 hour reading. Irritation cleared from these sites by 48 hours. Very faint erythema was noted for 2/20 test sites treated with the 0.3% w/w mixture, with irritation clearing by 48 hours. In control animals, very faint erythema was noted for 2/10 treated sites, with irritation clearing by 48 hours.

**B. Positive control** - Results were appropriate with a HCA study to validate test procedures. The positive control study was completed July 2, 2004. This test was completed July 23, 2004.

**C. Reviewer's Conclusions:** Agree with study author.

**Reviewer:** Breann Hanson  
**Risk Manager (EPA):** Hope Johnson, RM 25

**Date:** Nov. 29, 2004

**STUDY TYPE:** Acute Oral Toxicity - Wistar rat; OPPTS 870.1100; OECD 425

**TEST MATERIAL:** Paraquat 200 g/l SL Formulation (A3879BU) (Paraquat: 18.416%, Batch Reference: J6470/11/1; clear green liquid)

**CITATION:** Johnson, I. (2003) Paraquat 200 g/l SL Formulation (A3879BU): Acute Oral Toxicity Study in the Rat - Up and Down Procedure. Laboratory Study Identification: AR7304. Unpublished study prepared by Central Toxicology Laboratory. July 15, 2003. MRID 46364515.

**SPONSOR:** Syngenta Crop Protection, Inc., P.O. Box 18300, Greensboro, NC 27419

**EXECUTIVE SUMMARY:** In an acute oral toxicity study (MRID 46364515), 7 female Wistar Alpk rats (Age: 8-12 weeks, Weight: 166-254 g; Source: Rodent Breeding Unit, Cheshire, UK) were given a single oral dose of Paraquat 200 g/l SL Formulation (A3879BU) (Paraquat: 18.416%, Batch Reference: J6470/11/1; clear green liquid) by oral gavage. The study was initiated at a dose of 175 mg/kg in one female, and due to survival of that animal an additional 6 females were dosed at either 175, 550 or 2,000 mg/kg following the up-and-down procedure. Individual animal body weights were recorded prior to test substance administration and again on days 8 and 15, or at death. Clinical checks for mortality and signs of toxicity were made immediately post-dosing and a further twice on initial study day and at least once daily for 15 days. All animals were necropsied on study day 15, or as soon as possible after death.

The 1 animal dosed at 175 mg/kg survived, gained weight and appeared healthy throughout the study. No gross internal findings were observed at necropsy.

1/3 animals dosed at 550 mg/kg were killed *in extremis* on study day 6. The surviving animals either gained weight or equalled their initial body weight by the end of the study. Slight toxicity was seen until study day 4 in one animal, while the other animal showed no signs of toxicity. No gross internal findings were observed at necropsy.

3/3 animals dosed at 2,000 mg/kg died during the study. One was found dead on study day 1, one was found dead on study day 2 and the remaining was killed *in extremis* on study day 2. At necropsy, findings included contents of the stomach and/or intestines stained blue, staining of the mouth and fluid stomach contents were noted.

Oral LD<sub>50</sub> Females = 550 mg/kg (95% C.I. = 186.5 to 1640)

Based on the LD<sub>50</sub> in female rats, Paraquat 200 g/l SL Formulation (A3879BU) is classified as EPA Toxicity Category III.

This acute oral study is classified as acceptable. It does satisfy the guideline requirement for an acute oral study (OPPTS 870.1100; OECD 425) in the rat.

**COMPLIANCE:** Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

## RESULTS and DISCUSSION:

Individual animals were dosed as follows:

### Main Test

Dosing Sequence	Animal No.	Sex	Dose level (mg/kg)	Sort-Term Outcome	Long-Term Outcome
1	21	F	175	S	S
2	32		550	S	S
3	47		2000	D	D
4	563		550	S	S
5	34		2000	D	D
6	48		550	S	D
7	130		2000	D	D

S = survival    D = death

AOT425statpgm (Version: 1.0) Test Results and Recommendations  
Acute Oral Toxicity (OECD Test Guideline 425) Statistical Program

Date/Time: Wednesday, November 24, 2004, 12:33:46 PM

Data file name: work.dat

Last modified: 11/24/2004 12:33:46 PM

Test/Substance: paraquat (200 g/l)

Test type: Main Test

Limit dose (mg/kg): 2000

Assumed LD50 (mg/kg): Default

Assumed sigma (mg/kg): 0.5

Recommended dose progression: 2000, 550, 175, 55, 17.5, 5.5, 1.75

DATA:

Test Seq.	Animal ID	Dose (mg/kg)	Short-term Result	Long-term Result
1	21	175	O	O
2	32	550	O	O
3	47	2000	X	X
4	563	550	O	O
5	34	2000	X	X
6	48	550	O	X
7	130	2000	X	X

(X = Died, O = Survived)

Dose Recommendation: The main test is complete.

Stopping criteria met: 5 reversals in 6 tests.

SUMMARY OF LONG-TERM RESULTS:

Dose	O	X	Total
175	1	0	1
550	2	1	3
2000	0	3	3
All Doses	3	4	7

Statistical Estimate based on long term outcomes:

Estimated LD50 = 550 (The one dose with partial response).  
95% PL Confidence interval is 186.5 to 1640.

**A. Mortality** - As noted in table.

**B. Clinical observations** - The 1 animal dosed at 175 mg/kg survived, gained weight and appeared healthy throughout the study.

1/3 animals dosed at 550 mg/kg were killed *in extremis* on study day 6. The surviving animals either gained weight or equalled their initial body weight by the end of the study. Slight toxicity was seen until study day 4 in one animal, while the other animal showed no signs of toxicity.

3/3 animals dosed at 2,000 mg/kg died during the study. One was found dead on study day 1, one was found dead on study day 2 and the remaining was killed *in extremis* on study day 2.

**C. Gross Necropsy** - No gross internal findings were observed at necropsy for the animals dosed at 175 or 550 mg/kg.

At necropsy, findings for animals dosed at 2,000 mg/kg included contents of the stomach and/or intestines stained blue, staining of the mouth and fluid stomach contents were noted.

**D. Reviewer's Conclusions:** Agree with study author.

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Reviewer: Breann Hanson  
Risk Manager (EPA): Hope Johnson, RM 25

Date: Nov. 29, 2004

**STUDY TYPE:** Acute Dermal Toxicity - Wistar Rat; OPPTS 870.1200; OECD 402

**TEST MATERIAL:** Paraquat 200 g/l SL Formulation (A3879BU) (Paraquat: 18.416%, Batch Reference: J6470/11/1; clear green liquid)

**CITATION:** Johnson, I. (2003) Paraquat 200 g/l SL Formulation (A3879BU): Acute Dermal Toxicity Study in the Rat. Laboratory Study Identification: CR3618. Unpublished study prepared by Central Toxicology Laboratory. July 16, 2003. MRID 46364514.

**SPONSOR:** Syngenta Crop Protection, Inc., P.O. Box 18300, Greensboro, NC 27419

**EXECUTIVE SUMMARY:** In an acute dermal toxicity study (MRID 46364514), 15/sex of Wistar Aplk rats (Age: 8-12 weeks; Weight: 245-322 g males, 176-277 g females; Source: Rodent Breeding Unit, Cheshire, UK) were dermally exposed to a single application of Paraquat 200 g/l SL Formulation (A3879BU) (Paraquat: 18.416%, Batch Reference: J6470/11/1; clear green liquid) at either 500, 1,000 or 2,000 mg/kg. The test material was applied to the shorn back of each animal for 24 hours using an occlusive dressing. Individual animal body weights were recorded prior to test substance administration and again on days 8 and 15, or after death. Clinical checks for mortality and signs of toxicity were made twice post-application on initial study day and at least once daily for 15 days. Animals were also graded for dermal irritation (Draize) after removal of the dressings and once daily for 14 days. All animals were necropsied on study day 15, or as soon as possible after death.

1/5 male dosed at 500 mg/kg was killed *in extremis* on study day 4. The remaining 4/5 males and 5/5 females survived the study. One female failed to gain body weight. There were no signs of toxicity in the surviving animals. Scabs and wet sores were apparent on some animals while moderate skin irritation, persisting to study termination, was noted in all animals. At necropsy, the male killed *in extremis* was noted as having stained fur and nares. Animals that survived to study termination were noted as having scabs and, in addition, females had thickened scaly skin.

3/5 males dosed at 1,000 mg/kg were found dead on study days 3 or 4 while 1/5 females were killed *in extremis*. All remaining animals survived the study and gained weight. There were no signs of toxicity in the surviving animals. Slight to moderate skin irritation, scabs and wet sores were apparent on animals. At necropsy, the males killed *in extremis* had no gross internal findings while the female had discoloured liver, lungs and nares, scabs and froth in the lumen. Animals that survived to study termination were noted as having scabs and, in addition, males had thickened skin.

All animals dosed at 2,000 mg/kg were found dead or killed *in extremis* on study day 2 or 3. Slight or moderate skin irritation was noted in most animals. At necropsy staining of the fur was

noted on all animals and several animals had distended stomachs while two had staining of the mouth or nares.

Dermal LD<sub>50</sub> Males => 805 mg/kg (95% C.I = 423-1264 mg/kg)  
Females => 1,231 mg/kg (95% C.I. = 928-1632 mg/kg)

Based on the dermal LD<sub>50</sub> of 805 mg/kg and 1,231 mg/kg, Paraquat 200 g/l SL Formulation (A3879BU) is classified as EPA Toxicity Category II.

This acute dermal study is classified acceptable. It does satisfy the guideline requirement for an acute dermal study (OPPTS 870.1200; OECD 402) in the rat.

**COMPLIANCE:** Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

## RESULTS and DISCUSSION:

Dose (mg/kg)	Mortality/Number Tested		
	Males	Females	Combined
500	1/5	0/5	1/10
1000	3/5	1/5	4/10
2000	5/5	5/5	10/10

**A. Mortality** - As noted in table.

**B. Clinical observations** - 1/5 male dosed at 500 mg/kg was killed *in extremis* on study day 4. The remaining 4/5 males and 5/5 females survived the study. One female failed to gained body weight. There were no signs of toxicity in the surviving animals. Scabs and wet sores were apparent on some animals while moderate skin irritation, persisting to study termination, was noted in all animals.

3/5 males dosed at 1,000 mg/kg were found dead on study days 3 or 4 while 1/5 females were killed *in extremis*. All remaining animals survived the study and gained weight. There were no signs of toxicity in the surviving animals. Slight to moderate skin irritation, scabs and wet sores were apparent on animals.

All animals dosed at 2,000 mg/kg were found dead or killed *in extremis* on study day 2 or 3. Slight or moderate skin irritation was noted in most animals.

**C. Gross Necropsy** - In animals dosed at 500 mg/kg, at necropsy the male killed *in extremis* was noted as having stained fur and nares. Animals that survived to study termination were noted as having scabs and, in addition, females had thickened scaly skin.

In animals dosed at 1000 mg/kg, at necropsy the males killed *in extremis* had no gross internal findings while the female had discoloured liver, lungs and nares, scabs and froth in the lumen. Animals that survived to study termination were noted as having scabs and, in addition, males had thickened skin.

In animals dosed at 2000 mg/kg, at necropsy staining of the fur was noted on all animals and several animals had distended stomachs while two had staining of the mouth or nares.

**D. Reviewer's Conclusions:** Agree with study author.



**Reviewer:** Breann Hanson  
**Risk Manager (EPA):** Hope Johnson, RM 25

**Date:** Nov. 29, 2004

**STUDY TYPE:** Primary Eye Irritation - NZW Rabbit, OPPTS 870.2400; OECD 405

**TEST MATERIAL:** Paraquat 200 g/l SL Formulation (A3879BU) (Paraquat: 18.416%, Batch Reference: J6470/11/1; clear green liquid)

**CITATION:** Johnson, I. (2003) Paraquat 200 g/l SL Formulation (A3879BU): Eye Irritation Study in the Rabbit. Laboratory Study Identification: FB6020. Unpublished study prepared by Central Toxicology Laboratory. August 1, 2003. MRID 46364512.

**SPONSOR:** Syngenta Crop Protection, Inc., P.O. Box 18300, Greensboro, NC 27419

**EXECUTIVE SUMMARY:** In a primary eye irritation study (MRID 46364512), 0.1 mL of undiluted Paraquat 200 g/l SL Formulation (A3879BU) (Paraquat: 18.416%, Batch Reference: J6470/11/1; clear green liquid) was instilled into the conjunctival sac of the left eye of 3 female young adult New Zealand albino rabbits (Source: Charles River UK Ltd., Kent, UK and Harlan Interfauna UK Ltd., Oxfordshire, UK). The untreated right eye served as a control. At first only one animal was treated and an assessment of the initial pain reaction was made. Animals were then observed at 1, 24, 48, 72 hours and on days 4, 7, 10, 14 and 17 days post-instillation. Irritation was scored according to Draize.

1 hour after instillation 3/3 eyes exhibited slight corneal opacity (score 1), iritis (score 1), conjunctivitis redness, chemosis and discharge (scores 1-2). All signs of irritation were resolved by study day 17, apart from slight discharge in 2 animals. Positive effects cleared within 10 days. Additional signs noted included comprised lachrymatory, Harderian or mucoid discharge, erythema, oedema, thickening and convolution of the eyelids, haemorrhage of the conjunctiva and nictitating membrane, dried secretion around the periorbital skin, irregular corneal surface and hair loss around the periorbital area. Two animals also exhibited salivation and few faeces.

The test substance is moderately irritating. In this study, Paraquat 200 g/l SL Formulation (A3879BU) is classified as EPA Toxicity Category II.

This study is classified as acceptable. It does satisfy the guideline requirement for a primary eye irritation study (OPPTS 870.2400; OECD 405) in the rabbit.

**COMPLIANCE:** Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

## RESULTS AND DISCUSSION:

Observations	Number "positive"/number tested								
	Hours				Days				
	1	24	48	72	4	7	10	14	17
Corneal Opacity	3/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3
Iritis	3/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3
Conjunctivae									
Redness*	2/3	3/3	3/3	3/3	3/3	2/3	0/3	0/3	0/3
Chemosis*	2/3	3/3	1/3	0/3	0/3	0/3	0/3	0/3	0/3
Discharge*	3/3	0/3	1/3	1/3	1/3	0/3	2/3	2/3	0/3

\*Score of 2 or more required to be considered "positive"

**A. Observations** - 1 hour after instillation 3/3 eyes exhibited slight corneal opacity (score 1), iritis (score 1), conjunctivitis redness, chemosis and discharge (scores 1-2). All signs of irritation were resolved by study day 17, apart from slight discharge in 2 animals. Positive effects cleared within 10 days. Additional signs noted included comprised lachrymatory, Harderian or mucoid discharge, erythema, oedema, thickening and convolution of the eyelids, haemorrhage of the conjunctiva and nictitating membrane, dried secretion around the periorbital skin, irregular corneal surface and hair loss around the periorbital area. Two animals also exhibited salivation and few faeces.

**B. Reviewer's Conclusions:** Agree with the study author.

**Reviewer:** Breann Hanson  
**Risk Manager (EPA):** Hope Johnson, RM 25

**Date:** Nov. 29, 2004

**STUDY TYPE:** Primary Dermal Irritation - NZW Rabbit; OPPTS 870.2500; OECD 404

**TEST MATERIAL:** Paraquat 200 g/l SL Formulation (A3879BU) (Paraquat: 18.416%, Batch Reference: J6470/11/1; clear green liquid)

**CITATION:** Johnson, I. (2003) Paraquat 200 g/l SL Formulation (A3879BU): Skin Irritation Study in the Rabbit. Laboratory Study Identification: EB5012. Unpublished study prepared by Central Toxicology Laboratory. May 22, 2003. MRID 46364513.

**SPONSOR:** Syngenta Crop Protection, Inc., P.O. Box 18300, Greensboro, NC 27419

**EXECUTIVE SUMMARY:** In a primary dermal irritation study (MRID 46364513), 3 female young adult New Zealand albino rabbits (Source: Charles River UK Ltd., Kent, UK) were dermally exposed to 0.5 mL of undiluted Paraquat 200 g/l SL Formulation (A3879BU) (Paraquat: 18.416%, Batch Reference: J6470/11/1; clear green liquid). Initially only one animal was treated and after consideration of the skin reactions in this animal two additional animals were treated. The test substance was applied to the left flank of each animal, covered with a gauze patch and secured with a strip of surgical tape for 4 hours. Animals were then observed for up to 34 days to assess the reversibility of skin reactions.. Dermal irritation was scored according to the Draize system at 1, 24, 48, 72 hours post-patch removal for all animals and in intervals for up to 34 days.

One hour post-patch removal very slight erythema (score 1) was noted at 2/3 treated sites. Irritation increased thereafter. At 72 hours very slight to moderate erythema (score 1-2) was noted in all animals, as well as very slight to slight oedema (score 1-2) for 2/3 animals. Erythema and oedema was seen in all animals up through 11 days, but not after. Additional signs of irritation noted included desquamation, scabbing, wrinkling, thickening and areas of new skin. Animals recovered from all signs of dermal irritation by study day 34.

In this study, the formulation is slightly irritating to the skin. Paraquat 200 g/l SL Formulation (A3879BU) is classified as EPA Toxicity Category IV.

This study is classified as acceptable. It does satisfy the guideline requirement for a primary dermal irritation study (OPPTS 870.2500; OECD 404) in the rabbit.

**COMPLIANCE:** Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

**RESULTS and DISCUSSION:**

**INDIVIDUAL SKIN IRRITATION SCORES**

**ERYTHEMA/EDEMA**

Animal Number	Sex	Hours				Days			
		1	24	48	72	4	7	8	11
62	F	0/0	1/0	1/0	1/0	1/1	NA*	2/1	2/1
72		1/0	1/1	2/1	2/1	2/1	2/0	NA*	0/0
73		1/0	1/1	2/2	2/2	2/2	2/0	NA*	0/0
Severity of Irritation - Mean Score		0.66/0.0	1.0/0.66	1.66/1.0	1.66/1.0	1.66/1.33	2/0	2/1	0.66/0.33

\*NA - animal was not scored.

**A. Observations** - One hour post-patch removal very slight erythema (score 1) was noted at 2/3 treated sites. Irritation increased thereafter. At 72 hours very slight to moderate erythema (score 1-2) was noted in all animals, as well as very slight to slight oedema (score 1-2) for 2/3 animals. Erythema and oedema was seen in all animals up through 11 days, but not after. Additional signs of irritation noted included desquamation, scabbing, wrinkling, thickening and areas of new skin. Animals recovered from all signs of dermal irritation by study day 34.

**B. Results** - Test substance is slightly irritating to the skin.

**C. Reviewer's Conclusions** - Agree with study author.

**Reviewer:** Breann Hanson  
**Risk Manager (EPA):** Hope Johnson, RM 25

**Date:** Nov. 29, 2004

**STUDY TYPE:** Dermal Sensitization - Guinea Pig; OPPTS 870.2600; OECD 406

**TEST MATERIAL:** Paraquat 200 g/l SL Formulation (A3879BU) (Paraquat: 18.416%, Batch Reference: J6470/11/1; clear green liquid)

**CITATION:** Johnson, I. (2003) Paraquat 200 g/l SL Formulation (A3879BU): Skin Sensitization Study in the Guinea Pig. Laboratory Study Identification: GG7729. Unpublished study prepared by Central Toxicology Laboratory. August 26, 2003. MRID 46364516.

**SPONSOR:** Syngenta Crop Protection, Inc., P.O. Box 18300, Greensboro, NC 27419

**EXECUTIVE SUMMARY:** In a dermal sensitization study (MRID 46364516) with Paraquat 200 g/l SL Formulation (A3879BU) (Paraquat: 18.416%, Batch Reference: J6470/11/1; clear green liquid), 30 female young adult Hartley guinea pigs (Weight: 300-344 g males; Source: Harlan Interfauna UK Ltd., Oxon, UK) were tested using the Buehler method. Three times a week for 3 weeks, 0.4 mL of a 25% w/v mixture of the test substance in distilled water (for the first 3 inductions) or a 10%w/v mixture (for the final 6 inductions) was applied to the dose site of each animal using a lint patch and covered with an occlusive dressing to 20 test animals. During this phase 10 naive control guinea pigs were treated in the same manner but with deionized water only. After 6 hours of exposure, the patches were removed. 24 hours after each induction the animals were scored for dermal irritation. Two weeks after the last induction dose challenge doses of 0.1-0.2 mL of a 10% w/v mixture of the test substance in distilled water and a 5% w/v mixture were applied to either flank of the test animals and to the naive control guinea pigs for 6 hours. Approximately 24 and 48 hours after challenge, the animals were graded for dermal irritation. The procedures were validated using alpha-Hexylcinnamaldehyde (HCA) as the positive control substance.

Irritation was noted for all test animals during the induction phase while there were no signs of irritation in any of the control animals. There were no signs of irritation in any animal at challenge. One test animal was humanely killed prior to the 7<sup>th</sup> induction due to severe signs of toxicity.

Based on the results of this study, Paraquat 200 g/l SL Formulation (A3879BU) does not have to be labeled as a dermal sensitizer.

This study is classified as acceptable. It does satisfy the guideline requirement for a primary dermal sensitization study (OPPTS 870.2600; OECD 406) in the Guinea pig.

**COMPLIANCE:** Signed and dated GLP, Quality Assurance, and Data Confidentiality

statements were provided.

## I. PROCEDURE

**A. Induction** - Three times a week for 3 weeks, 0.4 mL of a 25% w/v mixture of the test substance in distilled water (for the first 3 inductions) or a 10%w/v mixture (for the final 6 inductions) was applied to the dose site of each animal using a lint patch and covered with an occlusive dressing to 20 test animals. During this phase 10 naive control guinea pigs were treated in the same manner but with deionized water only. After 6 hours of exposure, the patches were removed. 24 hours after each induction the animals were scored for dermal irritation.

**B. Challenge** - Two weeks after the last induction dose challenge doses of 0.1-0.2 mL of a 10% w/v mixture of the test substance in distilled water and a 5% w/v mixture were applied to either flank of the test animals and to the naive control guinea pigs for 6 hours. Approximately 24 and 48 hours after challenge, the animals were graded for dermal irritation.

**C. Naive Controls** - A naive control group of 10 animals were tested with the test substance at challenge only.

## II. RESULTS and DISCUSSION:

**A. Reactions and duration** - Irritation was noted for all test animals during the induction phase while there were no signs of irritation in any of the control animals. There were no signs of irritation in any animal at challenge. One test animal was humanely killed prior to the 7<sup>th</sup> induction due to severe signs of toxicity.

**B. Positive control** - Results were appropriate with a HCA study to validate test procedures. The positive control study was completed May 31, 2003 This test was completed May 2, 2003.

**C. Reviewer's Conclusions**: Agree with study author.

1. DP BARCODE: D309349
2. PC CODE: 061601
3. CURRENT DATE: 29/NOV/2004
4. TEST MATERIAL:

<sup>a</sup> Paraquat 240 g/l SL Formulation (A7813K) (Paraquat: 22.3%, Batch Reference: J4267/75-2; green liquid)

<sup>b</sup> Paraquat (240 g/L) and PP796 (1.5 g/L) SL (A7813K) (Paraquat: 22.3% w/w, Batch Reference: J4267/75-2; clear green liquid)

<sup>c</sup> Paraquat 200 g/l SL Formulation (A3879BU) (Paraquat: 18.416%, Batch Reference: J6470/11/1; clear green liquid)

Study/Species/Lab Study # /Date	MRID	Results	Tox. Cat.	Core Grade
Acute oral toxicity/rat <sup>a</sup> SafePharm Laboratories Ltd. 006-438/08-03-2004	46364503	LD <sub>50</sub> = 310 mg/kg (95% C.I.= 175-550 mg/kg) (females)	II	A
Acute dermal toxicity/rat <sup>a</sup> SafePharm Laboratories Ltd. 006-439/08-03-2004	46364505	LD <sub>50</sub> > 2,000 mg/kg (males, females combined)	III	A
Primary eye irritation/rabbit <sup>a</sup> SafePharm Laboratories Ltd. 006-407/07-14-2004	46364506	no corneal opacity or iritis noted. 3/3 conjunctivitis at 1 hour, no positive effects on day 28	II	A
Primary dermal irritation/rabbit <sup>a</sup> SafePharm Laboratories Ltd. 006-406/07-13-2004	46364504	moderate irritant	III	A
Dermal sensitization/guinea pig <sup>b</sup> Product Safety Laboratories 15409/07-23-2004	46364507	is not a sensitizer	—	A

Core Grade Key: A =Acceptable, S = Supplementary, U = Unacceptable, W = Waived

Study/Species/Lab Study # /Date	MRID	Results	Tox. Cat.	Core Grade
Acute oral toxicity/rat ° Central Toxicology Laboratory AR7304/07-15-2003	46364515	LD <sub>50</sub> = 550 mg/kg (95% C.I.= 186.5 - 1640 mg/kg) (females)	III	A
Acute dermal toxicity/rat ° Central Toxicology Laboratory CR3618/07-16-2003	46364514	LD <sub>50</sub> = 805 mg/kg (males) LD <sub>50</sub> = 1231 mg/kg (females)	II	A
Primary eye irritation/rabbit ° Central Toxicology Laboratory FB6020/08-01-2003	46364512	3/3, opacity, iritis, conjunctivitis at 1 hour, no positive effects on day 10.	II	A
Primary dermal irritation/rabbit ° Central Toxicology Laboratory EB5012/05-22-2003	46364513	slight irritant	IV	A
Dermal sensitization/guinea pig ° Central Toxicology Laboratory GG7729/08-26-2003	46364516	is not a sensitizer	—	A

Core Grade Key: A =Acceptable, S = Supplementary, U = Unacceptable, W = Waived



QX00001-050E-1111

**FEE**DATE OUT: 17/JUN/2005

SUBJECT: FEE: PRODUCT CHEMISTRY REVIEW OF MP [ ] EP [ X ]

DP BARCODE No.: 309348 File Symbol No.: 100-RERTPRODUCT NAME: Gramoxone InteonCOMPANY: Syngenta Crop Protection, Inc.

FOOD USE [X] INTEGRATED FORMULATION [ ]

PCC: 061601 Decision No. 348898

FROM: Debra Rate  
Product Chemistry Team  
Technical Review Branch/RD (7505C)

*Debra N. Rate 6/17/05*  
*SPB 6/17/05*

TO: James Tompkins / Hope Johnson RM 25  
Herbicide Branch / RD (7505C)

**INTRODUCTION:**

The registrant has submitted for review a basic formulation CSF (dated 26/JUL/2004) and an alternate formulation CSF (dated 10/JAN/2005) for the proposed end-use product, Gramoxone Inteon. The end-use product has paraquat dichloride (30.1%) as its active ingredient (AI). The registrant has submitted product chemistry studies under the MRID No. 463774-01 and 463645-02. The Technical Review Branch (TRB) has been asked to review the submitted CSFs and studies.

**SUMMARY OF FINDINGS**

1. The proposed end-use product, Gramoxone Inteon, contains paraquat dichloride (EPA Reg. 100-1067, 45.6%, Current Status: Registration Rejected), as its active ingredient (AI) with a product label claim of 30.1%.
2. The registrant has submitted a CSF for basic formulation (dated 26/JUL/2004) for the proposed end-use product, Gramoxone Inteon. The basic formulation CSF is filled out correctly and completely. The nominal concentration of the AI concurs with the product label claim nominal concentration. The CSF is in compliance with PR Notice 91-2. However, all of the inert ingredients have not been cleared by the Agency for this use. The data submitted corresponding to guideline 830.1550 (product identity and composition) and guideline 830.1750 (certified limits) does not satisfy the requirements of 40§CFR158.155 and 158.175, respectively. See Confidential Appendix for the details of the uncleared inert ingredients.
3. The registrant has submitted a CSF for alternate formulation (dated 10/JAN/2005) for the proposed end-use product, Gramoxone Inteon. The alternate formulation CSF is filled out correctly and completely. The nominal concentration of the AI concurs with the product label claim nominal concentration. The CSF is in compliance with PR Notice 91-2. However, all of the inert ingredients have not been cleared by the Agency for this use. The data submitted corresponding to guideline 830.1550 (product chemistry and composition) and guideline 830.1750 (certified limits) does not satisfy the requirements of 40§CFR158.155 and 158.175, respectively. See the Confidential Appendix for the details of the uncleared inert ingredients.
4. The data submitted corresponding to the guideline reference 830.1600 (description of materials used to produce the product) satisfies the data requirements of 40§CFR158.160. [MRID No. 463774-01]
5. The data submitted corresponding to guideline references 830.1650 (description of formulation process) and 830.1670 (discussion on the formation of impurities) satisfy the data requirements of 40CFR§158.165 and 158.167, respectively. No impurities of toxic concern were reported to be

AUG 17 2005

*k*

BARCODE No.: 309348 File Symbol No.: 100-RERT PRODUCT NAME: Gramoxone Inteon

carried-over from the technical sources, or produced in the formulation of the end-use product. [MRID No. 463774-01]

6. The registrant has submitted an adequate method of enforcement to fulfill the guideline requirements of 830.1800 (Enforcement Analytical Method). The submitted study satisfies the requirements of 40CFR158.180. The methodology used to determine the %AI in the subject product is ion-pair high performance liquid chromatography (HPLC) with UV/Vis detector (300 nm). This method has been validated for linearity, accuracy and precision. [MRID No. 463774-01]

7. The data submitted corresponding to 830 Series Subgroup B (physical-chemical properties) satisfy the data requirements of 40CFR158.190, except for storage stability (830.6317) and corrosion characteristics (830.6320). [MRID No. 463645-02]

8. The registrant has submitted a statement of Self-Certification (dated 02/APR/2004) for the Physical / Chemical properties corresponding to the 830 Series Subgroup B to fulfill the requirements of 40CFR158.190. [MRID No. 463645-02]

9. The ingredient and storage and disposal statement on the proposed label meet label requirements from a product chemistry point of view. However, the label language must also comply with 40CFR180.1065.

#### **CONCLUSIONS:**

The TRB has reviewed the submitted basic formulation CSF (dated 26/JUL/2004) and alternate formulation CSF (dated 10/JAN/2005) for the proposed end-use product, Gramoxone Inteon and has concluded that:

1. The product chemistry data submitted corresponding to 830 Series Subgroup A are acceptable.
2. The CSF for basic formulation (dated 26/JUL/2004) will be acceptable, only if the following conditions are met. The inert ingredient in question (See Confidential Appendix) must be cleared for use by the Agency at the concentration specified on the CSF. See the Confidential Appendix for the details.
3. The CSF for alternate formulation (dated 10/JAN/05) will be acceptable, only if the following conditions are met. The inert ingredient in question (See Confidential Appendix) must be cleared for use by the Agency at the concentration specified on the CSF. See the Confidential Appendix for the details.
4. The product chemistry data submitted corresponding to 830 Series Subgroup B (physical/chemical properties) are acceptable, except for those pertaining to storage stability (830.6137) corrosion characteristics (830.6320).
5. The registrant must submit the results of the storage stability (830.6317) and the corrosion characteristics (830.6320) studies to the Agency on completion.
6. The language on the label concerning the inert ingredient (listed in the Confidential Appendix) must comply with 40CFR180.1065.

**CONFIDENTIAL APPENDIX****BARCODE No.: 309348** **File Symbol No.: 100-RERT** **PRODUCT NAME: Gramoxone Inteon**

The Changes in formulation between the basic and proposed alternate formulation CSFs.

Ingredient	Basic CSF (dated 26/JUL/2004)	Alternate CSF (dated 10/JAN/2005)	Purpose in formulation
Paraquat dichloride	30.1 %	30.1 %	Active ingredient
2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-alpha]pyrimidin-5-one	0.22 % (Carry-over from technical source + emetic added in this formulation)	0.138 % (Carry-over from technical source.)	Emetic
Sodium Hydroxide	0.32 %	0.08 %	pH adjustment
Water	25.685 %	26.007 %	Diluent

Inert ingredients which are not cleared for food use by the Agency:

1. 2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-alpha]pyrimidin-5-one –Emetic above 0.1% formulation.

(a). The major difference in the formulation of the basic and the alternate formulation CSFs is the amount of emetic (2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-alpha]pyrimidin-5-one) used in the formulation.

(b). This inert is currently cleared for use by the Agency, for this specific purpose with this active ingredient. However, it cannot be used at a % of the formulation greater than 0.1%. Both the basic and alternate formulation CSFs currently fail this criteria, and therefore cannot be cleared for use. The basic CSF (dated 26/JUL/2004) has 0.138% emetic carried over from the technical source and 0.082% added in the formulation for a combined total of 0.22% emetic. The alternate CSF (dated 10/JAN/2005) contains 0.138% emetic which is carried over from the technical source. Once the Agency has ruled to allow for an increase in the amount of emetic used in the formulation, TRB will have no issues in accepting the submitted CSFs provided the nominal concentration of the emetic falls within the new guidelines.

(c). The 40CFR180.1065 clearly explains these criteria.

**BARCODE No.:** 309348 **File Symbol No.:** 100-RERT **PRODUCT NAME:** Gramoxone Inteon  
**PRODUCT CHEMISTRY DATA (SERIES 830 Subgroup A & Subgroup B)**

Subgroup A	Data Required Fulfilled	MRID No.
830.1550. Chemical Identity (Basic CSF / Alternate CSF)	N	26/JUL/2004 / 10/JAN/2005
830.1600. Beginning Materials	Y	463774-01
830.1650. Formulation Process	Y	463774-01
830.1670. Discussion of Impurities	Y	463774-01
830.1700. Preliminary Analysis	NA	
830.1750. Certified Limits (Basic CSF)	Y	26/JUL/2004 / 10/JAN/2005
830.1800. Enforcement Analytical Method	Y	463774-01

Subgroup B	Data Required Fulfilled	Value or Qualitat. Descrip.	MRID No.
830.6302. Color	Y	Dark green (Munsell 7.5 G / 5.2 / 2.0)	463645-02
830.6303. Physical State	Y	liquid	463645-02
830.6304. Odor	Y	Slightly fruity, pungent	463645-02
830.6314. Oxidation/Reduction Action	Y	Non-Ox or Red	463645-02
830.6315. Flammability	Y	>217 °F (>103 °C)	463645-02
830.6316. Explodability	Y	Not explosive	463645-02
830.6317. Storage stability	I	Stable two weeks at 54°C, one year study is in progress.	463645-02
830.6319. Miscibility	NA	Not intended to be mixed with petroleum solvents when used as directed.	463645-02
830.6320. Corrosion Characteristics	I	No corrosion seen after one month, one year study is in progress.	463645-02
830.6321. Dielec. Bkd. Vltg.	NA	Not intended to be used around electrical equipment.	463645-02
830.7000. pH	Y	pH = 5 – 7 (1% dispersion in water @ 25 °C)	463645-02
830.7100. Viscosity	Y	65.1 mPas @ 20 °C (10 s <sup>-1</sup> shear rate)	463645-02
830.7300. Density/Bulk Density	Y	9.36 lbs / gal or 1.122 g / ml @ 20 °C	463645-02

**Explanations:** Y = The Requirements Were Fulfilled; N = The Requirements Were Not Fulfilled; NA = Not Applicable;

G = Data Gap; U = Requires Upgrading; I = Incomplete or In Progress; W = Waived.

**BARCODE No.:** 309348 **File Symbol No.:** 100-RERT **PRODUCT NAME:** Gramoxone Inteon

830.1800 Enforcement Analytical Method: (MRID No. 463774-01)

The method used to determine the % AI in the proposed end-use product is ion-pair high performance liquid chromatography (HPLC).

**Apparatus and Operating Conditions:**

Instrument:	Agilent 1100 series HPLC system		
Column:	150 mm X 3.2 mm i.d. stainless steel packed with 5 $\mu$ m. Hichrom RPB (ex Hichrom Ltd.)		
Column Temperature:	40 °C		
Mobile Phase:	Prepare a 20 mM solution of 1-octane sulphonic acid sodium salt in water (e.g. dissolve 3.89 g of 1-octane sulphonic acid sodium salt in 900 ml of AST Type II water). Mix in the following ratio: 900 2 mM 1-octane sulphonic acid sodium salt solution 100 acetonitrile 16 orthophosphoric acid 10 ddiethylamine		
Flow Rate:	0.5 ml min <sup>-1</sup>	Band width:	4 nm
Detector wavelength:	300 nm	Band width:	100 nm
Reference wavelength:	550 nm		
Injection volume:	10 $\mu$ l		
Data handling system:	Atlas		
Wash Solution I:	10% acetonitrile (in water)		
Wash Solution II:	10% acetonitrile (in water) with 0.16% orthophosphoric acid		
Retention Times:			
Paraquat:	~7.8 min.		

1-852-1  
Jocelyn + Syngene  
4/2/2006



Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419-8300  
www.syngenta.com

**FEDERAL EXPRESS**

September 16, 2005

Document Processing Desk (NOTIF)  
Office of Pesticide Programs (H7504C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1801 South Bell Street  
Arlington, VA 22202

Attention: Mr. James A. Tompkins, PM 25

Dear Mr. Tompkins:

**SUBJECT: GRAMOXONE INTEON™  
EPA REG. NO. 100-1217  
NOTIFICATION TO CORRECT ADDENDUM TO GRAMOXONE INTEON LABEL**

As discussed with Mr. James Tompkins of EPA and Mr. Jerry Wells of Syngenta Crop Protection, Inc. (September 12, 2005), Syngenta is submitting Notification for Gramoxone Inteon to correct the Addendum to the Gramoxone Inteon label.

- Page i of the Addendum – we are requesting to place the sticker in two places on the 120 gallon container.
- Page iii and iv of the Addendum – we are correcting a typo in the Cotton HA Defoliation Rate column on the Rate Card from 11.0 to 11.25. We are also requesting that the Rate Card be attached to the 30 gallon and 120 gallon container.

Enclosed are three copies of the Gramoxone Inteon label with revisions to the Addendum highlighted. Also enclosed is a self-addressed, return postcard indicating your acceptance/rejection of this Notification. To complete this notification, EPA Form 8570-1 is enclosed. If you have any questions, please contact me at 336-632-6324.

Sincerely,



  
Jerry Wells  
Regulatory Product Manager

Enclosures

Spoke w/ Jim Tompkins  
12/6/06. Business wants to  
not include supplemental rate  
cards. We can do this by notification  
but will also have to amend label  
to remove references and graphics

M-



 <div style="display: inline-block; text-align: center;"> <b>United States</b>  <b>Environmental Protection Agency</b>          Washington, DC 20460       </div>		<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;"><input type="checkbox"/> Registration</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;"><input checked="" type="checkbox"/> Amendment</div> <div style="border: 1px solid black; padding: 2px;"><input type="checkbox"/> Other</div>	OPP Identifier Number <div style="border: 1px solid black; padding: 2px; font-weight: bold;">NOTIFICATION</div>
Application for Pesticide - Section I			
1. Company/Product Number 100-1217		2. EPA Product Manager Mr. James A. Tompkins	
4. Company/Product (Name) Gramoxone Inteon		3. Proposed Classification  <input type="checkbox"/> None <input checked="" type="checkbox"/> Restricted	
5. Name and Address of Applicant (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419  <input type="checkbox"/> Check if this is a new address		6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:  EPA Reg. No. _____ Product Name _____	
Section - II			
<input type="checkbox"/> Amendment - Explain below. <span style="float: right;"><input type="checkbox"/> Final printed labels in response to Agency letter dated _____</span> <input type="checkbox"/> Resubmission in response to Agency letter dated _____ <span style="float: right;"><input type="checkbox"/> "Me Too" Application. _____</span> <input checked="" type="checkbox"/> Notification - Explain below. <span style="float: right;"><input type="checkbox"/> Other - Explain below. _____</span>			
<p><b>Explanation:</b> Use additional page(s) if necessary. (For Section I and Section II.).</p> <p>This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.</p> <p>As discussed with Mr. James Tompkins of EPA and Mr. Jerry Wells of Syngenta Crop Protection, Inc. (September 12, 2005), Syngenta is submitting Notification for Gramoxone Inteon to correct the Addendum to the Gramoxone Inteon label.</p> <ul style="list-style-type: none"> <li>Page i of the Addendum – we are requesting to place the sticker in two places on the 120 gallon container.</li> <li>Page iii and iv of the Addendum – we are correcting a typo in the <b>Cotton HA Defoliation Rate</b> column on the Rate Card from 11.0 to 11.25. We are also requesting that the Rate Card be attached to the 30 gallon and 120 gallon container.</li> </ul>			
Section - III			
1. Material This Product Will Be Packaged In:			
Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2. Type of Container <input type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
*Certification must be submitted		If "Yes" Unit Packaging wgt. No. per Container	If "Yes" Unit Packaging wgt. No. per container
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 2.5, 30, 120 Gallons, Bulk	
		5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled <input checked="" type="checkbox"/> Other <u>Pressure Sensitive</u>			
Section - IV			
1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)			
Name Jerry Wells		Title Regulatory Product Manager	Telephone No. (Include Area Code) 336-632-6324
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.			6. Date Application Received (Stamped)
2. Signature 		3. Title Regulatory Product Manager	
4. Typed Name Jerry Wells		5. Date 09/16/2005	

---

Gramoxone Inteon™ and the Syngenta logo are trademarks of a Syngenta Group Company

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Syngenta Crop Protection, Inc.  
Greensboro, NC 27409  
[www.syngenta-us.com](http://www.syngenta-us.com)

GRAMOXONE INTEON CLEAN-HARM – pd – 09/15/04, 08/05/05, 8/10/05  
000100-XXXXX.20040914.GRAMOXONE-INTEON-091404.pdf  
000100-XXXXX.20040914B.GRAMOXONE-INTEON-091404.pdf  
000100-XXXXX.20040914C.GRAMOXONE-INTEON-091404.pdf

GRAMOXONE INTEON MAS – pd – 09/15/05



Addendum to Gramoxone Inteon Label

Page i

This logo will appear on caps of 2.5 gallon jugs. It will also appear on pressure sensitive labels for 30 gallon, 120 gallon and bulk containers. It (the round sticker) will also appear in two other places on the front of a 120 gallon container.



Addendum to Gramoxone Inteon label.

Page ii.

One of two bands shown here may appear on 30 gallon containers.



**SEE NEW RATE** AS COMPARED TO  
GRAMOXONE MAX

**SEE NEW RATE** AS COMPARED TO  
GRAMOXONE MAX

**SEE NEW RATE** AS COMPARED TO  
GRAMOXONE MAX

Addendum to Gramoxone Inteon Label  
Page iii

This 2-sided rate card will be included in  
2 x 2.5 gallon boxes and attached to a  
30 gallon container and a 120 gallon  
container.



## Best Use Guidelines for Gramoxone Inteon

- For best results, treat actively growing weeds and grasses when they are between one- and six-inches tall.
- Always add a non-ionic surfactant (NIS).
- Obtain complete coverage of target weeds for most effective control.
- Use flat-fan nozzles for the most effective application.
- Use clean water or clear liquid nitrogen fertilizer as a carrier when spraying.
- Tank mix with other herbicides for improved burndown of difficult weeds and for residual control.
- Excellent glyphosate resistance management herbicide due to its unique mode of action.

EPA Reg. No. 100-1217

### Burndown Weed Control & Equivalence to Gramoxone Max

	Standard Burndown Rate (Pints/A)		
Gramoxone Inteon	2.5	3.0	4.0
Gramoxone Max equivalent	1.7	2.0	2.7

### Cotton Harvest Aid Guidelines & Equivalence to Gramoxone Max

	Cotton HA Defoliation and Boll Opening Rate (fl.oz./A)		Cotton HA Late-Season Desiccation Rate (Pints/A)	
Gramoxone Inteon	3.0	11.25	1.0	2.0
Gramoxone Max equivalent	2.1	7.5	0.7	1.3

SCP 1217A-L6 0805 197429

For more information, visit the Syngenta Crop Protection website: [www.syngentacropprotection.com](http://www.syngentacropprotection.com) or call 1-866-SYNGENTA (866-796-4368).

**Gramoxone Inteon and Gramoxone Max are restricted use pesticides.**

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**Important: Always read and follow label instructions before buying or using these products.** Syngenta Crop Protection, Inc. warrants that its products conform to the chemical description set forth on the products' labels. NO OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY TO SYNGENTA PRODUCTS. Syngenta Crop Protection, Inc. neither assumes nor authorizes any representative or other person to assume for it any obligation or liability other than such as is expressly set forth herein. IN NO EVENT SHALL SYNGENTA CROP PROTECTION, INC. BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM ANY USE OR HANDLING OF ITS PRODUCTS. No statements or recommendations contained herein are to be construed as inducements to infringe any relevant patent now or hereafter in existence.

Gramoxone Inteon™, Gramoxone Max® and the Syngenta logo are trademarks of a Syngenta Group Company.

**syngenta**

Addendum to Gramoxone Inteon Label  
 Page iv  
 This 2-sided rate card will be included in  
 2 x 2.5 gallon boxes and attached to a  
30 gallon container and a 120 gallon  
container.



## Las Mejores Pautas Del Uso Para Gramoxone Inteon

- Para obtener resultados óptimos, aplique a maleza y hierbas en crecimiento que tengan entre 1 y 6 pulg. (2.5 y 15 cm) de altura.
- Agregue siempre un surfactante no iónico (NIS).
- Para lograr un control de máxima eficacia, realice un cubrimiento completo de las malezas que desee eliminar.
- Para lograr una aplicación de máxima eficacia, utilice boquillas de abanico plano.
- Al rociar, utilice agua limpia o fertilizante de nitrógeno líquido transparente como portador.
- A fin de lograr mejores resultados de quemado y control residual de malezas difíciles, mezcle el producto con otros herbicidas en el tanque.
- Este herbicida ofrece un excelente manejo de resistencia a glifosatos gracias a su exclusivo modo de acción.

### Control de malezas por quemado y equivalencia de Gramoxone Max

	Tasa de quemado estándar tasa (pintas/acre)		
Gramoxone Inteon	2.5	3.0	4.0
Equivalente de Gramoxone Max	1.7	2.0	2.7

### Guías para ayudar a la cosecha de algodón y equivalencia de Gramoxone Max

	Tasa de defoliación y apertura de capsulas (onzas líquidas/acre)		Tasa de desección de temporada tardía (pintas/acre)	
Gramoxone Inteon	3.0	11.25	1.0	2.0
Equivalente de Gramoxone Max	2.1	7.5	0.7	1.3

Gramoxone Max y Gramoxone Inteon son pesticidas de uso restringido. Siempre lea la etiqueta antes de comprar y siga las instrucciones antes de utilizar estos productos.

**syngenta**

5-0000-3000  
8



Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419-8300  
www.syngenta.com

**FEDERAL EXPRESS**

September 7, 2005

Document Processing Desk  
Office of Pesticide Programs (7504C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1801 South Bell Street  
Arlington, VA 22202

Attention: Mr. James A. Tompkins, PM 25

Dear Mr. Tompkins:

<p><b>SUBJECT: GRAMOXONE INTEON™</b> <b>EPA REG. NO. 100-1217</b> <b>SUBMISSION OF FINAL PRINTED LABELING</b></p>
---

As requested in the August 17, 2005 Notice of Pesticide Registration, Syngenta Crop Protection, Inc. is submitting one copy of final printed labeling for Gramoxone Inteon. The conditions of registration regarding labeling (Items 2-6) have been made.

Also enclosed is EPA Form 8570-1 indicating submission of final printed labeling. If you have any questions, please contact me at 336-632-2494. Thank you.

Sincerely,

A handwritten signature in cursive script, appearing to read "Pat Dinnen".

Pat Dinnen  
Regulatory Specialist, Herbicides

Enclosures

cc: Jerry Wells



	Registration
	Amendment
x	Other

## Application for Pesticide - Section I

### 3. Proposed Classification

☐ None ☒ Restricted

**Product Name**

☐ *Check if this is a new address*

☐ Amendment - Explain below.

☐ Resubmission in response to Agency letter dated \_\_\_\_\_

☐ Notification - Explain below.

☒ Final printed labels in response to

Agency letter dated August 17, 2005

☐ Agency letter dated  
"Me Too" Application.

☐ Other - Explain below.

As requested in the August 17, 2005 Notice of Pesticide Registration, Syngenta Crop Protection, Inc. is submitting one copy of final printed labeling for Gramoxone Inteon. The conditions of registration regarding labeling (Items 2-6) have been made.

**1. Material This Product Will Be Packaged In:**

	Yes*
	No

	Yes
X	No

	Yes
X	No

	Metal
x	Plastic
	Glass
	Paper
	Other ( )

**\*Certification must be submitted**

If "Yes"  
Unit Packaging wgt.

No. per  
Container

If "Yes"	Unit Packaging wgt.
----------	---------------------

No. per container

☒ Label      ☐ Container

### 5. Location of Label Directions

x	On Label
	On Labeling accompanying product

**6. Manner in Which Label is Affixed to Product**

	Lithograph
	Paper glued
	Stenciled

☒ Other Pressure Sensitive

1. **Contact Point** (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)

Telephone No. (Include Area Code)  
336-632-2494

**Certification**

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received (Stamped)

## 2. Signature

Pat Dennis

3. Title  
Regulatory Specialist, Herbicides

4. Typed Name  
Pat Dinnen

5. Date  
September 7, 2005

PULL HERE TO OPEN ►

## RESTRICTED USE PESTICIDE

DUE TO ACUTE TOXICITY

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.



### Herbicide

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) . . . . . 30.1%

Other Ingredients: . . . . . 69.9%

Total: . . . . . 100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon. Contains alerting agent (odor), emetic, dye and Inteon Technology.

**KEEP OUT OF REACH OF CHILDREN.**

**DANGER/**  
**PELIGRO**  **POISON**

*Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)*

EPA Reg. No. 100-1217

EPA Est. 100-TX-001

SCP 1217A-L1 0805

**2.5 gallons**

Net Contents

- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

**syngenta**

SCP 130-1217A-L1

## Gramoxone Inteon™

<b>FIRST AID</b> <b>Contains Paraquat, a Bipirydylum Herbicide</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• SPEED IS ESSENTIAL. Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fullers Earth.</li> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• The odor of this product is from the alerting agent, which has been added, not from the paraquat.</li> <li>• If person is not breathing, call 911 or an ambulance.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<p style="text-align: center;"><b>NOTE TO PHYSICIAN</b></p> <p>Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment' (<a href="http://www.syngenta.com/pqmedguide/">http://www.syngenta.com/pqmedguide/</a>). Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.</p>	
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	
<p><b>HOT LINE NUMBER</b></p> <p>For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call <b>1-800-888-8372</b></p>	

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS



**DANGER / POISON**  
**PELIGRO**

May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist NIOSH-approved respirator with any N, R, P, or HE filter. Causes substantial but temporary eye injury. Wear protective eyewear (face shield required when mixing/loading). Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing. Avoid contact with skin.

**IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

#### Personal Protective Equipment (PPE)

**Applicators and other handlers (other than Mixers and Loaders) must wear:**

- Long-sleeve shirt and long pants
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter

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### Mixers and Loaders must wear:

- Long-sleeve shirt and long pants
- Shoes plus socks
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- Chemical resistant apron
- Face shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### User Safety Recommendations

#### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### Environmental Hazards

**Wildlife:** This product is toxic to wildlife. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

**Drift:** Gramoxone Inteon is a contact herbicide that desiccates all green plant tissue. Paraquat dichloride is a nonselective herbicide and will cause damage to nontarget crops and plants if off-target movement occurs. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion. Refer to the local state laws, regulations, guidelines and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement.

### Physical and Chemical Hazards

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and Buyer and User assume the risk of any such use. SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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In no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **IT IS THE MANUFACTURER'S INTENTION THAT THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitations of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

### DIRECTIONS FOR USE

#### RESTRICTED USE PESTICIDE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSES OR PLAY-GROUNDS.**

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**For Preplant or Preemergence (Broadcast or Banded), Chemical Fallow, Postemergence Directed Spray, Early Postemergence Broadcast in Peanuts and Dormant Season Applications, and "Between Cutting" Applications in Alfalfa:** Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

**For Harvest Aid and Desiccation Applications:** Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton).

#### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

**DO NOT** enter or allow others to enter the treated area until sprays have dried. **AVOID** working in spray mist.

**KEEP** all unprotected persons out of operating areas or vicinity where there may be danger of drift.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

#### GENERAL INSTRUCTIONS AND INFORMATION

**Do not apply this product through any type of irrigation system.**

When Gramoxone Inteon is applied at less than 10 gallons per acre finished spray volume, a drift control or spray deposition additive **SHOULD** be used. Refer to the additive label for use directions.

##### Spray Drift Information

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

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The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

- The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
- Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45°.

Where states have more stringent regulations, they shall be observed.

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information**.

### **Aerial Drift Reduction Advisory Information**

(This section is advisory in nature and does not supersede the mandatory label requirements.)

#### **Information on Droplet Size**

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

#### **Controlling Droplet Size**

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

#### **Boom Length**

For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

#### **Application Height**

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making application at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

#### **Swath Adjustment**

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

#### **Wind**

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

#### **Temperature and Humidity**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

#### **Temperature Inversions**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that move upward and rapidly dissipates indicates good vertical air mixing.

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### Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

### GENERAL INFORMATION

Gramoxone Inteon is a contact herbicide used to control or suppress a broad spectrum of emerged weeds. Gramoxone Inteon controls most small annual weeds – both broadleaves and grasses, and suppresses perennial weeds by destroying green foliage. Gramoxone Inteon can also be used as a desiccant/defoliant at harvest.

Gramoxone Inteon is formulated as a liquid which contains 2 pounds of active ingredient per gallon. The formulation contains a nontoxic odor and an emetic (an agent which will induce vomiting if the product is swallowed). The odor is included in the formulation to help prevent accidental ingestion of Gramoxone Inteon.

Gramoxone Inteon is rapidly absorbed by green plant tissue and interacts with the photosynthetic process to produce superoxides which destroy the plant cells. Gramoxone Inteon requires actively growing green plant tissue to function. Thorough coverage of all green foliage is essential for effective weed control and for effective crop desiccation/defoliation. Gramoxone Inteon is not as effective on drought-stressed weeds, weeds with little green foliage (i.e., mowed or cut weeds), or mature woody bark of trees and vines.

Clay and organic matter rapidly tie up Gramoxone Inteon. As a result, Gramoxone Inteon has no residual soil activity to affect later-planted crops or later germinating weeds.

### ROTATIONAL CROPS

All rotational crops may be planted immediately after the last application of Gramoxone Inteon.

### RAINFASTNESS

Because Gramoxone Inteon is rapidly absorbed by the weed foliage, rain occurring 15-30 minutes or more after application will have no effect on the activity of Gramoxone Inteon.

### APPLICATION

Since Gramoxone Inteon is a contact-type herbicide, it is essential to obtain complete coverage of target weeds to get good control. Improper application technique and/or application to large, stressed, or mown weeds will usually result in unacceptable weed control and unacceptable crop desiccation/defoliation. Complete coverage is also essential for good crop desiccation/defoliation. See details below for specific application instructions.

### USE OF A NONIONIC SURFACTANT OR CROP OIL CONCENTRATE

Always add one of the following (failure to use one of the following at recommended rates will result in reduced performance of Gramoxone Inteon).

**Nonionic Surfactant:** Add nonionic surfactant containing 75% or more surface-active agent at a minimum of 0.125% v/v (1 pt./100 gals.), or add a nonionic surfactant containing 50-74% surface-active agent at a minimum of 0.25% v/v (2 pts./100 gals.), of the finished spray volume for ground applications. For aerial applications, add a nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume.

**Crop Oil Concentrate:** Add a nonphytotoxic crop oil concentrate or methylated seed oil containing 15-20% approved emulsifier, at 1.0% v/v (1 gal./100 gals.) of the finished spray volume for ground applications. For aerial applications, add 1 pint of crop oil concentrate per acre. Do not use crop oil concentrate when using Gramoxone Inteon for cotton harvest aid.

### NOZZLE SELECTION

The use of flat-fan nozzles will result in the most effective application of Gramoxone Inteon. Flood nozzles are generally not as good as flat fans since they produce large uneven droplets. The use of flood nozzles may result in reduced weed control due to inadequate coverage.

WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE, USE ONLY FLAT FAN NOZZLES AS RECOMMENDED IN THE CHART BELOW.

Table 1. Recommended Nozzles, Pressures and Setup.

	Nozzle Type	
	Flat Fan	Flood
Maximum Size	8	15
Spray Pressure (at nozzle)	30-50 psi	30-50 psi
Maximum Nozzle Spacing	30"	40"
Direction of Spray Pattern	Down	Down
Maximum Speed	10 mph	10 mph
Spray Overlap (at each edge)	30%	50%

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### Flat-Fan Nozzles 30% (60% Total) Overlap



### Flood Nozzles 50% (100% Total) Overlap



Using nozzles, pressures, or setups different from the above chart will result in reduced control.

#### SPRAY CARRIER

Always use clean water (free of mud or clay), clear liquid nitrogen, or complete clear liquid fertilizers as the carrier when spraying Gramoxone Inteon. Muddy water, or suspension-type fertilizers containing clay, can inactivate Gramoxone Inteon. Never use suspension-type fertilizers containing clay as the spray carrier. If using a complete clear liquid fertilizer containing high phosphate levels as the spray carrier, always use the higher rate of Gramoxone Inteon and surfactant.

Note: When using liquid fertilizers such as 28% N as a spray carrier, it is important that nonionic surfactant still be used with Gramoxone Inteon. Liquid fertilizer carriers cannot substitute for surfactant.

#### RATES OF GRAMOXONE INTEON

Follow recommended rates listed with each use of Gramoxone Inteon. Use the higher label rates when weeds are dense or large. Also, use higher label rates for harvest aid when crop vegetation is dense. For broadcast applications of Gramoxone Inteon with backpack sprayers, the application rate should not exceed 0.50 lbs. a.i./A (one quart) in a minimum of 30 gallons of spray solution per acre.

#### SPRAY VOLUME

Follow recommended minimum spray volumes listed with each use of Gramoxone Inteon. These are minimum volumes only, and spray volumes should be increased as necessary to obtain complete coverage of the target weed or plant without runoff from the foliage.

WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE, TARGET WEEDS SHOULD NOT EXCEED 6 INCHES IN HEIGHT.

#### APPLICATION TIMING

Gramoxone Inteon should be applied to emerged weeds when they are small. Weeds 1-6 inches in height are the easiest to control. Larger weeds may be more difficult to control. When weeds have been grazed or mowed, thus removing much of the green foliage, allow the weeds to regrow to a height of 2-4 inches before spraying if possible. Similarly, when forage or grain crops have been harvested prior to spraying, weeds present in the field will also have been cut. To allow for adequate green foliage to remain on weeds in this situation, raise cutter bars as high as possible from the ground to cut stubble and weeds at a greater height.

#### BURNDOWN OF GRASS COVER CROPS OR VOLUNTEER CEREALS

When using Gramoxone Inteon for control of grass cover crops or volunteer cereals, best results are obtained when Gramoxone Inteon is applied prior to tillering or after boot stage. This is especially important with a wheat cover crop or volunteer wheat. Treatments made between tillering and boot stage will generally not provide complete control. Do not expect complete control of perennial cover crops.

#### ENVIRONMENTAL CONDITIONS

Gramoxone Inteon is active over a wide range of environmental conditions. Cool weather (below 55°) will slow the activity of Gramoxone Inteon, as will cloudy, overcast weather, but will not affect performance.

#### SPOT SPRAYING

When only small areas are to be sprayed with labeled applications, it is advantageous to mix small quantities of Gramoxone Inteon. To aid in mixing small quantities, the following table should be consulted.

If The Broadcast Rate Per Acre for Gramoxone Inteon is:	Add The Following Amount of Gramoxone Inteon To 1 Gallon of Water
1 1/2 pts.	1/3 fl. oz.
2 pts.	3/8 fl. oz.
2 1/2 pts.	1/2 fl. oz.
3 pts.	2/3 fl. oz.

Always add 1/3-1/2 fl. oz. of a nonionic surfactant for each gallon of spray. When spot spraying in this manner, spray to thoroughly wet the foliage, but not to the point of runoff.



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### TANK MIXING FOR IMPROVED BURNDOWN OF DIFFICULT WEEDS AND RESIDUAL WEED CONTROL

#### Photosynthetic Inhibitor Herbicides

Difficult weeds can often be controlled by tank mixing Gramoxone Inteon with other herbicides. The addition of herbicides which are also photosynthetic inhibitors (PSI) will slow the activity of Gramoxone Inteon, allowing Gramoxone Inteon to thoroughly distribute itself within the treated leaf. The resulting level of control is usually greater than if Gramoxone Inteon was applied alone.

Gramoxone Inteon may be applied in tank mixture with the following PSI herbicides:

AAtrex® Herbicide  
Atrazine  
Bicep MAGNUM®  
Bicep II MAGNUM® Herbicide  
Bicep Lite II MAGNUM® Herbicide  
Boundary® 6.5EC Herbicide  
Canopy® Herbicide  
Caparol® 4L Herbicide  
Cotoran® Herbicide  
Lorox® Herbicides  
Lorox Plus® Herbicide  
Princep® Herbicide  
Sencor® Herbicide  
Sinbar® Herbicide  
Spike® Herbicide

Refer to respective product label(s) for rates of application, directions for use, limitations, cautions and for a list of weeds controlled.

#### Improved Weed Control With PSIs

Control of difficult weeds listed below and annual grass control will be enhanced by the addition of a PSI herbicide. For best results a second application is needed.

Barnyardgrass	Horseweed (Marestail)
Broadleaf signalgrass	Morningglory
Cheatgrass	Pennsylvania Smartweed
Cocklebur	Perennial Weeds (suppression only)
Fall Panicum	Prickly lettuce
Giant Ragweed	Sedges
Knotweed	Tansymustard
Kochia	Velvetleaf
Lambsquarters	Volunteer wheat
Malva (Cheeseweed)	Spiderwort

#### Improved Control of Perennial and Annual Broadleaf Weeds

When perennial broadleaf weeds such as Canada thistle, bindweed, dandelion, etc. or difficult to control annual broadleaf weeds such as giant ragweed or morningglory are present, tank mixes with 2,4-D ester (Low Volatile), 2,4-DB, Clarity®, Banvel®, or Flexstar® where labeled, will help improve control. Tank mixing the amine formulation of 2,4-D with Gramoxone Inteon may result in reduced grass control.

#### Order of Tank Mixing

In general, Gramoxone Inteon tank mixes with other products should be mixed as follows:

1. Fill spray tank 1/2 full with clean water or other approved carriers such as clear liquid fertilizer.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add dry formulations (WP, DF, etc.) to tank.
4. Add liquid formulations (SC, EC, L, etc.) to tank.
5. Add Gramoxone Inteon to tank.
6. Add nonionic surfactant to tank.
7. Fill remainder of spray tank.

Always refer to labels of other pesticide products for mixing directions and precautions which may differ from those outlined here.

Since many of the herbicides listed on this label are available in several types of formulations, it is advisable to perform a jar test to check physical compatibility.

### PRECAUTIONS AND RESTRICTIONS

#### EQUIPMENT/CONTAINER

Flush all spray equipment with water after use each day. Gramoxone Inteon is corrosive to aluminum. Aluminum spray equipment and aluminum aircraft structures that are exposed to spray solution or spray drift should be flushed thoroughly with water immediately after use.

In dry areas, dust stirred up by high winds or equipment tires can coat weed or plant leaves and reduce Gramoxone Inteon activity. Avoid applying Gramoxone Inteon in extremely dusty conditions.

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### LIMITATIONS AND PRECAUTIONS

- For Cotton Harvest Aid: Do not pasture livestock in treated fields or feed treated foliage. —
- **DO NOT** use around home gardens, schools, recreational parks, or playgrounds.
- In preplant and preemergence (to the crop) uses, do not apply to soils lacking clay minerals, i.e., peat, muck, pure sand, artificial planting media.
- Seedbeds and plantbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence prior to treatment.
- To reduce germination of new weeds, seeding or transplanting should be done with a minimum amount of soil disturbance.
- Gramoxone Inteon used for preplant weed control over the top of plastic mulch may damage transplants which come in contact with the plastic. Sufficient rainfall or sprinkler irrigation to cause wash-off prior to planting may be needed to prevent damage to the crop.
- Weeds and grasses emerging after application of Gramoxone Inteon will not be controlled or suppressed.
- Unless otherwise indicated, crop plants emerged at time of application may be severely injured or killed if contacted by sprays of Gramoxone Inteon.

### APPLICATION INSTRUCTIONS AND CROP USE DIRECTIONS

The following tables indicate use patterns, rates, minimum spray volumes, preharvest intervals and other precautions, restrictions and comments specific to each crop. Read and follow directions carefully.

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
ALFALFA New seedlings (California only)	1	Broadcast	1.0-2.0 pts. See Table 2.	Ground: 10 gals. Air: 5 gals.	70	<ul style="list-style-type: none"> <li>• Apply during late winter or early spring.</li> <li>• Do not cut or harvest within 70 days after application.</li> <li>• Do not apply more than once during the first growing season.</li> <li>• Caution: Seedling alfalfa stands will be reduced and replanting may be necessary.</li> <li>• Not recommended for seedling alfalfa grown for seed.</li> <li>• Alfalfa foliage present at time of application will be burned.</li> </ul>
ALFALFA (No-till or conventional planting)	2	Preplant or Preemergence Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Apply prior to emergence of the crop.</li> <li>• Crop plants emerged at time of application will be killed.</li> <li>• Seeding should be done with a minimum amount of soil disturbance.</li> </ul>
ALFALFA Dormant season on established plantings Region A - See map at end of Alfalfa section.	1	Broadcast	2.0-3.0 pts.	Ground: 10 gals. Air: 5 gals.	42	<ul style="list-style-type: none"> <li>• For control of weeds, including bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dogfennel, tansymustard, london rocket, sowthistle, rescue brome, wild oats, and other winter annuals; and suppression of perennial weeds.</li> <li>• Do not apply if fall regrowth following last fall cutting is greater than 6", or if spring regrowth is more than 2".</li> <li>• Apply to well-established stands (at least 1-year old) after the crop is dormant.</li> <li>• Alfalfa foliage present at the time of application will be burned which may reduce the yield of the first cutting.</li> <li>• Do not cut or harvest within 42 days of application.</li> <li>• Do not apply more than once per season.</li> <li>• Tank mix with metribuzin (Sencor) for improved burndown of weed vegetation and residual weed control. Consult the metribuzin product label for a list of weeds controlled, rates of application, and precautions.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
ALFALFA  Dormant season tank mix with Velpar® L herbicide Region A - See map at end of alfalfa section.	2	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 10 gals.	42	<ul style="list-style-type: none"> <li>For control of weeds such as chickweed, downy brome and tansymustard.</li> <li>Use the 1.0 pt. rate of Gramoxone Inteon when weeds and grasses are less than 4" tall.</li> <li>Mix with 1-2 qts. of Velpar L per acre.</li> <li>Use the lower rate of Velpar L on loamy sands or sandy loams. Refer to Velpar L label for directions, limitations, cautions and for a list of weeds controlled.</li> <li>Apply once to established alfalfa stands during the dormant season.</li> <li>Do not apply if fall regrowth following last fall cutting is greater than 6", or if spring regrowth is more than 2".</li> <li>Do not apply to alfalfa during the first season after seeding.</li> <li>Temporary chlorosis may occur on alfalfa regrowth.</li> <li>Stress which may be caused in part by low fertility, disease, insects, winterkill, over cutting, drought or frost may increase the chances of crop injury.</li> <li><b>DO NOT USE</b> on gravelly or rocky soils, exposed subsoils, hardpan, sand or poorly drained alkaline soils as crop injury, including mortality, may result.</li> <li>Do not cut or harvest within 42 days of application.</li> </ul>
ALFALFA  Dormant Season	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals; and suppression of perennial weeds.</li> <li>Apply during late fall or winter months after the last fall cutting and before first spring cutting.</li> </ul>
On established plantings: Region B-See map at end of Alfalfa section.	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>In the California counties of Orange, Riverside and all counties north of these counties, do not apply if spring regrowth after grazing or cutting is more than 2". In all other areas within Region B, do not apply if regrowth after grazing or cutting is more than 2".</li> <li>Do not harvest within 60 days of application.</li> </ul>
On fall-seeded, newly established stands less than 1-year-old: Region A- See map at end of Alfalfa section.	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li><b>CAUTION:</b> Applications to alfalfa that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green alfalfa foliage present at the time of application will be burned.</li> <li>Total hay yield of first cutting may be reduced in alfalfa fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight.</li> <li>Do not apply more than once per season.</li> <li>Tank mix with metribuzin (Sencor) for improved burndown of weed vegetation and residual weed control in dormant established (at least 1-year old) alfalfa. Consult the metribuzin product label for a list of weeds controlled, rates of application, and precautions.</li> <li>Do not apply tank mix with metribuzin on newly established (less than 1-year old) alfalfa.</li> </ul>
On fall-seeded, newly established stands less than 1-year-old: Region B- See map at end of Alfalfa section.	1	Broadcast	0.75-1.25 pts.	Ground: 10 gals. Air: 5 gals.	60	<p>California</p> <ul style="list-style-type: none"> <li>For desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.</li> <li>Use high rate if ryegrass, shepherdspurse, sowthistle or groundsel is present.</li> </ul>

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<b>ALFALFA</b>  Between-cuttings treatment in established plantings. (Includes first year alfalfa) (All states East of the Rocky Mountains)	3	Broadcast	1.0 pt.	Ground: 10 gals.	30	<ul style="list-style-type: none"> <li>Weeds much beyond the seedling stage and the stubble of weeds cut off during harvest will be less affected by this treatment.</li> <li>Apply immediately after alfalfa has been removed for hay or silage.</li> <li>Do not treat more than 5 days after cutting.</li> <li>CAUTION: First year alfalfa stands and yields may be reduced if alfalfa is allowed to regrow more than 2".</li> <li>Alfalfa foliage present at time of application will be burned.</li> <li>In arid areas where moisture is limited, weed control may be reduced.</li> <li>Do not cut or harvest within 30 days of application.</li> <li>Make 1-3 applications, as needed, during the growing season. These sprays may be applied in addition to a dormant application.</li> <li>For first year alfalfa, do not apply more than twice during the first growing season.</li> </ul>
<b>ALFALFA</b> (For use only in the following states: ID, MT, NV, OR, UT, WA, WY)  Desiccation of alfalfa to facilitate harvest of alfalfa seed  Gramoxone Inteon/Reglone® Tank Mix	2	 Broadcast   Broadcast	 2.5-4.0 pts.   2.0-4.0 pts. Gramoxone Inteon/ 2 pts. Reglone	 Ground: 20-25 gals. Air: 5-10 gals.   Ground: 20-25 gals. Air: 5-10 gals.	 See Precautions   See Precautions	<ul style="list-style-type: none"> <li>Do not harvest until at least 4 days after application.</li> <li>Do not apply when weather conditions favor drift from treated areas.</li> <li>Do not apply by ground equipment within 25 ft., or by air within 75 ft. of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds.</li> <li>For use only on fields in production of alfalfa seed. Not for use on fields producing alfalfa for livestock feed. No portion of the treated field, including seed, seed screenings, hay forage, or stubble, may be used for human or animal feed.</li> <li>Do not cut current year's treated alfalfa seed crop for hay or forage. Do not graze current year's treated alfalfa seed crops.</li> <li>Treated alfalfa seed is not to be used for sprouting. All alfalfa seed treated with Gramoxone Inteon/Reglone tank mix is to be tagged at processing plants, "NOT FOR HUMAN CONSUMPTION". It shall be the grower's responsibility to notify the processing plants of any seed crop treated with Gramoxone Inteon/Reglone tank mix.</li> <li>Screenings from alfalfa seed processing are prohibited from feed channels. All Gramoxone Inteon/Reglone treated alfalfa seed screenings must be removed from the feed market.</li> </ul>

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ALMONDS	5	Directed Spray	1.25-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems (except suckers) or foliage.</li> <li>Use a shield or wrap plant when spraying around young trees or vines.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>Do not apply when nuts to be harvested are on the ground.</li> <li>For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatments may be necessary.</li> </ul>
ARTICHOKE (Globe)	3	Directed Spray	2.5-4.0 pts.	Ground: 20-100 gals.	1	<ul style="list-style-type: none"> <li>Up to 3 applications per season, do not exceed 8 pts. per season.</li> <li>Applications at least 7 days apart.</li> <li>Do not harvest within 24 hours of last application.</li> </ul>
ASPARAGUS	3	Preplant or Preemergence Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply prior to emergence of the crop.</li> <li>Crop plants emerged at time of application will be killed.</li> </ul>
ASPARAGUS Preemergence to established plantings at least 2 years old	3	Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals.	6	<ul style="list-style-type: none"> <li>Apply prior to emergence of crop or after last harvest.</li> <li>Crop plants emerged at time of planting will be killed.</li> </ul>

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>BEANS, DRY</b>  Sweet lupin White sweet lupin White lupin Grain lupin  Adzuki beans Asparagus beans Black beans Broad beans Field beans Garbanzo beans Kidney beans Lablab beans Lima beans Moth beans Mung beans Navy beans Pinto beans Rice beans Snap beans Tepary beans Urd beans Wax beans  Blackeyed peas Chickpeas Cowpeas Crowder peas Southern peas  Catjang Guar  <b>PEAS, DRY</b>	2	Harvest-Aid	1.2-2.0 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>• Add spreader (nonionic) at 1 qt./100 gals. of spray mix.</li> <li>• For vining type beans or bush type with lush growth, use a single application of the higher rate.</li> <li>• May also be applied as a split application. <b>DO NOT</b> make more than 2 applications or exceed a total of 2.0 pts./A. The split application may improve vine coverage.</li> <li>• Apply when the crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 40% (bush type peas or beans) or 30% (vine type peas or beans) of the leaves still green in color.</li> <li>• <b>DO NOT</b> apply when weather conditions favor spray drift. A drift control agent may be included to reduce spray drift.</li> <li>• <b>NOT REGISTERED FOR USE ON DRY BEANS OR DRY PEAS IN CALIFORNIA.</b></li> </ul>
<b>BERRIES</b> Blackberries Blueberries Boysenberries Currant Elderberry Gooseberry Huckleberry Loganberry Raspberries	5	Postemergence Directed Spray	2.0-4.0 pts.	Ground: 50 gals.	--	<ul style="list-style-type: none"> <li>• Apply before emergence of new canes or shoots as injury to those canes or shoots can occur.</li> <li>• Apply as a coarse spray to avoid crop injury from fine spray mist.</li> </ul>
<b>CACAO</b>	5	Directed Spray	2.0-4.0 pts.	Ground: 50-200 gals.	1	<ul style="list-style-type: none"> <li>• Apply when weeds are succulent and growth is from 1-6".</li> <li>• For mature woody weeds, late-germinating weeds and grasses and for perennials; retreatment or spot treatment may be necessary.</li> <li>• Do not allow spray to contact cacao plants as injury may result. Use a shield for young trees.</li> <li>• Do not spray under windy conditions.</li> <li>• Do not graze treated areas or feed treated cover crops to livestock.</li> </ul>
<b>CASSAVAS, TANIERS &amp; YAMS</b> (Puerto Rico only)	3  2	Shielded Post Directed Spray	2.0 pts.	Ground: 50 gals.	90	<ul style="list-style-type: none"> <li>• Apply when weeds are succulent and growth is 1-6".</li> <li>• On cassavas and taniers, do not make more than 3 applications per crop season.</li> <li>• On yams do not make more than 2 applications per crop season.</li> <li>• Do not allow spray to contact cassavas, tanier or yam plants as injury may result.</li> <li>• Do not spray under windy conditions.</li> <li>• Do not graze treated areas or feed treated forage to livestock.</li> </ul>

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<b>CHEMICAL FALLOW</b> General Information				Ground: 5 gals. Air: 5 gals.  See Precautions, Restrictions and Comments		<ul style="list-style-type: none"> <li>• Use higher spray volumes for better coverage as density of stubble, crop residue or weeds increase.</li> <li>• To control volunteer wheat or downy brome, fall-applied treatments generally work best with Gramoxone Inteon. If possible, tank mix with Atrazine for maximum burndown and residual control.</li> <li>• Apply from immediately after harvest up to emergence of the newly seeded crop as a broadcast or band treatment.</li> <li>• Cut wheat as high as possible to avoid cutting weeds too short, and allow the weeds to grow at least 2-3" after harvest before applying Gramoxone Inteon.</li> <li>• The addition of dicamba, (Banvel) or 2,4-D ester (Low Volatile) may aid in the suppression of emerged perennial broadleaf weeds and large annual broadleaf weeds.</li> <li>• Refer to 2,4-D ester (Low Volatile), Banvel or residual herbicide label(s) for directions, limitations, cautions and for a listing of weeds controlled.</li> <li>• For extended weed control during the fallow period, tank mixes with registered residual herbicide combinations other than those listed on this label are permissible.</li> <li>• Weeds taller than 6" may not be controlled.</li> <li>• Weeds and grasses emerging after application will not be controlled.</li> <li>• Crop plants emerged at the time of application will be killed.</li> <li>• By ground application, apply 5-60 gallons of spray mix per acre. If applying at &lt;10 GPA by ground, utilize the following additional precautions: <ul style="list-style-type: none"> <li>• Do not apply with floaters or exceed a speed of 10 mph.</li> <li>• Apply with flat fan nozzles only at 30-40 PSI.</li> <li>• Apply only in a tank mix with atrazine at a minimum of 0.5 lb. a.i./A.</li> <li>• By air, apply in 5-10 gals. of spray mix per acre.</li> </ul> </li> </ul>
<b>CHEMICAL FALLOW</b>  Continuous Wheat 2-3 Month Recropping Interval	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Make application at least 45 days prior to seeding.</li> <li>• Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see Photosynthetic Inhibitor Herbicides section) for volunteer wheat or downy brome control in the spring.</li> <li>• Refer to the Chemical Fallow General Information section.</li> </ul>

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<b>CHEMICAL FALLOW</b>  Wheat-Fallow-Wheat Rotations (Fall applied after harvest; seeded 12-14 months later)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Spray before weeds produce seed.</li> <li>Volunteer wheat and downy brome control are better with late August or early September applications.</li> <li>Tank mix with Atrazine Marksman® Herbicide, or Command® Herbicide for enhanced burndown and residual weed control.</li> <li>Tank mix with metribuzin, (Sencor 75DF) for burndown and residual control of grass and broadleaf weeds.</li> <li>Refer to the product labels for specific use rates for your soil type, use directions, cautions and a list of weeds controlled.</li> <li>Refer to the Chemical Fallow General Information section.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Fallow-Wheat Rotations (Spring applied; seeded 3-5 months later)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Application should be made March 1 to April 15, prior to spring rains to conserve moisture.</li> <li>Volunteer wheat is easier to control after the boot stage, but soil moisture loss will be greater.</li> <li>Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see Photosynthetic Inhibitor Herbicides section) for volunteer wheat or downy brome control in the spring.</li> <li>Refer to the Chemical Fallow General Information section.</li> <li>Tank mix with metribuzin, (Sencor) for burndown and residual control of grass and broadleaf weeds.</li> <li>Refer to the metribuzin, (Sencor) label for use rates for your soil type, use directions, cautions, and weeds controlled.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Annual Crop <sup>1</sup> -Wheat Rotations (Fall applied in wheat stubble)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Tank mix with AAtrex/Atrazine or Marksman for enhanced burndown and residual weed control. Refer to the labels for specific use rates for your soil type, use directions, cautions, and a list of weeds controlled.</li> <li>Spray after wheat harvest and before weeds produce seed. If grasses such as foxtails or barnyardgrass recover, respray before they develop seed.</li> <li>Volunteer wheat and downy brome are easier to control with late August to November applications.</li> <li>Refer to the Chemical Fallow General Information section.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Annual Crop-Wheat Rotations (Spring applied prior to planting an annual crop <sup>1</sup> )  <sup>1</sup> Approved Annual Crops are grain sorghum, corn, wheat, or proso millet.	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Tank mix with AAtrex/Atrazine for enhanced burndown and residual weed control. Refer to the labels for specific use rates for your soil type, use directions, cautions, and a list of weeds controlled.</li> <li>Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see Photosynthetic Inhibitor Herbicides section) for volunteer wheat or downy brome control in the spring.</li> <li>Follow the AAtrex/Atrazine recommendations pertaining to soil pH and recropping intervals.</li> <li>Refer to the Chemical Fallow General Information section.</li> </ul>



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<b>CLOVER AND OTHER LEGUMES<sup>1</sup></b> Dormant Season						
On established plantings: Region A- See map at end of Alfalfa section.	1	Broadcast	2.0-3.1 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals, and suppression of perennial weeds.</li> <li>Apply during late fall or winter months after the last fall cutting and before first spring cutting.</li> </ul>
On established plantings: Region B- See map at end of Alfalfa section.	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>Do not apply if regrowth after grazing or cutting is more than 2".</li> <li>Do not harvest within 60 days of application.</li> <li>CAUTION: Applications to clover or other legumes that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green clover or other legumes foliage present at the time of application will be burned.</li> </ul>
On fall-seeded, newly established stands less than 1-year-old: Region A- See map at end of Alfalfa section.	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>Clover or other legumes foliage present at the time of application will be discolored and temporarily stunted.</li> <li>Total hay yield of first cutting may be reduced in clover or other legumes fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight.</li> <li>Do not apply more than once per season.</li> </ul>
On fall-seeded, newly established stands less than 1-year-old: Region B- See map at end of Alfalfa section.	1	Broadcast	0.75-1.2 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>California</li> <li>For desiccation of weeds including bluegrass, ryegrass, shepherds-purse, chickweed, tansymustard, foxtail, sowthistle and groundsel.</li> <li>Use high rate if ryegrass, shepherds-purse, sowthistle or groundsel is present.</li> </ul>
<sup>1</sup> Other legumes include velvetbean, lespedeza, lupine, sainfoin, trefoil, vetch, crown vetch, and milk vetch.						
<b>CORN</b> <b>FIELD CORN</b> <b>POPCORN</b> <b>SWEET CORN</b> <b>SEED CORN</b> (Used alone)	3	Preplant or Preemergence (Broadcast or Banded Over Row)	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>Includes field, fresh, sweet, forage, fodder and popcorn.</li> <li>Seedbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.</li> </ul>

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CORN  Tank Mixes for No-till/Reduced Till	3	Preplant or Preemergence (Broadcast or Banded Over Row)	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6+": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.*	—	<ul style="list-style-type: none"> <li>• Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>• For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: 2,4-D Ester (Low Volatile), 2,4-D Amine, AAtrex/Atrazine, Balance®, Banvel, Bicep MAGNUM, Bicep II MAGNUM, Bicep Lite II MAGNUM, Callisto®, Clarity, Degree™, Degree Xtra™, Distinct®, Dual MAGNUM, Fultime™, Frontier®, Guardsman®, Harmony® Extra Herbicide (Preplant Only), Harness®, Harness® Xtra, Lorox, Lumax®, Lexar™, Princep, Prowl®.</li> <li>• Gramoxone Inteon may also be tank mixed with Warrior®, Karate®, Ambush® Insecticide.</li> <li>• Refer to respective product label(s) for rates of application, directions for use, limitations, cautions, and for a list of weeds or insects controlled.</li> </ul>
FIELD CORN POPCORN SWEET CORN SEED CORN	3	Postemergence Directed Spray (Including Hooded or Shielded)	1.0-2.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• Use higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray contacts corn plants.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height.</li> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply when corn is at least 10" tall with nozzles arranged to spray no higher than the lower 3" of corn stalks.</li> <li>• Corn plants shorter than 10" may be injured and not recover (corn height measured from soil surface to top of whorl).</li> <li>• For corn greater than 20" tall, arrange the nozzles to spray no higher than the lower 1/3 of the corn stalks.</li> <li>• Corn foliage sprayed will be injured, but the crop will recover and develop normally.</li> </ul>

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FIELD CORN POPCORN SEED CORN	1	Harvest Aid Broadcast	1.2-2.0 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>• Make ONE (1) application at least 7 days prior to harvest.</li> <li>• Apply after the corn is mature after the black layer has formed at the base of the kernels (this indicates maturity). Consult your local agricultural authority for help in identifying the black layer.</li> <li>• Add nonionic surfactant containing at least 75% surface active ingredient at 0.25% v/v.</li> <li>• Use 2.0 pts. to desiccate mature broadleaf weeds and grasses or broadleaf weeds and grasses that are taller than 18".</li> <li>• Drought stressed plants, especially broadleaf weeds can be difficult to kill and desiccation may not be complete.</li> </ul>
FIELD CORN ONLY (grain, fodder, forage)	3	Postemer- gence directed spray USDA Witchweed Eradication Program	2.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>• Initiate sprays in late June to early July and repeat in early August if regrowth occurs.</li> <li>• Follow application instructions in postemergence directed spray section above.</li> </ul>
FIELD CORN ONLY (grain, fodder, forage)  2,4-D Amine Tank Mix	3	Postemer- gence directed spray USDA Witchweed Eradication Program	8.0 fl. oz. + 0.5 lbs. 2,4-D Amine AE	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>• Apply as a directed spray onto grassy weeds and witchweed before witchweed blooms. Reapply if regrowth occurs.</li> <li>• Follow application instructions in postemergence directed spray section above.</li> </ul>
COTTON (Used alone)	3	Preplant or Preemergence	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Apply prior to, during or after planting, but before crop emergence.</li> <li>• For fallow bed treatment, beds should be preformed to permit maximum weed and grass emergence prior to treatment.</li> <li>• Seeding should be done with a minimum of soil disturbance.</li> </ul>
COTTON (California only; Used alone)	3	Preplant	8.0-16 fl. oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• For control of volunteer barley in preformed seedbeds.</li> </ul>
COTTON  Goal™ Herbicide Tank Mix	3	Preplant or Fallow Bed Broadcast	2.5-4.0 pts.	Ground or Air: 10 gals.	—	<ul style="list-style-type: none"> <li>• Refer to Goal label for specific use directions and restrictions, and weeds controlled.</li> </ul>
COTTON  Other Tank Mixes	3	Preplant or Preemergence	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>• For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: Cotoran, Dual MAGNUM®, Meturon®, Cotton-Pro®, Caparol, Diuron, Harmony® Extra (Preplant Only), MSMA, Prowl, Zorial®.</li> <li>• When tank mixing with Cotoran DF or Meturon DF, follow mixing instructions in the Order of Tank Mixing section carefully and maintain constant agitation.</li> <li>• When tank mixing with any of the herbicides listed above, refer to that product's label for specific directions and restrictions and for a list of weeds controlled.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>COTTON</b>  General directions for all cotton harvest aid uses		Harvest Aid				<p>Harvest Aid Use Precautions (Applies to all sections)</p> <ul style="list-style-type: none"> <li>Do not pasture livestock in treated fields or feed treated foliage.</li> <li>Do not apply to cotton within 3 days before harvest.</li> <li>Repeat application if necessary. Do not exceed a total of 2.0 pts./A as a harvest aid.</li> <li>May be tank mixed with other cotton harvest aid materials known to be effective by the local expert. Unless otherwise instructed in this label, refer to tank mix product label for rates, directions, limitations and cautions.</li> <li>Gramoxone Inteon can be applied in a tank mix with methyl parathion and/or Karate insecticide.</li> <li>Nodes above cracked bolls (NACB) timing is for guidance and is not intended to restrict the local expert in their use of the product.</li> </ul>
<b>SOUTHERN COTTON</b>  Harvest aid for boll opening and defoliation (tank mix with phosphate and chlorate defoliant)	4	Broadcast	8.0 fl. oz. + 1 pt. phosphate or 1 gal. chlorate	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Development of immature bolls will be inhibited.</li> <li>Apply when 80% or more of the bolls are open and the remaining bolls to be harvested are mature.</li> </ul>
<b>SOUTHERN COTTON</b>  Additional tank mixes for boll opening and defoliation	4	Broadcast	3.1-5.0 fl. oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>To aid in defoliation and opening of mature bolls, Gramoxone Inteon may be tank mixed with the following products: Accelerate® Defoliant, DEF® Defoliant, Dropp® Defoliant, Ethephon® Plant Growth Regulant, Folex® Defoliant, Harvade® Harvest Growth Regulant, Prep™ PGR.</li> <li>Apply when 60% or more of the bolls are open and the remaining bolls to be harvested are mature.</li> <li>Development of immature bolls will be inhibited.</li> <li>Refer to tank mix product label for rate, directions, limitations and cautions.</li> </ul>
<b>SOUTHERN COTTON</b>  Post Defoliation-To aid in opening of mature bolls and to desiccate green weeds	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>Use higher rate if weed infestation is heavy or dense.</li> <li>Apply when 75% or more of the bolls are open and remaining bolls to be harvested are mature.</li> <li>Development of immature bolls will be inhibited.</li> <li>After a defoliation or conditioning application has been made, delay desiccation application of Gramoxone Inteon approximately 3-7 days to minimize leaf sticking.</li> </ul>
<b>WESTERN COTTON</b>  Harvest aid for boll opening and early defoliation	4	Broadcast	5.5-8.0 fl. oz. + phosphate or sodium chlorate; and/or other compatible harvest aid products.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Use higher rate of Gramoxone Inteon on rank cotton.</li> <li>Do not use more than 8.0 fl. oz. of Gramoxone Inteon for early defoliation as excessive desiccation may occur.</li> <li>Early defoliation timing is when 60% or more of the bolls are open and the remaining bolls to be harvested are mature (approximately 4 NACB).</li> <li>Development of immature bolls will be inhibited.</li> <li>Do not use more than 4.0 lbs. of actual sodium chlorate defoliant per acre at this early defoliation timing.</li> </ul>

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>WESTERN COTTON</b>  Harvest aid for boll opening and mid-to-late defoliation	4	Broadcast	8.0-16.0 fl. oz. alone or tank mix with sodium chlorate or phosphate defoliant and/or other compatible harvest aid products.	Ground: 10 gals. Air: 5 gals.	3 (Alone)	<ul style="list-style-type: none"> <li>In desert cotton areas or on rank vigorous cotton, use the 16 fl. oz. rate of Gramoxone Inteon.</li> <li>Mid-to-late defoliation timing is when 75% or more of the bolls are open and remaining bolls to be harvested are mature (approximately 3 or fewer NACB).</li> <li>Development of immature bolls will be inhibited.</li> </ul>
<b>COTTON Stripper or Spindle Harvested</b>  Harvest aid for defoliation and boll opening	4	Broadcast	3.0-11.25 fl. oz.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>IT IS ADVISABLE, BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, TO APPLY THE RANGE OF RATES ON A SMALL BLOCK OF COTTON TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS.</li> <li>Apply when 75% of the bolls are open and the remaining bolls to be harvested are mature.</li> <li>DEVELOPMENT OF IMMATURE BOLLS WILL BE INHIBITED. SLICE BOLLS AND INSPECT THE SEED FOR MATURITY.</li> <li>Gramoxone Inteon may be applied alone or tank mixed with the following cotton harvest aids: Accelerate Defoliant, DEF® Defoliant, Ethephon® Plant Growth Regulator, Folex® Defoliant, Harvade® Harvest Growth Regulator, Prep PGR.</li> <li>May be applied as a split application. Do not exceed a total of 2.0 pts./A per year.</li> <li>To avoid leaf sticking, apply Gramoxone Inteon as a desiccant approximately 3-7 days after defoliation or a conditioning application and 7-14 days before harvest.</li> <li>Cooler temperatures may cause a longer waiting period between application of Gramoxone Inteon as a desiccant and defoliation/condition.</li> <li>Lower rates in the range may be necessary south of I-10 in Texas where temperatures are typically higher during defoliation.</li> </ul>
<b>COTTON</b>  Late season desiccation	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>IT IS ADVISABLE, BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, TO APPLY THE RANGE OF RATES ON A SMALL BLOCK TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS.</li> <li>May be applied as a split application. Do not exceed a total of 2.0 pts./A per year.</li> <li>Apply when 85% of the bolls are open and the remaining bolls to be harvested are mature (approximately 0 NACB).</li> <li>Development of immature bolls will be inhibited. Slice bolls and inspect the seed for maturity.</li> <li>Lower rates in the range may be necessary south of I-10 in Texas where temperatures are typically higher during defoliation.</li> <li>If a defoliation or conditioning application has been made, delay desiccation application of Gramoxone Inteon approximately 3-7 days to minimize leaf sticking.</li> <li>May be tank mixed with other harvest aid materials known to the local expert to be effective.</li> </ul>
<b>COTTON</b>  Desiccation of Regrowth	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>Use to desiccate regrowth occurring after defoliation or desiccation.</li> <li>Regrowth is difficult to control, therefore, thorough coverage with the full recommended rate is necessary.</li> <li>Control is dependent on growing conditions and desiccation of small new regrowth may not always be complete.</li> <li>Use higher rate if regrowth is excessive.</li> </ul>

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
EASTER LILIES (Field grown)	2	Preemergence	2.5-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Do not apply more than twice per season.</li> </ul>
FALLOW LAND Prior to planting of any crops.	2	Preplant Broadcast to Fallow Land	1.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Fallow land may be between operations such as disking, ripping, plowing, leveling, irrigating or listing for ground preparation purposes.</li> <li>Use for the control of weeds such as bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dog fennel, tansy mustard, London rocket, sowthistle, rescue brome, wild oats, volunteer cereals and other winter annuals and for suppression of perennial weeds or sedges.</li> <li>Use the higher rate for weeds approaching the maximum size of 6".</li> <li>Do not make more than 2 applications during the fallow period.</li> <li>Allow maximum weed emergence prior to application to maximize the benefit of this use.</li> <li>Adhere to the preharvest intervals and other crop specific restrictions for planted crops elsewhere on this label.</li> </ul>
GRASSES (For Seed; For Use in Seedbed Preparation)	3	Preplant, At Planting, or Preemergence	2.0-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Prepare the seedbeds and allow weeds to germinate.</li> <li>Apply Gramoxone Inteon when weeds are at the 3-5 leaf stage.</li> <li>Repeat applications as necessary prior to grass emergence.</li> <li>Do not graze treated areas or use the seed or straw from treated areas for animal feed or bedding.</li> </ul>
GUAR (Preharvest desiccation)	3	Preharvest	2.0 pts.	Ground: 10 gals.	4	<ul style="list-style-type: none"> <li>Apply after the pods are fully mature.</li> <li>Do not graze treated areas or use the treated forage for animal feed.</li> </ul>
GUAVA	4	Directed Spray	3.75 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems, fruit or foliage.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>For mature woody weeds, late-germinating weeds and grasses, and perennials, retreatment or spot spraying may be necessary.</li> </ul>
HOPS (ID, OR, & WA only)	3	Directed Spray and/or Suckering and Stripping	2.0 pts.	Ground: 10 gals.	14	<ul style="list-style-type: none"> <li>Retreatment or spot treatment may be necessary.</li> <li>Do not apply more than 3 times per season.</li> <li>Do not allow spray to contact green stems, foliage, flowers, or cones as injury may result.</li> <li>Do not allow animals to graze in treated hopyards.</li> <li>Hop vine refuse and silage may be fed to livestock.</li> <li>For suckering and stripping, spray only the basal 2 ft. of the vines.</li> <li>Experience with varieties other than Cascade, Yakima Cluster, and Bullion is limited. If using Gramoxone Inteon on other varieties than these, test the use pattern on a small number of vines of each variety to determine sensitivity to injury. Do not use on unlisted varieties if unacceptable crop injury occurs.</li> <li>Chemical Pruning: To burn back existing vines and obtain even emergence of subsequent vines, spray when vines are less than 3 ft. tall.</li> <li>APPLICATION TO HOP VINES LESS THAN 6 FT. TALL MAY CAUSE UNACCEPTABLE INJURY.</li> </ul>

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LENTILS	2	Harvest Aid	1.2-2.0 pts.	Ground: 20 gals. Air: 7 gals.	7	<ul style="list-style-type: none"> <li>Add nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume.</li> <li><b>DO NOT</b> exceed a total of 2.0 pts./A per season.</li> <li>May also be applied as a split application. If applied as a split application, do not exceed a total of 2 pts./A per season. Split application may improve coverage.</li> <li>Apply when crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 30% of the leaves still green in color.</li> <li><b>DO NOT</b> apply when weather conditions favor spray drift. A drift control agent may be included to reduce spray drift.</li> <li><b>NOT REGISTERED FOR USE ON LENTILS IN CALIFORNIA.</b></li> </ul>
MINT (Peppermint, Spearmint)	2	Dormant Season	2.0-3.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For suppression of weeds such as Italian ryegrass, prickly lettuce, groundsel, chickweed, downy brome and bluegrass.</li> <li>Apply when crop is dormant before spring growth begins and when weeds are less than 6" tall.</li> <li>Do not apply more than 3.0 pts./A per dormant season.</li> <li>May be tank mixed with Sinbar Herbicide (terbacil) weed killer for improved contact activity and residual control of Italian ryegrass, prickly lettuce and groundsel. Apply this tank mixture no more than once per season. Refer to the Sinbar label for rates, directions, and cautions and for a list of weeds controlled.</li> </ul>
ONIONS (seeded) AND GARLIC	1	Preplant/ Preemer- gence	2.5-4.0 pts.	Ground: 10 gals.	60 200 (CA only)	<ul style="list-style-type: none"> <li>Use the higher rate for heavy weed infestations or wild oat control. Apply only one application per season at the 4.0 pts./A dosage.</li> <li>Allow maximum weed and grass emergence prior to treatment but apply prior to crop emergence.</li> <li>Apply a maximum of 4.0 pts./A per season.</li> </ul>
PASSION FRUIT	5	Directed Spray	3.75 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Use a shield or wrap vine if bark is still green at application time.</li> <li>If application is to be made during harvest season, pick all fruit off the ground prior to application.</li> <li>Do not allow animals to graze on treated areas.</li> <li>Retreatment or spot treatment may be necessary.</li> </ul>
PEANUTS	2	Broadcast At Ground Crack Postemer- gence	8.0-16.0 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>To control or suppress small (1-6") emerged annual grass and broadleaf weeds in peanuts at ground crack. A second application may be made up to 28 days after ground crack.</li> <li>For at ground crack use, Gramoxone Inteon can be tank mixed with Pursuit® Herbicide or Dual MAGNUM for residual weed control. Consult the Pursuit or Dual MAGNUM label for a list of weeds controlled, rates of application, and precautions.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per acre per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Do not apply by air.</li> </ul>

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PEANUTS Basagran® Herbicide Tank Mix	2	Broadcast At Ground Crack Postemer- gence	8.0-16.0 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>For improved control of weeds such as cocklebur, bristly starbur, smartweed and prickly sida, tank mix Gramoxone Inteon with Basagran at 1 pt./A.</li> <li>This tank mix can be applied at the ground crack stage of peanuts. A second application may be made up to 28 days after ground crack.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per acre per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Refer to the Basagran label for specific use directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not apply this tank mix if peanuts show injury (leaf phytotoxicity and/or plant stunting) produced by any other herbicide treatment as injury may be enhanced and/or prolonged.</li> <li>Do not apply this tank mix during prolonged periods of drought or unseasonably cold weather as unsatisfactory weed control may result.</li> <li>Do not apply by air.</li> </ul>
PEANUTS Butyrac® Herbicide or Butoxone® Herbicide 200 Tank Mix	2	Broadcast Postemer- gence	8.0-16.0 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>For improved control of weeds such as cocklebur, sicklepod and morningglory tank mix Gramoxone Inteon with 8-16 fl. oz. (0.125-0.25 lbs.) per acre of Butyrac or Butoxone 200.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Refer to the complete Butyrac or Butoxone 200 label for specific use directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not apply by air.</li> </ul>
PERSIMMON	5	Directed Spray	3.75 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems, fruit, or foliage.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>For mature woody weeds, late-germinating weeds and grasses, and perennials, retreatment or spot spraying may be necessary.</li> </ul>
PIGEON PEAS (Puerto Rico only)	1	Directed Spray	2.0 pts.	Ground: 10 gals.	60	<ul style="list-style-type: none"> <li>Avoid contact with pigeon pea foliage.</li> <li>Do not make more than 1 application per season.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> <li>Cannery waste can be fed to livestock.</li> </ul>
PINEAPPLE	3	Directed Spray	2.0-4.0 pts.	Ground: 10 gals.	20	<ul style="list-style-type: none"> <li>Retreatment may be necessary on more mature weeds.</li> <li>Do not exceed 3 applications per season.</li> </ul>
POTATO	3	Preplant or Preemer- gence Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply up to ground cracking, before potatoes have emerged.</li> </ul>
POTATO (California, Washington, Oregon, Idaho only; Used alone)	3	Preplant Broadcast	8.0-16.0 fl. oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>



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RICE	3	Preplant or Preemergence Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence. Use higher rates and spray volumes when vegetation is dense.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.</li> <li>For improved or extended weed control, Gramoxone Inteon may be tank mixed with other herbicides registered for this use. Refer to tank mix herbicide labels for specific directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not flood/flush within 48 hours of application in order to ensure complete kill of vegetation. If cool, cloudy and/or wet weather delays speed of kill, do not flood/flush until complete kill is evident.</li> </ul>
SAFFLOWER	3	Preplant or Preemergence Broadcast or Banded Over Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply before, during, or after planting but before crop emergence.</li> </ul>
SAFFLOWER (California only)	3	Preplant Broadcast	1.0 pt.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>
SMALL GRAINS (Barley, wheat)	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	
SMALL GRAINS (Wheat Only) Hoelon® 3EC Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>A tank mix with Hoelon 3EC will improve grass control.</li> <li>Apply when weeds are actively growing and 1-6" in height. Weeds 6" or taller may not be controlled.</li> <li>Do not apply this tank mix to Barley as crop injury may result.</li> </ul>
SORGHUM (Grain)	3	Preplant/Preemergence Broadcast or Band	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Seedbeds should be formed as far ahead of planting as possible to allow maximum weed and grass emergence.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> </ul>
SORGHUM (Grain) Atrazine & 2,4-D ester (Low Volatile) Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with Atrazine for improved preemergence or residual weed control. The addition of 2,4-D ester (Low Volatile) may aid in the suppression of perennial and annual broadleaf weeds emerged at the time of application. Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and a list of weeds controlled.</li> </ul>
SORGHUM (Grain) Harmony® Extra Herbicide Tank Mix	3	Preplant	2.0-3.75 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with Harmony Extra for improved weed control.</li> <li>Refer to the Harmony Extra label for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> </ul>

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SORGHUM (Grain)	2	Postemergence Directed (Including Hooded or Shielded)	1.0-2.0 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• Use higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray contacts sorghum plants.</li> <li>• Do not exceed 2 postemergence-directed applications or exceed a total of 4.0 pts. Gramoxone Inteon per season.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height.</li> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply when sorghum is at least 12" tall when naturally standing.</li> <li>• Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Use precision directed-spray application equipment adjusted so that no more than the lower 3" of the sorghum stalk is contacted by the application spray.</li> <li>• Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>
SOYBEANS	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Do not exceed a total of 6.0 pts. of Gramoxone Inteon per season.</li> <li>• Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>• For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: 2,4-DB, 2,4-D, Authority®, Canopy, Canopy XL, Command, Dual MAGNUM, Dual II MAGNUM, Goal, Harmony® Extra (Preplant Only), Lorox, Lorox Plus, Flexstar, Firstrate™, Frontier, Gemini®, Warrior, Karate, Prowl, Pursuit, Scepter®, Sencor, Surflan®, Turbo®.</li> <li>• The rate of Gramoxone Inteon to be used in these tank mixtures is dependent on weed height and growing conditions. Use the highest recommended rate of Gramoxone Inteon under dry conditions or where the weed canopy is dense. Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> <li>• The lower rate may be used when weeds are less than 4" tall and a selective post-emergence spray or cultivation will be made within 3 weeks after planting.</li> <li>• Seeding should be done with a minimum amount of soil disturbance.</li> <li>• Do not graze or harvest for forage or hay before the R3 stage of soybean development (early pod).</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
SOYBEANS  2,4-D ester (Low Volatile) Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Apply 2,4-D ester (Low Volatile) at 0.35-0.475 lbs. a.i./A at least 7 days prior to planting.</li> <li>• Apply 2,4-D ester (Low Volatile) at 0.475-0.95 lbs. a.i./A at least 30 days prior to planting.</li> <li>• Do not apply 2,4-D ester (Low Volatile) prior to planting soybeans if you are not prepared to accept the results of soybean injury including possible loss of stand and yield.</li> <li>• Do not use the amine formulation as Gramoxone Inteon activity may be reduced.</li> <li>• May be tank mixed with residual herbicides listed above.</li> <li>• Refer to the 2,4-D ester (Low Volatile) label for a list of rates, directions, limitations and cautions and for a list of weeds controlled.</li> </ul>
SOYBEANS	3	Postemergence Directed Spray (Includes Hooded or Shielded)	4.5-8.0 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• For control of seedling johnsongrass, crabgrass, goosegrass, Brachiaria, Texas millet and pigweed less than 2" tall, use the lower rate of Gramoxone Inteon.</li> <li>• For control of 2-4" red rice, <i>Brachiaria</i>, barnyardgrass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, and fall panicum, use 8.0 fl. oz. of Gramoxone Inteon.</li> <li>• For control of 2-3" sicklepod, purslane, pigweed, cutleaf ground cherry, and common ragweed, use 8.0 fl. oz. of Gramoxone Inteon.</li> <li>• For control of 2-4" grasses in mixture with common cocklebur, morningglory, and red rice, apply Gramoxone Inteon at 8.0 fl. oz./A plus 0.2 lb. active ingredient per acre of a 2,4-DB formulation.</li> <li>• Refer to the 2,4-DB label for directions, limitations, and cautions.</li> <li>• Do not graze or harvest for forage or hay.</li> <li>• If needed make a second and final application 7-14 days later.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> <li>• Use higher rate on larger (&gt; 6") or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray intentionally or accidentally (including drift of fine droplets) contacts the plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Do not treat if soybeans are less than 8" tall.</li> <li>• Use precision directed spray application equipment adjusted so that no more than the lower 3" of the soybean plant is contacted by the application spray.</li> <li>• Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
SOYBEANS	3	Harvest Aid	8.0-16.0 fl. oz.	Ground: 20 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Indeterminant varieties: Apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less.</li> <li>Determinant varieties: Apply when plants are mature, i.e., beans are fully developed, 1/2 of leaves have dropped, and remaining leaves are yellowing.</li> <li>Immature soybeans will be injured.</li> <li>Mature cocklebur, especially drought-stressed plants, are tolerant to Gramoxone Inteon and desiccation will not be complete. Always use the higher rate for cocklebur.</li> <li>Do not apply within 15 days of harvest.</li> <li>Do not graze or harvest for forage or hay.</li> </ul>
STRAWBERRIES	3	Postemergence Directed Spray	2.0 pts.	Ground: 20 gals.	21	<ul style="list-style-type: none"> <li>Apply by directing spray between the rows and using shields to prevent spray contact with crop plants.</li> <li>Do not allow spray to contact strawberry plants as injury or excessive residues may result.</li> <li>Do not apply more than 3 times per season.</li> <li>Do not graze livestock in treated areas.</li> </ul>
SUGAR BEETS	3	Preplant or Preemergence	2.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Use the higher rate for heavier weed infestations.</li> <li>Seeding or transplanting should be done with a minimum amount of soil disturbance.</li> <li>Crop plants emerged at time of application will be killed.</li> <li>Can be used in fallow bed/stale seedbed for weed control.</li> <li>Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.</li> </ul>
SUGARCANE	2	Postemergence Directed Spray (Includes Hooded or Shielded)				<b>General Comments</b> <ul style="list-style-type: none"> <li>Apply as a hooded, shielded or directed spray to avoid contact with cane foliage to prevent leaf burn and yield reduction.</li> <li>Make a second and final application, if necessary, when new weed growth is 2-6" high.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> </ul>
-- Florida --	2		2.0 pts.	Ground: 50 gals.	—	<ul style="list-style-type: none"> <li>For optimum results, apply in early spring (March-April) when weeds are small.</li> <li>Do not apply after June 1 as cane growth may be stunted and yields reduced.</li> </ul>
-- Hawaii --	2		2.0 pts.	Ground: 20 gals.	—	<ul style="list-style-type: none"> <li>Do not apply after cane rows have closed in.</li> </ul>
-- Louisiana --	2		1.0-3.0 pts.	Ground: 20 gals.	30	<ul style="list-style-type: none"> <li>For tiller control, apply when tillers are less than 18" high.</li> <li>Use the higher rate for heavier weed infestations or tiller growth.</li> </ul>
-- Florida & Texas --	1	Harvest Aid	0.6-1.0 pts.	Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Use higher rate under cool, cloudy weather conditions.</li> <li>Apply 3-14 days before burning and harvest.</li> </ul>
SUNFLOWER	3	Preplant or Preemergence Broadcast or Banded Over Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply before, during, or after planting but before crop emergence.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
SUNFLOWER	2	Preharvest Desiccation Broadcast	1.2-2.0 pts.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>• Apply when sunflower seeds reach physiological maturity (when seed moisture is 35% or lower). For many varieties, this corresponds to the time when the back of the heads are yellow and the bracts are turning brown.</li> <li>• Do not graze treated areas or feed treated forage to livestock.</li> <li>• Use the higher rate when crop stands or weed infestations are heavy.</li> </ul>
TARO, DRYLAND (Hawaii Only)	2	Postemergence Directed Spray	2.0-3.0 pts.	Ground: 10 gals.	180	<ul style="list-style-type: none"> <li>• Do not allow spray to contact the taro plants as injury may result.</li> <li>• Make the first application when weed growth is 1-4" high.</li> <li>• Weeds emerging after the application will not be controlled.</li> <li>• A single re-treatment may be made; however, do not harvest dryland taro within 6 months of the last application.</li> </ul>
TREE PLANTATION ESTABLISHMENT Deciduous and Conifers	3	Preplant Broadcast	2.0-4.0 pts.	Ground: 20 gals.	—	<ul style="list-style-type: none"> <li>• Prepare ground early to allow maximum emergence of weeds.</li> <li>• Apply prior to planting. Plant with minimal soil disturbance.</li> <li>• Use the higher rate for heavier weed infestations.</li> <li>• For improved burndown or residual control, tank mix Gramoxone Inteon with other herbicides labelled for this use.</li> <li>• Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> <li>• Do not apply in less than 20 gals/A as weed control will be reduced.</li> </ul>
TREES AND VINES Orchards, Vineyards, Windbreak, Shade & Ornamental Trees  Acerola Apples Apricots Avocados Bananas Beechnut Brazil Nut Butternut Calamondin Cashew Cherries Chestnut Chinquapin Citrus Citron Coffee Figs Filberts Grapefruit Grapes Hickory Nut Kiwi Fruit Kumquat Lemon Lime Macadamia Nuts Mandarin Nectarines Olives Orange (sour & sweet) Papayas Peaches Pears Pecans Pistachios Plums Prunes	5 except for:  Apricots 3 Cherries 3 Kiwi Fruit 3 Nectarines 3 Olives 3 Peaches 4 Pistachios 5 (only 2 after shells split) Plums 3	Directed Spray	2.5-4.0 pts.	Ground: 10 gals.	Apricots 28 Cherries 28 Figs 13 Kiwi Fruit 14 Nectarines 28 Olives 13 Peaches 14 Pistachios 7 Plums 28	<ul style="list-style-type: none"> <li>• Do not allow spray to contact green stems (except suckers), fruit or foliage.</li> <li>• Use a shield or wrap plant when spraying around young trees or vines.</li> <li>• Do not graze treated areas.</li> <li>• Do not feed cover crops grown in treated areas to livestock.</li> <li>• Do not apply when figs, nuts or olives to be harvested are on the ground.</li> <li>• For apricots - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>• For cherries - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>• For figs - Do not harvest within 13 days after application and do not exceed 5 postemergence directed applications per season.</li> <li>• For grapes - treat when sucker growth is no more than 8" long. Late season applications to weeds should be made to avoid contact with desirable foliage.</li> <li>• For kiwi fruit - Do not treat more than 3 times per year. Do not harvest within 14 days after application.</li> <li>• For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatment may be necessary.</li> <li>• For nectarines - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>• For olives - Do not harvest within 13 days after application and do not exceed 4 postemergence directed applications per season.</li> <li>• For peaches - Do not harvest within 14 days after application and do not exceed 3 postemergence directed applications per season.</li> </ul>

continued...

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>TREES AND VINES</b> Orchards, Vineyards, Windbreak, Shade & Ornamental Trees <i>(continued)</i>  Pummelo Satsuma mandarin Walnuts Other shade and ornamental trees such as arborvitae, ash, elm, fir, oak, pine, etc.						<ul style="list-style-type: none"> <li>For pistachios - Do not exceed two applications after shells split. Do not harvest within 7 days after application.</li> <li>For plums - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> </ul>
<b>TREES AND VINES</b>  Tank Mixes	5 except for: Apricots 3 Cherries 3 Kiwi Fruit 3 Nectarines 3 Olives 4 Peaches 3 Pistachios 5 (only 2 after shells split) Plums 3	Directed Spray	2.5-4.0 pts.	Ground: 10 gals.	Refer to other tank mix labels	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with registered residual herbicides listed below for combined emerged and residual weed control. Always refer to other herbicide label(s) for respective precautions, limitations, restrictions, dates and directions for use and weeds controlled.</li> <li>Gramoxone Inteon may be tank mixed with the following herbicides: Devrinol®, Goal, Karmex®, Krovar® I Herbicides, Princep, Sinbar, Surflan, Solicam®.</li> </ul>
<b>TYFON</b> (New Hampshire only)	3	Preplant Preemergence	2.5-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Seeding should be done with a minimum of soil disturbance.</li> <li>Weeds and grasses emerging after treatment will not be controlled.</li> <li>Crop plants emerged at time of application will be injured.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>VEGETABLES</b> (Seeded or Transplanted) Beans (Lima, Snap) Broccoli Cabbage Cantaloupe Carrots Cauliflower Chayote Fruit Chinese Cabbage Chinese Waxgourd Citron Melon Collards Cucumber Eggplant Endive (Escarole) Gherkin Gourd, Edible Groundcherry Lettuce <i>Momordica</i> spp. Musk Melons Peas Pepino Peppers Pumpkin Squash Sweet Corn Tomatillo Turnips Tomatoes Watermelons	3	Preplant Preemergence	2.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.</li> <li>Applications can be made as a banded or broadcast treatment before, during or after planting but prior to the crop emergence.</li> <li>Use the higher rate for heavier weed infestations.</li> <li>Seeding or transplanting should be done with a minimum amount of soil disturbance.</li> <li>Crop plants emerged at time of application will be killed.</li> <li>Can be used in fallow bed/stale seedbed for weed control alone or tank mixed with Goal. Consult the Goal label for a list of weeds controlled, rates of application and precautions.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>
<b>VEGETABLES</b> Eggplant Tomatoes Peppers	3	Directed Spray	2.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>For control or suppression of emerged weeds between rows after crop establishment.</li> <li>Use precision directed spray application equipment adjusted to prevent spray contact with crop plants. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>Apply when weeds are succulent and weed growth is less than 6".</li> <li>Do not apply more than 3 applications per season.</li> <li>Do not allow animals to graze in treated areas.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>
<b>VEGETABLES</b> Tomatoes	2	After Final Harvest	2.4-3.75 pts.	Ground: 40-120 gals.	—	<ul style="list-style-type: none"> <li>Apply in 40-120 gallons of water per acre.</li> <li>Add NIS containing 75% or more surface active agent at 0.125 v/v (1 pt./100 gals. spray solution).</li> <li>Thorough coverage of the tomato vines is required to ensure maximum herbicide burndown.</li> <li>Use of dirty or muddy water may deactivate Gramoxone Inteon.</li> <li>To help facilitate removal of Sweet Potato Whitefly, burn tomato vines with propane burners as soon as possible after the vines have dried down sufficiently.</li> <li>DO NOT apply more than a total of 1.875 lbs. active ingredient (paraquat) per acre per season.</li> <li>To minimize drift, do not use nozzles or nozzle configurations which produce fine spray droplets (mist).</li> </ul>

## Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
VEGETABLES (California, Washington, Oregon, Idaho only) Lettuce Melon Sugar Beets Tomatoes	2	Broadcast	0.75-1.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>
VEGETABLES Rhubarb	2	Dormant	2.5-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Apply during dormant season before buds in crown begin to grow.</li> <li>Do not make more than 2 applications per season.</li> </ul>

### ALFALFA

**Table 2. New Seedlings – Suppression and control of broadleaf weeds and grasses in new alfalfa seedlings grown for hay (California only)**

For Control of:	Rate/Acre	
	For Suppression	For Control
Spikeweed (4 inches tall or less)	8 fl. oz.	16-24 fl. oz.
Volunteer Small Grain (8 inches tall or less)	8-16 fl. oz.	32 fl. oz.
Fiddleneck (6 inches tall or less)	8-16 fl. oz.	32 fl. oz.
Shepherdspurse	16-32 fl. oz.	—
Annual Bluegrass	—	16-32 fl. oz.
Chickweed	—	16-32 fl. oz.
Red Maids (6 inches tall or less)	—	16-32 fl. oz.

Do not use the 8.0 fl. oz. rate unless the alfalfa has at least 3 trifoliate leaves; the 16.0 fl. oz. rate unless the alfalfa has 6 trifoliate leaves; or rates over 16.0 fl. oz. unless there are 9 trifoliate leaves.

### RESIN SOAKING

Pines (Loblolly, Shortleaf, Longleaf, Slash, Virginia, Pond, Pitch, and Spruce Pines)

**Tree Selection** - Select trees to be treated from stands on sites not subject to periods of extreme drought stress as the desiccating effect of Gramoxone Inteon to pines is accentuated during such periods, causing a reduction in the amount of oleoresin deposited in the xylem. Select trees to be treated from vigorous, nonstagnated stands, either natural or planted. In stagnated stands or commercial timber stands, plan treating with Gramoxone Inteon not sooner than three years after a commercial thinning.

**Application Directions** - Apply Gramoxone Inteon diluted in water to a suitable wound in the tree trunk to bring the treatment into contact with the xylem (sapwood).

**Bark Streaks or Cuts:** This type of wound is made using a standard or rotary bark hack or a chainsaw chipping tool employed in naval stores work to remove a single 1-inch wide streak of bark about 1-2 ft. from ground level. The total length should not exceed 1/3 of the tree circumference. Multiple streaks or cuts can result in serious girdling of the trunk and premature death of the tree. A coarse spray (about 1.7-5.0 ml.) Gramoxone Inteon solution (1-5% cation, wt./wt. basis) should be applied to runoff to the exposed xylem, using a low-pressure sprayer. The amount of spray required per cut depends on tree circumference and the length of cut or streak (1/3 of circumference). For a 9-inch diameter tree, 3 ml. of spray will cover the 1-inch wide streak. Using 3 ml. of a 3 or 6% Gramoxone Inteon solution will result in application of 60 or 120 mg. Gramoxone Inteon per streak.

**Time of Treatment:** Resin soaking can occur from treatments made any time of the year; however, cool season treatments under nondrought conditions usually result in less severe pine beetle infestations and longer tree life.

**Interval Between Treatment and Tree Harvest:** The interval between application of Gramoxone Inteon and tree harvest should be a minimum of 6 months and preferably from 12-24 months. Intervals of over 6 months may not be possible under conditions of drought or serious pine beetle attacks, which may make early harvest necessary. The Gramoxone Inteon treatment may encourage beetle attack, or may cause premature death of the tree. Desiccation of the xylem tissue, rather than the desired resin soaking, may occur, and is more likely at higher dosage rates.

**Effect on Stem Growth:** Gramoxone Inteon treatment can result in reduced stem growth during the interval between treatment and tree harvest.



# Gramoxone Inteon™

Dilution Table for Gramoxone Inteon (2.0 lbs. cation per gallon):

Concentration of Cation Desired (Wt./Wt. Basis)	To 1 Gallon of Gramoxone Inteon Add the Following No. Gals. of Water:
0.2%	118.8
0.5%	46.8
1.0%	22.9
2.0%	10.9
3.0%	6.9
4.0%	4.9
5.0%	3.7

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
CONSERVATION RESERVE, FEDERAL SET-ASIDE, CONSERVATION COMPLIANCE PROGRAMS (For use in compliance with the Federal Conservation Reserve Program or Federal set-aside programs).	3	Broadcast	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For improved emerged weed control or extended weed control, Gramoxone Inteon may be tank mixed with other herbicides registered for this use. Refer to tank mix herbicide labels for specific directions, limitations, cautions and for a list of weeds controlled.</li> </ul>
NONCROP USES	10	Broadcast or Spot Treatment	2.5-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>For use in noncrop areas such as public airports, electric transformer stations, pipeline pumping stations, around commercial buildings, storage yards and other installations, fence lines or similar noncrop areas.</li> <li>Avoid contact with the foliage of ornamentals or desired plants.</li> </ul>
PASTURE RESEEDING For suppression of existing sod and undesirable emerged broadleaf weeds and grasses prior to or at time of planting grasses or forage legumes	3	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	See specific geographic recommendation	<p><b>West of Cascade and Sierra Nevada Mountains</b></p> <ul style="list-style-type: none"> <li>Apply in October through December after first fall rains and after weeds have emerged and sod has started new growth.</li> <li>For best seeding results, apply on moderately to heavily grazed areas.</li> <li>Do not use in areas with heavy sod and weed growth.</li> </ul> <p><b>East of Rocky Mountains</b></p> <ul style="list-style-type: none"> <li>Use the 2.0 pt. rate on vigorous or coarse sod species such as bromegrass.</li> <li>Apply prior to, or at time of seeding grasses or forage legumes.</li> <li>Apply only to grazed or mowed pastures not more than 3" in height at time of treatment.</li> </ul> <p><b>Bermudagrass or Bahiagrass Sod</b></p> <ul style="list-style-type: none"> <li>Apply in late summer or early fall to sod not exceeding 3 inches in height.</li> <li>For control of emerged Little Barley, apply in February or March before the midboot stage of Little Barley.</li> </ul> <p><b>Bermudagrass and Coastal Bermudagrass Pastures</b></p> <ul style="list-style-type: none"> <li>Apply when bermudagrass is dormant.</li> <li>For control of little barley, apply before the mid-boot stage.</li> <li>Do not mow for hay until 40 days after treatment.</li> </ul>
For Control of Endophyte-Fungus-Infected Fescue Forage Legume/Grass Mixture and Other Grass Pastures	2	Broadcast (Split Application)	1.0-2.0 pts. followed by 1.0-2.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Use split applications of 10-21 days apart if necessary.</li> <li>Do not exceed 4.0 pts./A total in preparation for reseeding.</li> <li>For spring plantings, the initial application of 1.0-2.0 pts. may be made the previous fall.</li> <li>Apply when fescue is actively growing and no more than 4" high.</li> <li>To reduce the infestation of endophyte-infested grass, do not allow fescue to go to seed starting with the preceding year's crop.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<p>*For Prickly Pear Desiccation in Pastures</p> <p>*Not for use in California.</p>	10	Spot Sprays	1.0 fl. oz. per gallon of water	Spray to wet weed foliage		<ul style="list-style-type: none"> <li>• Knapsack, backpack sprayers, pump-up pressure sprayers, hand-guns, hand wands, and other hand-held equipment can be used to direct the spray onto weed foliage for spray to wet applications.</li> <li>• Mix 1.0 fl. oz. of Gramoxone Inteon and 1/3 fl. oz. of a nonionic surfactant per gallon of water.</li> <li>• Spray coverage should be uniform and provide complete cover of all green prickly pear foliage.</li> <li>• Apply in May through September for best desiccation results.</li> <li>• Do not use more than 2.5 pts. of Gramoxone Inteon per acre per year.</li> <li>• Apply only to pastures with no more than 3" of height at time of treatment.</li> <li>• For improved desiccation and perennial control of Prickly pear, tank mix with Grazon P+D Specialty Herbicide at a rate of 1-2 fl. oz. per gallon of water.</li> <li>• Refer to the Grazon P+D Specialty Herbicide label for directions, restrictions, and precautions.</li> </ul>
<p>*For Juniper Species leaf moisture reduction or desiccation prior to Prescribed burning of pastures</p> <p>*Not for use in California.</p>	10	Broadcast	2.0 pts.	Air: 5 gals.		<ul style="list-style-type: none"> <li>• Use only in conjunction with prescribed burning as recommended and monitored by local SCS or University and Extension Range Specialists.</li> <li>• Apply during hot, dry weather conditions (generally July and August).</li> <li>• Use 2% v/v nonionic surfactant in a minimum of 5 gpa spray solution.</li> <li>• Juniper leaf moisture content should be monitored; however, maximum leaf moisture reduction generally occurs 3-4 weeks after Gramoxone Inteon application.</li> <li>• Significant soil moisture and/or wet weather conditions prior to or after application will decrease the potential for Juniper Crown burns.</li> <li>• Cool or humid weather conditions also adversely affect leaf moisture reduction.</li> <li>• Do not graze livestock after application or prior to burning.</li> </ul>
<p>*Native Pastures</p> <p>*Not for use in California.</p>	2	Broadcast	1.5-1.8 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>• Apply Gramoxone Inteon for control of Downy and Japanese Brome.</li> <li>• Apply in spring after 90% node formation of brome species, but before full bloom.</li> <li>• Emerged native perennial grasses will be burned by application, but application after 90% node formation will allow adequate time for native grasses to recover and attain maximum growth in the use season.</li> <li>• Do not apply more than 1.8 pts. Gramoxone Inteon per year.</li> <li>• Apply only to pastures with no more than 3" of height at time of treatment.</li> </ul>

## Gramoxone Inteon™

Conversion Table Gramoxone Inteon to Be Applied			
Ounces	Pints	Lb. a.i.	Acres/Gallon
16.0	1.0	0.25	8.00
24.0	1.5	0.375	6.00
32.0	2.0	0.5	4.00
40.0	2.5	0.625	3.20
48.0	3.0	0.75	2.66
56.0	3.5	0.875	2.28
64.0	4.0	1.00	2.00

### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

#### Pesticide Storage

Store at temperatures above 32°F.

#### Pesticide Disposal

Pesticides wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinse is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

#### Container Disposal

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**For Bulk/Mini-Bulk Containers** - Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

#### Bulk/Mini-Bulk Refillable Containers

Before refilling, inspect thoroughly for damage, such as cracks, punctures, bulges, dents, abrasions and damaged or worn threads on closure devices. After filling and before transporting, check for leaks. Do not refill or transport damaged or leaking container.

For help with any spill, leak or fire involving this material, call 1-800-888-8372.

**CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!**

AAtrex®, Ambush®, Bicep MAGNUM®, Bicep II MAGNUM®, Bicep Lite II MAGNUM®, Callisto®, Caparol®, Devrinol®, Dual MAGNUM®, Flexstar®, Karate®, Lexar™, Lumax®, Princep®, Reglone®, Solicam®, Zorial®, and the Syngenta logo are trademarks of a Syngenta Group Company

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Folex® trademark of AMVAC Chemical Corporation

Firstrate™, Fultime™, Goal™, Spike®, and Surflan® trademarks of Dow AgroSciences

Harvade® trademark of Uniroyal Chemical Company

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For non-emergency (e.g., current product information), call  
Syngenta Crop Protection at 1-800-334-9481.

Syngenta Crop Protection, Inc.  
Greensboro, North Carolina 27409  
www.syngenta-us.com

SCP 1217A-L1 0805

**RESTRICTED USE PESTICIDE**

DUE TO ACUTE TOXICITY

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

**Herbicide**

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:	
Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) .....	30.1%
Other Ingredients: .....	69.9%
Total: .....	100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon.

Contains alerting agent (odor), emetic, dye and Inteon Technology.  
EPA Reg. No. 100-1217 EPA Est. 100-TX-001  
See directions for use in attached booklet.**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

Gramoxone Inteon™ and the Syngenta logo are trademarks of a Syngenta Group Company

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Syngenta Crop Protection, Inc.  
Greensboro, NC 27409  
www.syngenta-us.com

SCP 1217A-L1 0805

**2.5 gallons**

Net Contents

**KEEP OUT OF REACH  
OF CHILDREN.****DANGER /  
PELIGRO  
POISON**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

**FIRST AID**

Contains Paraquat, a Bipyridylum Herbicide

If swallowed: **SPEED IS ESSENTIAL.** Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fuller's Earth. Call a poison control center or doctor immediately for treatment advice. Do not give anything by mouth to an unconscious person.

If inhaled: Move person to fresh air. The odor of this product is from the alerting agent, which has been added, not from the paraquat. If person is not breathing, call 911 or an ambulance. Call a poison control center or doctor for further treatment advice.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**NOTE TO PHYSICIAN**

Refer to the booklet "Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment"

(http://www.syngenta.com/pqmedguide/). Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15mL/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**HOT LINE NUMBER**

For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call 1-800-888-8372.

**PRECAUTIONARY STATEMENTS****HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist NIOSH-approved respirator with any N, R, P, or HE filter. Causes substantial but temporary eye injury. Wear protective eyewear (face shield required when mixing/loading). Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing. Avoid contact with skin. IMPORTANT: Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

**Environmental Hazards****Wildlife:** This product is toxic to wildlife. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.**Drift:** Gramoxone Inteon is a contact herbicide that desiccates all green plant tissue. Paraquat dichloride is toxic to nontarget crops and plants if off-target movement occurs. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion. Refer to the local state laws, regulations, guidelines and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement.**Physical and Chemical Hazards**

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

**STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

**Pesticide Storage**

Store at temperatures above 32°F.

**Pesticide Disposal**

Pesticides wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Disposal**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For help with any spill, leak or fire involving this material, call 1-800-888-8372.

**CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!**

NEW  
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TOLLS.

Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419-8300  
www.syngenta.com



**FEDERAL EXPRESS**

November 11, 2005

Mr. Jim Tompkins, PM 25  
Office of Pesticide Programs (H7504C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1801 South Bell Street  
Arlington, VA 22202-4501

**SUBJECT: REQUEST THAT NEW P.  
GRAMOXONE EXTRA (100-1074) ALSO BE ADD**

Dear Mr. Tompkins:

Syngenta Crop Protection requests the Agency Gramoxone Inteon, EPA Reg. No. 100-1217, is paraquat dichloride. Tolerance petitions for the new uses are currently pending. The new uses are for the following numbers PP2F6433 (Syngenta - wheat, cotton, soybean and several crop groupings), PP3E6763 (IR-4 - ginger), PP1E6332 (IR-4 - okra), PP1E6319 (IR-4 - bulb onion) and PP1E6223 (IR-4 - tanager).

When the new tolerances/uses were initially requested, proposed labels for Gramoxone Extra (100-1043) and Cyclone Concentrate (100-1074, alternate brand name Gramoxone Max) were submitted to the Agency (R17 PRIA action). Syngenta is herein submitting this request for the uses to be added to Gramoxone Inteon, a new formulation with improved acute oral toxicity that was registered this summer.

All necessary data for the establishment of new tolerances for these uses has been submitted by Syngenta or IR-4. The tolerance fee for the new tolerances in the petition submitted by Syngenta (\$26,775.00) was paid January 18, 2000.

**Attachments:**

- ◇ Application for Pesticide Registration, EPA Form 8570-1
- ◇ 5 paper copies of the proposed supplemental label showing new uses. One is highlighted to indicate changes to currently approved uses.
- ◇ 5 paper copies of the most recently approved Gramoxone Inteon label showing all currently approved uses.

Please contact me at (336) 632-6324 if there are any questions regarding this submission.

Kind regards,

Jerry Wells  
Senior Regulatory Product Manager

Enclosures

PARAQUAT  
New Uses Need Rev.  
From Hope Johnson  
Aug 3, 06  
→ ASAP.

Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419-8300  
www.syngenta.com



**FEDERAL EXPRESS**

November 11, 2005

Mr. Jim Tompkins, PM 25  
Office of Pesticide Programs (H7504C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1801 South Bell Street  
Arlington, VA 22202-4501

<b>SUBJECT:</b>	<b>REQUEST THAT NEW PARAQUAT FOOD USES PREVIOUSLY REQUESTED FOR GRAMOXONE EXTRA (EPA REG. NO. 100-1043) AND CYCLONE CONCENTRATE (100-1074) ALSO BE ADDED TO GRAMOXONE INTEON, EPA REG. NO. 100-1217</b>
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Dear Mr. Tompkins:

Syngenta Crop Protection requests the Agency consider the enclosed application to add several new uses for Gramoxone Inteon, EPA Reg. No. 100-1217, pending the establishment of new tolerances. The active ingredient is paraquat dichloride. Tolerance petitions for the new uses are currently being reviewed at EPA under petition numbers PP2F6433 (Syngenta - wheat, cotton, soybean and several crop groupings), PP3E6763 (IR-4 - ginger), PP1E6332 (IR-4 - okra), PP1E6319 (IR-4 - bulb onion) and PP1E6223 (IR-4 - tanager).

When the new tolerances/uses were initially requested, proposed labels for Gramoxone Extra (100-1043) and Cyclone Concentrate (100-1074, alternate brand name Gramoxone Max) were submitted to the Agency (R17 PRIA action). Syngenta is herein submitting this request for the uses to be added to Gramoxone Inteon, a new formulation with improved acute oral toxicity that was registered this summer.

All necessary data for the establishment of new tolerances for these uses has been submitted by Syngenta or IR-4. The tolerance fee for the new tolerances in the petition submitted by Syngenta (\$26,775.00) was paid January 18, 2000.

**Attachments:**

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- ◇ 5 paper copies of the proposed supplemental label showing new uses. One is highlighted to indicate changes to currently approved uses.
- ◇ 5 paper copies of the most recently approved Gramoxone Inteon label showing all currently approved uses.

Please contact me at (336) 632-6324 if there are any questions regarding this submission.


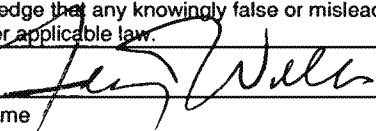
Kind regards,

A handwritten signature in black ink, appearing to read "Jerry Wells", written over a horizontal line.

Jerry Wells  
Senior Regulatory Product Manager

Enclosures

Please read instructions on reverse before completing form.

 <b>United States</b> <b>Environmental Protection Agency</b> Washington, DC 20460		<input type="checkbox"/> <b>Registration</b> <input type="checkbox"/> <b>Amendment</b> <input checked="" type="checkbox"/> <b>Other</b>	OPP Identifier Number  
<b>Application for Pesticide - Section I</b>			
1. Company/Product Number 100-1217		2. EPA Product Manager Jim Tompkins	3. Proposed Classification  <input type="checkbox"/> None <input checked="" type="checkbox"/> Restricted
4. Company/Product (Name) Gramoxone Inteon		PM# 25	
5. Name and Address of Applicant (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419  <input type="checkbox"/> Check if this is a new address		6. <b>Expedited Review.</b> In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:  EPA Reg. No. _____ Product Name _____	
<b>Section - II</b>			
<input type="checkbox"/> Amendment - Explain below. <span style="margin-left: 200px;"><input type="checkbox"/> Final printed labels in response to Agency letter dated _____</span> <input type="checkbox"/> Resubmission in response to Agency letter dated _____ <span style="margin-left: 200px;"><input type="checkbox"/> "Me Too" Application. _____</span> <input type="checkbox"/> Notification - Explain below. <span style="margin-left: 200px;"><input checked="" type="checkbox"/> Other - Explain below. _____</span>			
<b>Explanation:</b> Use additional page(s) if necessary. (For Section I and Section II.).			
Request to Add New Uses to Gramoxone Inteon label.			
<b>Section - III</b>			
1. <b>Material This Product Will Be Packaged In:</b>		2. <b>Type of Container</b>	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
<b>*Certification must be submitted</b>		If "Yes" Unit Packaging wgt. No. per Container	If "Yes" Unit Packaging wgt. No. per container
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 2.5, 30, 120 Gallons and Bulk	5. Location of Label Directions <input type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product
6. Manner in Which Label is Affixed to Product		<input type="checkbox"/> Lithograph <input type="checkbox"/> Other <u>Pressure Sensitive</u> <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled	
<b>Section - IV</b>			
1. <b>Contact Point</b> (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)			
Name Jerry Wells		Title Senior Regulatory Product Manager	Telephone No. (Include Area Code) 336-632-6324
<b>Certification</b> I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.			6. Date Application Received (Stamped)
2. Signature 		3. Title Senior Regulatory Product Manager	
4. Typed Name Jerry Wells		5. Date November 11, 2005	



**RESTRICTED USE PESTICIDE  
DUE TO ACUTE TOXICITY**

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR  
PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE  
USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

**SUPPLEMENTAL LABEL FOR GRAMOXONE INTEON™**

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) ..... 30.1%

Other Ingredients: ..... 69.9%

Total: ..... 100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon.

Contains alerting agent (odor), emetic, dye and Inteon Technology.

**KEEP OUT OF REACH OF CHILDREN.**

**DANGER/PELIGRO**



**POISON**

- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

EPA Reg. No.100-1217

EPA Est. 100-TX-001

Syngenta Crop Protection, Inc.

Greensboro, NC 27409

[www.syngenta-us.com](http://www.syngenta-us.com)

**syngenta**

## DIRECTIONS FOR USE

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<u>COTTON</u>	<u>3</u>	<u>Postemergence Directed Spray (Hooded or Shielded)</u>	<u>1.2-2.0 pts.</u>	<u>Ground: 10 gals.</u>	<u>-</u>	<ul style="list-style-type: none"> <li>* <u>Apply when weeds are actively growing and between 1-6" in height.</u></li> <li>* <u>Use higher rate on dense populations and/or larger or hard to control weeds. Weeds 6" or taller may not be controlled.</u></li> <li>* <u>AVOID CONTACT WITH CROP. Intentional or accidental contact (including drift) of Gramoxone Inteon with the crop may result in severe damage or loss of the crop.</u></li> <li>* <u>Apply by directing spray between the rows and using hooded or shielded sprayers to prevent contact with crop plants.</u></li> <li>* <u>Equipment should be in good operating condition. Avoid leakage or dripping onto crop. Variation in equipment design may affect level of weed control.</u></li> <li>* <u>Keep hoods or shields adjusted to insure adequate contact with weeds while shielding the crop from the herbicide.</u></li> <li>* <u>To minimize drift, do not use nozzles or nozzle configurations or adjuvants which produce fine spray droplets (mist).</u></li> <li>* <u>May be tank mixed with other postemergence directed herbicides. Unless otherwise instructed on this label, refer to tank mix product label for rates, directions, limitations and cautions.</u></li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<u>GINGER</u>	<u>6</u>	<u>Preemergence Broadcast,</u> <u>Postemergence,</u> <u>Directed Spray</u>	<u>2.0-4.0 pts.</u>	<u>Ground: 20 gals.</u>	<u>14 days for</u> <u>immature</u> <u>ginger roots,</u> <u>75 days for</u> <u>mature</u> <u>ginger roots</u>	<ul style="list-style-type: none"> <li>• <u>Apply as a preemergence broadcast application before, during, or after planting but prior to crop emergence.</u></li> <li>• <u>Do not allow spray to contact ginger plants.</u></li> </ul>
<u>OKRA</u>	<u>1</u>	<u>Preemergence Broadcast</u>	<u>2.0-4.0 pts./A</u>	<u>Ground: 20 gals.</u>	<u>=</u>	<ul style="list-style-type: none"> <li>• <u>Preemergence applications must be made before crop emergence.</u></li> <li>• <u>Apply no more than 3 applications per season.</u></li> <li>• <u>Do not exceed 8.0 pts./A per season.</u></li> <li>• <u>Do not allow spray to contact okra plants.</u></li> </ul>
	<u>2</u>	<u>Postemergence Directed Spray</u>	<u>2.0 pts./A</u>	<u>Ground: 20 gals.</u>	<u>21 days</u>	
<u>ONION (dry bulb)</u>	<u>1</u>	<u>Preemergence Broadcast</u>	<u>2.0-4.0 pts./A</u>	<u>Ground: 20 gals.</u>	<u>=</u>	<ul style="list-style-type: none"> <li>• <u>Only 2 applications can be made per season.</u></li> <li>• <u>Do not exceed 6.0 pts./A per season.</u></li> <li>• <u>Use the higher rate for heavy weed infestations or wild oat control.</u></li> <li>• <u>For preemergence treatment, allow maximum weed control and grass emergence prior to treatment but apply before crop emergence.</u></li> </ul>
	<u>1</u>	<u>Postemergence Directed Spray</u>	<u>2.0 pts./A</u>	<u>Ground: 20 gals.</u>	<u>60 days</u>	
<u>SOYBEAN</u>	<u>3</u>	<u>Spot Spray</u>	<u>4.8 pts./100 gals. water</u>	<u>=</u>	<u>Forage/Hay:</u> <u>46 Days</u>	<ul style="list-style-type: none"> <li>• <u>Do not allow spray to contact soybean plant as crop injury or death may occur.</u></li> <li>• <u>Spray the solution on actively growing weeds until uniformly wet but not to the point of runoff.</u></li> </ul>
<u>SOYBEANS</u>	<u>3</u>	<u>Postemergence Directed Spray</u> <u>(Includes Hooded or Shielded)</u>	<u>1.0-2.0 pts.</u>	<u>Ground: 10 gals.</u>	<u>Forage: 46 days</u>	<ul style="list-style-type: none"> <li>• <u>Apply when weeds are actively growing.</u></li> <li>• <u>For control of seedling johnsongrass, crabgrass, goosegrass, brachiaria, Texas millet and pigweed less than 2" tall, use the lower rate of Gramoxone Inteon.</u></li> <li>• <u>For control of 2-4 " red rice, Brachiaria, barnyardgrass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, and fall panicum, use 2.0 pts. of Gramoxone Inteon.</u></li> <li>• <u>For control of 2-3" sicklepod, purslane,</u></li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
			<u>4.5-8.0 fl. oz.</u>	<u>Ground: 10 gals.</u>	<u>Forage: 48 days</u>	<p><u>pigweed, cutleaf ground cherry, and common ragweed, use 2.0 pts. of Gramoxone Inteon.</u></p> <ul style="list-style-type: none"> <li>For control of 2-4" grasses in mixture with common cocklebur, morningglory, and red rice, apply Gramoxone Inteon at 2.0 pts. plus 0.2 lb. active ingredient per acre of a 2,4-DB formulation.</li> <li>Refer to the 2,4-DB label for directions, limitations, and cautions.</li> <li>If needed make a second and final application 7-14 days later.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> <li>Use higher rate on larger (&gt;6") or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>Severe damage and/or complete kill can occur if spray intentionally or accidentally (including drift of fine droplets) contacts the plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>Do not treat if soybeans are less than 8" tall.</li> <li>Use precision directed spray application equipment adjusted so that no more than the lower 3" of the soybean plant is contacted by the application spray.</li> <li>Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>
<u>SOYBEANS</u>	<u>3</u>	<u>Harvest Aid</u>	<u>1.0-2.4 pts.</u>	<u>Ground: 20 gals.</u> <u>Air: 5 gals.</u>	<u>3</u>	<ul style="list-style-type: none"> <li>Indeterminant varieties: Apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
						<ul style="list-style-type: none"> <li>Determinant varieties: Apply when plants are mature, i.e. beans are fully developed, 1/2 of leaves have dropped, and remaining leaves are yellowing.</li> <li>Immature soybeans will be injured.</li> <li>Mature cocklebur, especially drought-stressed plants, are tolerant to Gramoxone Inteon and desiccation will not be complete. Always use the higher rate for cocklebur.</li> <li>Do not apply within 3 days of harvest.</li> </ul>
<u>TANIER</u>	1	<u>Preemergence Broadcast or Banded Over Row</u>	<u>2.0-4.0 pts./A</u>	<u>Ground: 20 gals.</u>	-	<ul style="list-style-type: none"> <li>Preemergence applications must be made before crop emergence.</li> <li>Postemergence/directed spray applications must be made with ground equipment that can direct the spray between the rows and shield to prevent spray contact with crop plants.</li> <li>Only 2 applications can be made per season.</li> <li>Do not exceed 6.0 pts. per season.</li> <li>Allow 30-60 days between applications if 2 applications are made.</li> <li>Do not apply in less than 20 gallons of water/acre.</li> <li>Do not allow spray to contact plants.</li> </ul>
	1	<u>Postemergence Directed Spray</u>	<u>2.0 pts./A</u>			
<u>WHEAT</u>	1	<u>Harvest Aid</u>	<u>2 pts.</u>	<u>Ground: 10 gals. Air: 5 gals.</u>	<u>Grain: 3 days</u>	<ul style="list-style-type: none"> <li>Add nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of finished spray.</li> <li>Apply after hard dough stage.</li> <li>Apply at least 3 days before grain and straw harvest.</li> <li>Can be used on wheat grown for seed.</li> <li>Apply no more than 2.0 pts./A for this use per season.</li> <li>Immature wheat plants will be injured.</li> <li>Drought-stressed plants are tolerant to Gramoxone Inteon and desiccation will not be complete.</li> </ul>
<u>WHEAT</u>	2	<u>Spot Spray</u>	<u>4.8 pts./100 gals. water</u>		<u>Forage/Hay: 45 days</u>	<ul style="list-style-type: none"> <li>Immature wheat plants will be injured.</li> <li>Always add 1/3 to 1/2 fl. oz. of a</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
						<u>nonionic surfactant for each gallon of spray.</u> <ul style="list-style-type: none"><li>• <u>Spray the solution on actively growing weeds until uniformly wet, but not to the point of runoff.</u></li><li>• <u>The application can be made prior to heading.</u></li></ul>

GRAMOXONE INTEON 1217 SUPPLEMENTAL – pd – 11/11/05

**RESTRICTED USE PESTICIDE  
DUE TO ACUTE TOXICITY**  
FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR  
PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE  
USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

**SUPPLEMENTAL LABEL FOR GRAMOXONE INTEON™**

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:	
Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) .....	30.1%
Other Ingredients:	69.9%
Total:	100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon.  
Contains alerting agent (odor), emetic, dye and Inteon Technology.

**KEEP OUT OF REACH OF CHILDREN.**

**DANGER/PELIGRO**



**POISON**

- **NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.**
- **IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.**
- **DO NOT USE OR STORE IN OR AROUND THE HOME.**
- **DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.**
- **THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

EPA Reg. No.100-1217  
EPA Est. 100-TX-001

Syngenta Crop Protection, Inc.  
Greensboro, NC 27409  
[www.syngenta-us.com](http://www.syngenta-us.com)



## DIRECTIONS FOR USE

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
COTTON	3	Postemergence Directed Spray (Hooded or Shielded)	1.2-2.0 pts.	Ground: 10 gals.	-	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing and between 1-6" in height.</li> <li>• Use higher rate on dense populations and/or larger or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• AVOID CONTACT WITH CROP. Intentional or accidental contact (including drift) of Gramoxone Inteon with the crop may result in severe damage or loss of the crop.</li> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent contact with crop plants.</li> <li>• Equipment should be in good operating condition. Avoid leakage or dripping onto crop. Variation in equipment design may affect level of weed control.</li> <li>• Keep hoods or shields adjusted to insure adequate contact with weeds while shielding the crop from the herbicide.</li> <li>• To minimize drift, do not use nozzles or nozzle configurations or adjuvants which produce fine spray droplets (mist).</li> <li>• May be tank mixed with other postemergence directed herbicides. Unless otherwise instructed on this label, refer to tank mix product label for rates, directions, limitations and cautions.</li> </ul>



Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
GINGER	6	Preemergence Broadcast, Postemergence, Directed Spray	2.0-4.0 pts.	Ground: 20 gals.	14 days for immature ginger roots, 75 days for mature ginger roots	<ul style="list-style-type: none"> <li>Apply as a preemergence broadcast application before, during, or after planting but prior to crop emergence.</li> <li>Do not allow spray to contact ginger plants.</li> </ul>
OKRA	1	Preemergence Broadcast	2.0-4.0 pts./A	Ground: 20 gals.	--	<ul style="list-style-type: none"> <li>Preemergence applications must be made before crop emergence.</li> <li>Apply no more than 3 applications per season.</li> <li>Do not exceed 8.0 pts./A per season.</li> <li>Do not allow spray to contact okra plants.</li> </ul>
	2	Postemergence Directed Spray	2.0 pts./A	Ground: 20 gals.	21 days	
ONION (dry bulb)	1	Preemergence Broadcast	2.0-4.0 pts./A	Ground: 20 gals.	--	<ul style="list-style-type: none"> <li>Only 2 applications can be made per season.</li> <li>Do not exceed 6.0 pts./A per season.</li> <li>Use the higher rate for heavy weed infestations or wild oat control.</li> <li>For preemergence treatment, allow maximum weed control and grass emergence prior to treatment but apply before crop emergence.</li> </ul>
	1	Postemergence Directed Spray	2.0 pts./A	Ground: 20 gals.	60 days	
SOYBEAN	3	Spot Spray	4.8 pts./100 gals.water	-	Forage/Hay: 46 Days	<ul style="list-style-type: none"> <li>Do not allow spray to contact soybean plant as crop injury or death may occur.</li> <li>Spray the solution on actively growing weeds until uniformly wet but not to the point of runoff.</li> </ul>
SOYBEANS	3	Postemergence Directed Spray (Includes Hooded or Shielded)	1.0-2.0 pts.	Ground: 10 gals.	Forage: 46 days	<ul style="list-style-type: none"> <li>Apply when weeds are actively growing.</li> <li>For control of seedling johnsongrass, crabgrass, goosegrass, brachiaria, Texas millet and pigweed less than 2" tall, use the lower rate of Gramoxone Inteon.</li> <li>For control of 2-4 " red rice, <i>Brachiaria</i>, barnyardgrass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, and fall panicum, use 2.0 pts. of Gramoxone Inteon.</li> <li>For control of 2-3" sicklepod, purslane,</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
			4.5-8.0 fl. oz.	Ground: 10 gals.	Forage: 46 days	<p>pigweed, cutleaf ground cherry, and common ragweed, use 2.0 pts. of Gramoxone Inteon.</p> <ul style="list-style-type: none"> <li>For control of 2-4" grasses in mixture with common cocklebur, morningglory, and red rice, apply Gramoxone Inteon at 2.0 pts. plus 0.2 lb. active ingredient per acre of a 2,4-DB formulation.</li> <li>Refer to the 2,4-DB label for directions, limitations, and cautions.</li> <li>If needed make a second and final application 7-14 days later.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> <li>Use higher rate on larger (&gt;6") or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>Severe damage and/or complete kill can occur if spray intentionally or accidentally (including drift of fine droplets) contacts the plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>Do not treat if soybeans are less than 8" tall.</li> <li>Use precision directed spray application equipment adjusted so that no more than the lower 3" of the soybean plant is contacted by the application spray.</li> <li>Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>
SOYBEANS	3	Harvest Aid	1.0-2.4 pts.	Ground: 20 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>Indeterminant varieties: Apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less.</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
						<ul style="list-style-type: none"> <li>Determinant varieties: Apply when plants are mature, i.e, beans are fully developed, 1/2 of leaves have dropped, and remaining leaves are yellowing.</li> <li>Immature soybeans will be injured.</li> <li>Mature cocklebur, especially drought-stressed plants, are tolerant to Gramoxone Inteon and desiccation will not be complete. Always use the higher rate for cocklebur.</li> <li>Do not apply within 3 days of harvest.</li> </ul>
TANIER	1	Preemergence Broadcast or Banded Over Row	2.0-4.0 pts./A	Ground: 20 gals.	-	<ul style="list-style-type: none"> <li>Preemergence applications must be made before crop emergence.</li> <li>Postemergence/directed spray applications must be made with ground equipment that can direct the spray between the rows and shield to prevent spray contact with crop plants.</li> <li>Only 2 applications can be made per season.</li> <li>Do not exceed 6.0 pts. per season.</li> <li>Allow 30-60 days between applications if 2 applications are made.</li> <li>Do not apply in less than 20 gallons of water/acre.</li> <li>Do not allow spray to contact plants.</li> </ul>
	1	Postemergence Directed Spray	2.0 pts./A			
WHEAT	1	Harvest Aid	2 pts.	Ground: 10 gals. Air: 5 gals.	Grain: 3 days	<ul style="list-style-type: none"> <li>Add nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of finished spray.</li> <li>Apply after hard dough stage.</li> <li>Apply at least 3 days before grain and straw harvest.</li> <li>Can be used on wheat grown for seed.</li> <li>Apply no more than 2.0 pts./A for this use per season.</li> <li>Immature wheat plants will be injured.</li> <li>Drought-stressed plants are tolerant to Gramoxone Inteon and desiccation will not be complete.</li> </ul>
WHEAT	2	Spot Spray	4.8 pts./100 gals. water		Forage/Hay: 45 days	<ul style="list-style-type: none"> <li>Immature wheat plants will be injured.</li> <li>Always add 1/3 to 1/2 fl. oz. of a</li> </ul>

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
						nonionic surfactant for each gallon of spray. <ul style="list-style-type: none"><li>• Spray the solution on actively growing weeds until uniformly wet, but not to the point of runoff.</li><li>• The application can be made prior to heading.</li></ul>

GRAMOXONE INTEON 1217 SUPPLEMENTAL CLEAN – pd – 11/11/05

PULL HERE TO OPEN ►

## RESTRICTED USE PESTICIDE

DUE TO ACUTE TOXICITY

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.



### Herbicide

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) ..... 30.1%

Other Ingredients: ..... 69.9%

Total: ..... 100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon. Contains alerting agent (odor), emetic, dye and Inteon Technology.

- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

**KEEP OUT OF REACH OF CHILDREN.**

**DANGER/ POISON**  
**PELIGRO** 

*Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)*

EPA Reg. No. 100-1217

EPA Est. 100-TX-001

SCP 1217A-L1 0805

**2.5 gallons**

Net Contents

**syngenta**

SCP 130-1217A-L1

## Gramoxone Inteon™

<b>FIRST AID</b> <b>Contains Paraquat, a Bipyridylum Herbicide</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• <b>SPEED IS ESSENTIAL.</b> Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fullers Earth.</li> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• The odor of this product is from the alerting agent, which has been added, not from the paraquat.</li> <li>• If person is not breathing, call 911 or an ambulance.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<p style="text-align: center;"><b>NOTE TO PHYSICIAN</b></p> <p>Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment' (<a href="http://www.syngenta.com/pqmedguide/">http://www.syngenta.com/pqmedguide/</a>). Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.</p>	
<p style="text-align: center;">Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	
<p style="text-align: center;"><b>HOT LINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call <b>1-800-888-8372</b></p>	

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS



**DANGER / POISON**  
**PELIGRO**

May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist NIOSH-approved respirator with any N, R, P, or HE filter. Causes substantial but temporary eye injury. Wear protective eyewear (face shield required when mixing/loading). Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing. Avoid contact with skin.

**IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

#### **Personal Protective Equipment (PPE)**

**Applicators and other handlers (other than Mixers and Loaders) must wear:**

- Long-sleeve shirt and long pants
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter

## Gramoxone Inteon™

### Mixers and Loaders must wear:

- Long-sleeve shirt and long pants
- Shoes plus socks
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- Chemical resistant apron
- Face shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### User Safety Recommendations

#### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### Environmental Hazards

**Wildlife:** This product is toxic to wildlife. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

**Drift:** Gramoxone Inteon is a contact herbicide that desiccates all green plant tissue. Paraquat dichloride is a nonselective herbicide and will cause damage to nontarget crops and plants if off-target movement occurs. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion. Refer to the local state laws, regulations, guidelines and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement.

### Physical and Chemical Hazards

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and Buyer and User assume the risk of any such use. SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

## Gramoxone Inteon™

In no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. IT IS THE MANUFACTURER'S INTENTION THAT THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitations of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

### DIRECTIONS FOR USE

#### RESTRICTED USE PESTICIDE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSES OR PLAY-GROUNDS.**

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**For Preplant or Preemergence (Broadcast or Banded), Chemical Fallow, Postemergence Directed Spray, Early Postemergence Broadcast in Peanuts and Dormant Season Applications, and "Between Cutting" Applications in Alfalfa:** Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

**For Harvest Aid and Desiccation Applications:** Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton).

#### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

**DO NOT** enter or allow others to enter the treated area until sprays have dried. **AVOID** working in spray mist.

**KEEP** all unprotected persons out of operating areas or vicinity where there may be danger of drift.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

#### GENERAL INSTRUCTIONS AND INFORMATION

**Do not apply this product through any type of irrigation system.**

When Gramoxone Inteon is applied at less than 10 gallons per acre finished spray volume, a drift control or spray deposition additive **SHOULD** be used. Refer to the additive label for use directions.

##### Spray Drift Information

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.



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The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

- The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
- Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45°.

Where states have more stringent regulations, they shall be observed.

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information**.

### **Aerial Drift Reduction Advisory Information**

(This section is advisory in nature and does not supersede the mandatory label requirements.)

#### **Information on Droplet Size**

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

#### **Controlling Droplet Size**

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

#### **Boom Length**

For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

#### **Application Height**

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making application at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

#### **Swath Adjustment**

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

#### **Wind**

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

#### **Temperature and Humidity**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

#### **Temperature Inversions**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that move upward and rapidly dissipates indicates good vertical air mixing.

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### Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

### GENERAL INFORMATION

Gramoxone Inteon is a contact herbicide used to control or suppress a broad spectrum of emerged weeds. Gramoxone Inteon controls most small annual weeds – both broadleaves and grasses, and suppresses perennial weeds by destroying green foliage. Gramoxone Inteon can also be used as a desiccant/defoliant at harvest.

Gramoxone Inteon is formulated as a liquid which contains 2 pounds of active ingredient per gallon. The formulation contains a nontoxic odor and an emetic (an agent which will induce vomiting if the product is swallowed). The odor is included in the formulation to help prevent accidental ingestion of Gramoxone Inteon.

Gramoxone Inteon is rapidly absorbed by green plant tissue and interacts with the photosynthetic process to produce superoxides which destroy the plant cells. Gramoxone Inteon requires actively growing green plant tissue to function. Thorough coverage of all green foliage is essential for effective weed control and for effective crop desiccation/defoliation. Gramoxone Inteon is not as effective on drought-stressed weeds, weeds with little green foliage (i.e., mowed or cut weeds), or mature woody bark of trees and vines.

Clay and organic matter rapidly tie up Gramoxone Inteon. As a result, Gramoxone Inteon has no residual soil activity to affect later-planted crops or later germinating weeds.

### ROTATIONAL CROPS

All rotational crops may be planted immediately after the last application of Gramoxone Inteon.

### RAINFASTNESS

Because Gramoxone Inteon is rapidly absorbed by the weed foliage, rain occurring 15-30 minutes or more after application will have no effect on the activity of Gramoxone Inteon.

### APPLICATION

Since Gramoxone Inteon is a contact-type herbicide, it is essential to obtain complete coverage of target weeds to get good control. Improper application technique and/or application to large, stressed, or mown weeds will usually result in unacceptable weed control and unacceptable crop desiccation/defoliation. Complete coverage is also essential for good crop desiccation/defoliation. See details below for specific application instructions.

### USE OF A NONIONIC SURFACTANT OR CROP OIL CONCENTRATE

Always add one of the following (failure to use one of the following at recommended rates will result in reduced performance of Gramoxone Inteon).

**Nonionic Surfactant:** Add nonionic surfactant containing 75% or more surface-active agent at a minimum of 0.125% v/v (1 pt./100 gals.), or add a nonionic surfactant containing 50-74% surface-active agent at a minimum of 0.25% v/v (2 pts./100 gals.), of the finished spray volume for ground applications. For aerial applications, add a nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume.

**Crop Oil Concentrate:** Add a nonphytotoxic crop oil concentrate or methylated seed oil containing 15-20% approved emulsifier, at 1.0% v/v (1 gal./100 gals.) of the finished spray volume for ground applications. For aerial applications, add 1 pint of crop oil concentrate per acre. Do not use crop oil concentrate when using Gramoxone Inteon for cotton harvest aid.

### NOZZLE SELECTION

The use of flat-fan nozzles will result in the most effective application of Gramoxone Inteon. Flood nozzles are generally not as good as flat fans since they produce large uneven droplets. The use of flood nozzles may result in reduced weed control due to inadequate coverage.

WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE, USE ONLY FLAT FAN NOZZLES AS RECOMMENDED IN THE CHART BELOW.

Table 1. Recommended Nozzles, Pressures and Setup.

	Nozzle Type	
	Flat Fan	Flood
Maximum Size	8	15
Spray Pressure (at nozzle)	30-50 psi	30-50 psi
Maximum Nozzle Spacing	30"	40"
Direction of Spray Pattern	Down	Down
Maximum Speed	10 mph	10 mph
Spray Overlap (at each edge)	30%	50%

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### Flat-Fan Nozzles 30% (60% Total) Overlap



### Flood Nozzles 50% (100% Total) Overlap



Using nozzles, pressures, or setups different from the above chart will result in reduced control.

#### SPRAY CARRIER

Always use clean water (free of mud or clay), clear liquid nitrogen, or complete clear liquid fertilizers as the carrier when spraying Gramoxone Inteon. Muddy water, or suspension-type fertilizers containing clay, can inactivate Gramoxone Inteon. Never use suspension-type fertilizers containing clay as the spray carrier. If using a complete clear liquid fertilizer containing high phosphate levels as the spray carrier, always use the higher rate of Gramoxone Inteon and surfactant.

Note: When using liquid fertilizers such as 28% N as a spray carrier, it is important that nonionic surfactant still be used with Gramoxone Inteon. Liquid fertilizer carriers cannot substitute for surfactant.

#### RATES OF GRAMOXONE INTEON

Follow recommended rates listed with each use of Gramoxone Inteon. Use the higher label rates when weeds are dense or large. Also, use higher label rates for harvest aid when crop vegetation is dense. For broadcast applications of Gramoxone Inteon with backpack sprayers, the application rate should not exceed 0.50 lbs. a.i./A (one quart) in a minimum of 30 gallons of spray solution per acre.

#### SPRAY VOLUME

Follow recommended minimum spray volumes listed with each use of Gramoxone Inteon. These are minimum volumes only, and spray volumes should be increased as necessary to obtain complete coverage of the target weed or plant without runoff from the foliage.

WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE, TARGET WEEDS SHOULD NOT EXCEED 6 INCHES IN HEIGHT.

#### APPLICATION TIMING

Gramoxone Inteon should be applied to emerged weeds when they are small. Weeds 1-6 inches in height are the easiest to control. Larger weeds may be more difficult to control. When weeds have been grazed or mowed, thus removing much of the green foliage, allow the weeds to regrow to a height of 2-4 inches before spraying if possible. Similarly, when forage or grain crops have been harvested prior to spraying, weeds present in the field will also have been cut. To allow for adequate green foliage to remain on weeds in this situation, raise cutter bars as high as possible from the ground to cut stubble and weeds at a greater height.

#### BURNDOWN OF GRASS COVER CROPS OR VOLUNTEER CEREALS

When using Gramoxone Inteon for control of grass cover crops or volunteer cereals, best results are obtained when Gramoxone Inteon is applied prior to tillering or after boot stage. This is especially important with a wheat cover crop or volunteer wheat. Treatments made between tillering and boot stage will generally not provide complete control. Do not expect complete control of perennial cover crops.

#### ENVIRONMENTAL CONDITIONS

Gramoxone Inteon is active over a wide range of environmental conditions. Cool weather (below 55°) will slow the activity of Gramoxone Inteon, as will cloudy, overcast weather, but will not affect performance.

#### SPOT SPRAYING

When only small areas are to be sprayed with labeled applications, it is advantageous to mix small quantities of Gramoxone Inteon. To aid in mixing small quantities, the following table should be consulted.

If The Broadcast Rate Per Acre for Gramoxone Inteon is:	Add The Following Amount of Gramoxone Inteon To 1 Gallon of Water
1 1/2 pts.	1/3 fl. oz.
2 pts.	3/8 fl. oz.
2 1/2 pts.	1/2 fl. oz.
3 pts.	2/3 fl. oz.

Always add 1/3-1/2 fl. oz. of a nonionic surfactant for each gallon of spray. When spot spraying in this manner, spray to thoroughly wet the foliage, but not to the point of runoff.

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### TANK MIXING FOR IMPROVED BURNDOWN OF DIFFICULT WEEDS AND RESIDUAL WEED CONTROL

#### Photosynthetic Inhibitor Herbicides

Difficult weeds can often be controlled by tank mixing Gramoxone Inteon with other herbicides. The addition of herbicides which are also photosynthetic inhibitors (PSI) will slow the activity of Gramoxone Inteon, allowing Gramoxone Inteon to thoroughly distribute itself within the treated leaf. The resulting level of control is usually greater than if Gramoxone Inteon was applied alone.

Gramoxone Inteon may be applied in tank mixture with the following PSI herbicides:

AAtrex® Herbicide  
Atrazine  
Bicep MAGNUM®  
Bicep II MAGNUM® Herbicide  
Bicep Lite II MAGNUM® Herbicide  
Boundary® 6.5EC Herbicide  
Canopy® Herbicide  
Caparol® 4L Herbicide  
Cotoran® Herbicide  
Lorox® Herbicides  
Lorox Plus® Herbicide  
Princep® Herbicide  
Sencor® Herbicide  
Sinbar® Herbicide  
Spike® Herbicide

Refer to respective product label(s) for rates of application, directions for use, limitations, cautions and for a list of weeds controlled.

#### Improved Weed Control With PSIs

Control of difficult weeds listed below and annual grass control will be enhanced by the addition of a PSI herbicide. For best results a second application is needed.

Barnyardgrass	Horseweed (Marestail)
Broadleaf signalgrass	Morningglory
Cheatgrass	Pennsylvania Smartweed
Cocklebur	Perennial Weeds (suppression only)
Fall Panicum	Prickly lettuce
Giant Ragweed	Sedges
Knotweed	Tansymustard
Kochia	Velvetleaf
Lambsquarters	Volunteer wheat
Malva (Cheeseweed)	Spiderwort

#### Improved Control of Perennial and Annual Broadleaf Weeds

When perennial broadleaf weeds such as Canada thistle, bindweed, dandelion, etc. or difficult to control annual broadleaf weeds such as giant ragweed or morningglory are present, tank mixes with 2,4-D ester (Low Volatile), 2,4-DB, Clarity®, Banvel®, or Flexstar® where labeled, will help improve control. Tank mixing the amine formulation of 2,4-D with Gramoxone Inteon may result in reduced grass control.

#### Order of Tank Mixing

In general, Gramoxone Inteon tank mixes with other products should be mixed as follows:

1. Fill spray tank 1/2 full with clean water or other approved carriers such as clear liquid fertilizer.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add dry formulations (WP, DF, etc.) to tank.
4. Add liquid formulations (SC, EC, L, etc.) to tank.
5. Add Gramoxone Inteon to tank.
6. Add nonionic surfactant to tank.
7. Fill remainder of spray tank.

Always refer to labels of other pesticide products for mixing directions and precautions which may differ from those outlined here.

Since many of the herbicides listed on this label are available in several types of formulations, it is advisable to perform a jar test to check physical compatibility.

### PRECAUTIONS AND RESTRICTIONS

#### EQUIPMENT/CONTAINER

Flush all spray equipment with water after use each day. Gramoxone Inteon is corrosive to aluminum. Aluminum spray equipment and aluminum aircraft structures that are exposed to spray solution or spray drift should be flushed thoroughly with water immediately after use.

In dry areas, dust stirred up by high winds or equipment tires can coat weed or plant leaves and reduce Gramoxone Inteon activity. Avoid applying Gramoxone Inteon in extremely dusty conditions.

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### LIMITATIONS AND PRECAUTIONS

- For Cotton Harvest Aid: Do not pasture livestock in treated fields or feed treated foliage.
- **DO NOT** use around home gardens, schools, recreational parks, or playgrounds.
- In preplant and preemergence (to the crop) uses, do not apply to soils lacking clay minerals, i.e., peat, muck, pure sand, artificial planting media.
- Seedbeds and plantbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence prior to treatment.
- To reduce germination of new weeds, seeding or transplanting should be done with a minimum amount of soil disturbance.
- Gramoxone Inteon used for preplant weed control over the top of plastic mulch may damage transplants which come in contact with the plastic. Sufficient rainfall or sprinkler irrigation to cause wash-off prior to planting may be needed to prevent damage to the crop.
- Weeds and grasses emerging after application of Gramoxone Inteon will not be controlled or suppressed.
- Unless otherwise indicated, crop plants emerged at time of application may be severely injured or killed if contacted by sprays of Gramoxone Inteon.

### APPLICATION INSTRUCTIONS AND CROP USE DIRECTIONS

The following tables indicate use patterns, rates, minimum spray volumes, preharvest intervals and other precautions, restrictions and comments specific to each crop. Read and follow directions carefully.

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
ALFALFA New seedlings (California only)	1	Broadcast	1.0-2.0 pts. See Table 2.	Ground: 10 gals. Air: 5 gals.	70	<ul style="list-style-type: none"> <li>• Apply during late winter or early spring.</li> <li>• Do not cut or harvest within 70 days after application.</li> <li>• Do not apply more than once during the first growing season.</li> <li>• Caution: Seedling alfalfa stands will be reduced and replanting may be necessary.</li> <li>• Not recommended for seedling alfalfa grown for seed.</li> <li>• Alfalfa foliage present at time of application will be burned.</li> </ul>
ALFALFA (No-till or conventional planting)	2	Preplant or Preemergence Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Apply prior to emergence of the crop.</li> <li>• Crop plants emerged at time of application will be killed.</li> <li>• Seeding should be done with a minimum amount of soil disturbance.</li> </ul>
ALFALFA Dormant season on established plantings Region A - See map at end of Alfalfa section.	1	Broadcast	2.0-3.0 pts.	Ground: 10 gals. Air: 5 gals.	42	<ul style="list-style-type: none"> <li>• For control of weeds, including bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dogfennel, tansymustard, london rocket, sowthistle, rescue brome, wild oats, and other winter annuals; and suppression of perennial weeds.</li> <li>• Do not apply if fall regrowth following last fall cutting is greater than 6", or if spring regrowth is more than 2".</li> <li>• Apply to well-established stands (at least 1-year old) after the crop is dormant.</li> <li>• Alfalfa foliage present at the time of application will be burned which may reduce the yield of the first cutting.</li> <li>• Do not cut or harvest within 42 days of application.</li> <li>• Do not apply more than once per season.</li> <li>• Tank mix with metribuzin (Sencor) for improved burndown of weed vegetation and residual weed control. Consult the metribuzin product label for a list of weeds controlled, rates of application, and precautions.</li> </ul>

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
ALFALFA  Dormant season tank mix with Velpar® L herbicide Region A - See map at end of alfalfa section.	2	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 10 gals.	42	<ul style="list-style-type: none"> <li>For control of weeds such as chickweed, downy brome and tansymustard.</li> <li>Use the 1.0 pt. rate of Gramoxone Inteon when weeds and grasses are less than 4" tall.</li> <li>Mix with 1-2 qts. of Velpar L per acre.</li> <li>Use the lower rate of Velpar L on loamy sands or sandy loams. Refer to Velpar L label for directions, limitations, cautions and for a list of weeds controlled.</li> <li>Apply once to established alfalfa stands during the dormant season.</li> <li>Do not apply if fall regrowth following last fall cutting is greater than 6", or if spring regrowth is more than 2".</li> <li>Do not apply to alfalfa during the first season after seeding.</li> <li>Temporary chlorosis may occur on alfalfa regrowth.</li> <li>Stress which may be caused in part by low fertility, disease, insects, winterkill, over cutting, drought or frost may increase the chances of crop injury.</li> <li>DO NOT USE on gravelly or rocky soils, exposed subsoils, hardpan, sand or poorly drained alkaline soils as crop injury, including mortality, may result.</li> <li>Do not cut or harvest within 42 days of application.</li> </ul>
ALFALFA  Dormant Season  On established plantings: Region B-See map at end of Alfalfa section.	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals; and suppression of perennial weeds.</li> <li>Apply during late fall or winter months after the last fall cutting and before first spring cutting.</li> </ul>
On fall-seeded, newly established stands less than 1- year-old: Region A- See map at end of Alfalfa section.	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>In the California counties of Orange, Riverside and all counties north of these counties, do not apply if spring regrowth after grazing or cutting is more than 2". In all other areas within Region B, do not apply if regrowth after grazing or cutting is more than 2".</li> <li>Do not harvest within 60 days of application.</li> </ul>
On fall-seeded, newly established stands less than 1- year-old: Region B- See map at end of Alfalfa section.	1	Broadcast	0.75-1.25 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>CAUTION: Applications to alfalfa that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green alfalfa foliage present at the time of application will be burned.</li> <li>Total hay yield of first cutting may be reduced in alfalfa fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight.</li> <li>Do not apply more than once per season.</li> <li>Tank mix with metribuzin (Sencor) for improved burndown of weed vegetation and residual weed control in dormant established (at least 1-year old) alfalfa. Consult the metribuzin product label for a list of weeds controlled, rates of application, and precautions.</li> <li>Do not apply tank mix with metribuzin on newly established (less than 1-year old) alfalfa.</li> </ul> <p>California</p> <ul style="list-style-type: none"> <li>For desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.</li> <li>Use high rate if ryegrass, shepherdspurse, sowthistle or groundsel is present.</li> </ul>

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
ALFALFA  Between-cuttings treatment in established plantings. (Includes first year alfalfa) (All states East of the Rocky Mountains)	3	Broadcast	1.0 pt.	Ground: 10 gals.	30	<ul style="list-style-type: none"> <li>• Weeds much beyond the seedling stage and the stubble of weeds cut off during harvest will be less affected by this treatment.</li> <li>• Apply immediately after alfalfa has been removed for hay or silage.</li> <li>• Do not treat more than 5 days after cutting.</li> <li>• CAUTION: First year alfalfa stands and yields may be reduced if alfalfa is allowed to regrow more than 2".</li> <li>• Alfalfa foliage present at time of application will be burned.</li> <li>• In arid areas where moisture is limited, weed control may be reduced.</li> <li>• Do not cut or harvest within 30 days of application.</li> <li>• Make 1-3 applications, as needed, during the growing season. These sprays may be applied in addition to a dormant application.</li> <li>• For first year alfalfa, do not apply more than twice during the first growing season.</li> </ul>
ALFALFA (For use only in the following states: ID, MT, NV, OR, UT, WA, WY)  Desiccation of alfalfa to facilitate harvest of alfalfa seed  Gramoxone Inteon/Reglone® Tank Mix	2	Broadcast	2.5-4.0 pts.	Ground: 20-25 gals. Air: 5-10 gals.	See Precautions	<ul style="list-style-type: none"> <li>• Do not harvest until at least 4 days after application.</li> <li>• Do not apply when weather conditions favor drift from treated areas.</li> <li>• Do not apply by ground equipment within 25 ft., or by air within 75 ft. of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds.</li> <li>• For use only on fields in production of alfalfa seed. Not for use on fields producing alfalfa for livestock feed. No portion of the treated field, including seed, seed screenings, hay forage, or stubble, may be used for human or animal feed.</li> <li>• Do not cut current year's treated alfalfa seed crop for hay or forage. Do not graze current year's treated alfalfa seed crops.</li> <li>• Treated alfalfa seed is not to be used for sprouting. All alfalfa seed treated with Gramoxone Inteon/Reglone tank mix is to be tagged at processing plants, "NOT FOR HUMAN CONSUMPTION". It shall be the grower's responsibility to notify the processing plants of any seed crop treated with Gramoxone Inteon/Reglone tank mix.</li> <li>• Screenings from alfalfa seed processing are prohibited from feed channels. All Gramoxone Inteon/Reglone treated alfalfa seed screenings must be removed from the feed market.</li> </ul>
		Broadcast	2.0-4.0 pts. Gramoxone Inteon/ 2 pts. Reglone	Ground: 20-25 gals. Air: 5-10 gals.	See Precautions	

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
ALMONDS	5	Directed Spray	1.25-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems (except suckers) or foliage.</li> <li>Use a shield or wrap plant when spraying around young trees or vines.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>Do not apply when nuts to be harvested are on the ground.</li> <li>For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatments may be necessary.</li> </ul>
ARTICHOKE (Globe)	3	Directed Spray	2.5-4.0 pts.	Ground: 20-100 gals.	1	<ul style="list-style-type: none"> <li>Up to 3 applications per season, do not exceed 8 pts. per season.</li> <li>Applications at least 7 days apart.</li> <li>Do not harvest within 24 hours of last application.</li> </ul>
ASPARAGUS	3	Preplant or Preemergence Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply prior to emergence of the crop.</li> <li>Crop plants emerged at time of application will be killed.</li> </ul>
ASPARAGUS Preemergence to established plantings at least 2 years old	3	Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals.	6	<ul style="list-style-type: none"> <li>Apply prior to emergence of crop or after last harvest.</li> <li>Crop plants emerged at time of planting will be killed.</li> </ul>



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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>BEANS, DRY</b>  Sweet lupin White sweet lupin White lupin Grain lupin  Adzuki beans Asparagus beans Black beans Broad beans Field beans Garbanzo beans Kidney beans Lablab beans Lima beans Moth beans Mung beans Navy beans Pinto beans Rice beans Snap beans Tepary beans Urd beans Wax beans  Blackeyed peas Chickpeas Cowpeas Crowder peas Southern peas  Catjang Guar	2	Harvest-Aid	1.2-2.0 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>• Add spreader (nonionic) at 1 qt./100 gals. of spray mix.</li> <li>• For vining type beans or bush type with lush growth, use a single application of the higher rate.</li> <li>• May also be applied as a split application. <b>DO NOT</b> make more than 2 applications or exceed a total of 2.0 pts./A. The split application may improve vine coverage.</li> <li>• Apply when the crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 40% (bush type peas or beans) or 30% (vine type peas or beans) of the leaves still green in color.</li> <li>• <b>DO NOT</b> apply when weather conditions favor spray drift. A drift control agent may be included to reduce spray drift.</li> <li>• <b>NOT REGISTERED FOR USE ON DRY BEANS OR DRY PEAS IN CALIFORNIA.</b></li> </ul>
<b>PEAS, DRY</b>  <b>BERRIES</b> Blackberries Blueberries Boysenberries Currant Elderberry Gooseberry Huckleberry Loganberry Raspberries	5	Postemergence Directed Spray	2.0-4.0 pts.	Ground: 50 gals.	—	<ul style="list-style-type: none"> <li>• Apply before emergence of new canes or shoots as injury to those canes or shoots can occur.</li> <li>• Apply as a coarse spray to avoid crop injury from fine spray mist.</li> </ul>
<b>CACAO</b>	5	Directed Spray	2.0-4.0 pts.	Ground: 50-200 gals.	1	<ul style="list-style-type: none"> <li>• Apply when weeds are succulent and growth is from 1-6".</li> <li>• For mature woody weeds, late-germinating weeds and grasses and for perennials; retreatment or spot treatment may be necessary.</li> <li>• Do not allow spray to contact cacao plants as injury may result. Use a shield for young trees.</li> <li>• Do not spray under windy conditions.</li> <li>• Do not graze treated areas or feed treated cover crops to livestock.</li> </ul>
<b>CASSAVAS, TANIERS &amp; YAMS</b> (Puerto Rico only)	3  2	Shielded Post Directed Spray	2.0 pts.	Ground: 50 gals.	90	<ul style="list-style-type: none"> <li>• Apply when weeds are succulent and growth is 1-6".</li> <li>• On cassavas and taniers, do not make more than 3 applications per crop season.</li> <li>• On yams do not make more than 2 applications per crop season.</li> <li>• Do not allow spray to contact cassavas, tanier or yam plants as injury may result.</li> <li>• Do not spray under windy conditions.</li> <li>• Do not graze treated areas or feed treated forage to livestock.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
CHEMICAL FALLOW General Information				Ground: 5 gals. Air: 5 gals.  See Precautions, Restrictions and Comments		<ul style="list-style-type: none"> <li>• Use higher spray volumes for better coverage as density of stubble, crop residue or weeds increase.</li> <li>• To control volunteer wheat or downy brome, fall-applied treatments generally work best with Gramoxone Inteon. If possible, tank mix with Atrazine for maximum burndown and residual control.</li> <li>• Apply from immediately after harvest up to emergence of the newly seeded crop as a broadcast or band treatment.</li> <li>• Cut wheat as high as possible to avoid cutting weeds too short, and allow the weeds to grow at least 2-3" after harvest before applying Gramoxone Inteon.</li> <li>• The addition of dicamba, (Banvel) or 2,4-D ester (Low Volatile) may aid in the suppression of emerged perennial broadleaf weeds and large annual broadleaf weeds.</li> <li>• Refer to 2,4-D ester (Low Volatile), Banvel or residual herbicide label(s) for directions, limitations, cautions and for a listing of weeds controlled.</li> <li>• For extended weed control during the fallow period, tank mixes with registered residual herbicide combinations other than those listed on this label are permissible.</li> <li>• Weeds taller than 6" may not be controlled.</li> <li>• Weeds and grasses emerging after application will not be controlled.</li> <li>• Crop plants emerged at the time of application will be killed.</li> <li>• By ground application, apply 5-60 gallons of spray mix per acre. If applying at &lt;10 GPA by ground, utilize the following additional precautions: <ul style="list-style-type: none"> <li>• Do not apply with floaters or exceed a speed of 10 mph.</li> <li>• Apply with flat fan nozzles only at 30-40 PSI.</li> <li>• Apply only in a tank mix with atrazine at a minimum of 0.5 lb. a.i./A.</li> </ul> </li> <li>• By air, apply in 5-10 gals. of spray mix per acre.</li> </ul>
CHEMICAL FALLOW  Continuous Wheat 2-3 Month Recropping Interval	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Make application at least 45 days prior to seeding.</li> <li>• Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see Photosynthetic Inhibitor Herbicides section) for volunteer wheat or downy brome control in the spring.</li> <li>• Refer to the Chemical Fallow General Information section.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CHEMICAL FALLOW</b>  Wheat-Fallow-Wheat Rotations (Fall applied after harvest; seeded 12-14 months later)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Spray before weeds produce seed.</li> <li>Volunteer wheat and downy brome control are better with late August or early September applications.</li> <li>Tank mix with Atrazine Marksman® Herbicide, or Command® Herbicide for enhanced burndown and residual weed control.</li> <li>Tank mix with metribuzin, (Sencor 75DF) for burndown and residual control of grass and broadleaf weeds.</li> <li>Refer to the product labels for specific use rates for your soil type, use directions, cautions and a list of weeds controlled.</li> <li>Refer to the Chemical Fallow General Information section.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Fallow-Wheat Rotations (Spring applied; seeded 3-5 months later)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Application should be made March 1 to April 15, prior to spring rains to conserve moisture.</li> <li>Volunteer wheat is easier to control after the boot stage, but soil moisture loss will be greater.</li> <li>Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see Photosynthetic Inhibitor Herbicides section) for volunteer wheat or downy brome control in the spring.</li> <li>Refer to the Chemical Fallow General Information section.</li> <li>Tank mix with metribuzin, (Sencor) for burndown and residual control of grass and broadleaf weeds.</li> <li>Refer to the metribuzin, (Sencor) label for use rates for your soil type, use directions, cautions, and weeds controlled.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Annual Crop <sup>1</sup> -Wheat Rotations (Fall applied in wheat stubble)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Tank mix with AAtrex/Atrazine or Marksman for enhanced burndown and residual weed control. Refer to the labels for specific use rates for your soil type, use directions, cautions, and a list of weeds controlled.</li> <li>Spray after wheat harvest and before weeds produce seed. If grasses such as foxtails or barnyardgrass recover, respray before they develop seed.</li> <li>Volunteer wheat and downy brome are easier to control with late August to November applications.</li> <li>Refer to the Chemical Fallow General Information section.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Annual Crop-Wheat Rotations (Spring applied prior to planting an annual crop <sup>1</sup> )  <sup>1</sup> Approved Annual Crops are grain sorghum, corn, wheat, or proso millet.	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Tank mix with AAtrex/Atrazine for enhanced burndown and residual weed control. Refer to the labels for specific use rates for your soil type, use directions, cautions, and a list of weeds controlled.</li> <li>Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see Photosynthetic Inhibitor Herbicides section) for volunteer wheat or downy brome control in the spring.</li> <li>Follow the AAtrex/Atrazine recommendations pertaining to soil pH and recropping intervals.</li> <li>Refer to the Chemical Fallow General Information section.</li> </ul>

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CLOVER AND OTHER LEGUMES<sup>1</sup></b> Dormant Season  On established plantings: Region A- See map at end of Alfalfa section.  On established plantings: Region B- See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1-year-old: Region A- See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1-year-old: Region B- See map at end of Alfalfa section.  <sup>1</sup> Other legumes include velvetbean, lespedeza, lupine, sainfoin, trefoil, vetch, crown vetch, and milk vetch.	1	Broadcast	2.0-3.1 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals, and suppression of perennial weeds.</li> <li>Apply during late fall or winter months after the last fall cutting and before first spring cutting.</li> <li>Do not apply if regrowth after grazing or cutting is more than 2".</li> <li>Do not harvest within 60 days of application.</li> <li>CAUTION: Applications to clover or other legumes that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green clover or other legumes foliage present at the time of application will be burned.</li> <li>Clover or other legumes foliage present at the time of application will be discolored and temporarily stunted.</li> <li>Total hay yield of first cutting may be reduced in clover or other legumes fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight.</li> <li>Do not apply more than once per season.</li> </ul> <b>California</b> <ul style="list-style-type: none"> <li>For desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.</li> <li>Use high rate if ryegrass, shepherdspurse, sowthistle or groundsel is present.</li> </ul>
	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	
	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	
	1	Broadcast	0.75-1.2 pts.	Ground: 10 gals. Air: 5 gals.	60	
<b>CORN</b> <b>FIELD CORN</b> <b>POPCORN</b> <b>SWEET CORN</b> <b>SEED CORN</b> (Used alone)	3	Preplant or Preemergence (Broadcast or Banded Over Row)	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>Includes field, fresh, sweet, forage, fodder and popcorn.</li> <li>Seedbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.</li> </ul>

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
CORN  Tank Mixes for No-till/Reduced Till	3	Preplant or Preemergence (Broadcast or Banded Over Row)	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.*  *Refer to respective product labels to determine if these products can be applied by air.	—	<ul style="list-style-type: none"> <li>• Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>• For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: 2,4-D Ester (Low Volatile), 2,4-D Amine, AAtrex/Atrazine, Balance®, Banvel, Bicep MAGNUM, Bicep II MAGNUM, Bicep Lite II MAGNUM, Callisto®, Clarity, Degree™, Degree Xtra™, Distinct®, Dual MAGNUM, Fultime™, Frontier®, Guardsman®, Harmony® Extra Herbicide (Preplant Only), Harness®, Harness® Xtra, Lorox, Lumax®, Lexar™, Princep, Prowl®.</li> <li>• Gramoxone Inteon may also be tank mixed with Warrior®, Karate®, Ambush® Insecticide.</li> <li>• Refer to respective product label(s) for rates of application, directions for use, limitations, cautions, and for a list of weeds or insects controlled.</li> </ul>
FIELD CORN POPCORN SWEET CORN SEED CORN	3	Postemergence Directed Spray (Including Hooded or Shielded)	1.0-2.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• Use higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray contacts corn plants.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height.</li> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply when corn is at least 10" tall with nozzles arranged to spray no higher than the lower 3" of corn stalks.</li> <li>• Corn plants shorter than 10" may be injured and not recover (corn height measured from soil surface to top of whorl).</li> <li>• For corn greater than 20" tall, arrange the nozzles to spray no higher than the lower 1/3 of the corn stalks.</li> <li>• Corn foliage sprayed will be injured, but the crop will recover and develop normally.</li> </ul>

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FIELD CORN POPCORN SEED CORN	1	Harvest Aid Broadcast	1.2-2.0 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Make ONE (1) application at least 7 days prior to harvest.</li> <li>Apply after the corn is mature after the black layer has formed at the base of the kernels (this indicates maturity). Consult your local agricultural authority for help in identifying the black layer.</li> <li>Add nonionic surfactant containing at least 75% surface active ingredient at 0.25% v/v.</li> <li>Use 2.0 pts. to desiccate mature broadleaf weeds and grasses or broadleaf weeds and grasses that are taller than 18".</li> <li>Drought stressed plants, especially broadleaf weeds can be difficult to kill and desiccation may not be complete.</li> </ul>
FIELD CORN ONLY (grain, fodder, forage)	3	Postemer- gence directed spray USDA Witchweed Eradication Program	2.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Initiate sprays in late June to early July and repeat in early August if regrowth occurs.</li> <li>Follow application instructions in postemergence directed spray section above.</li> </ul>
FIELD CORN ONLY (grain, fodder, forage)  2,4-D Amine Tank Mix	3	Postemer- gence directed spray USDA Witchweed Eradication Program	8.0 fl. oz. + 0.5 lbs. 2,4-D Amine AE	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Apply as a directed spray onto grassy weeds and witchweed before witchweed blooms. Reapply if regrowth occurs.</li> <li>Follow application instructions in postemergence directed spray section above.</li> </ul>
COTTON  (Used alone)	3	Preplant or Preemergence	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply prior to, during or after planting, but before crop emergence.</li> <li>For fallow bed treatment, beds should be preformed to permit maximum weed and grass emergence prior to treatment.</li> <li>Seeding should be done with a minimum of soil disturbance.</li> </ul>
COTTON (California only; Used alone)	3	Preplant	8.0-16 fl. oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>
COTTON  Goal™ Herbicide Tank Mix	3	Preplant or Fallow Bed Broadcast	2.5-4.0 pts.	Ground or Air: 10 gals.	—	<ul style="list-style-type: none"> <li>Refer to Goal label for specific use directions and restrictions, and weeds controlled.</li> </ul>
COTTON  Other Tank Mixes	3	Preplant or Preemergence	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: Cotoran, Dual MAGNUM®, Meturon®, Cotton-Pro®, Caparol, Diuron, Harmony® Extra (Preplant Only), MSMA, Prowl, Zorial®.</li> <li>When tank mixing with Cotoran DF or Meturon DF, follow mixing instructions in the Order of Tank Mixing section carefully and maintain constant agitation.</li> <li>When tank mixing with any of the herbicides listed above, refer to that product's label for specific directions and restrictions and for a list of weeds controlled.</li> </ul>

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<b>COTTON</b>  General directions for all cotton harvest aid uses		Harvest Aid				<p>Harvest Aid Use Precautions (Applies to all sections)</p> <ul style="list-style-type: none"> <li>Do not pasture livestock in treated fields or feed treated foliage.</li> <li>Do not apply to cotton within 3 days before harvest.</li> <li>Repeat application if necessary. Do not exceed a total of 2.0 pts./A as a harvest aid.</li> <li>May be tank mixed with other cotton harvest aid materials known to be effective by the local expert. Unless otherwise instructed in this label, refer to tank mix product label for rates, directions, limitations and cautions.</li> <li>Gramoxone Inteon can be applied in a tank mix with methyl parathion and/or Karate insecticide.</li> <li>Nodes above cracked bolls (NAC8) timing is for guidance and is not intended to restrict the local expert in their use of the product.</li> </ul>
<b>SOUTHERN COTTON</b>  Harvest aid for boll opening and defoliation (tank mix with phosphate and chlorate defoliants)	4	Broadcast	8.0 fl. oz. + 1 pt. phosphate or 1 gal. chlorate	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Development of immature bolls will be inhibited.</li> <li>Apply when 80% or more of the bolls are open and the remaining bolls to be harvested are mature.</li> </ul>
<b>SOUTHERN COTTON</b>  Additional tank mixes for boll opening and defoliation	4	Broadcast	3.1-5.0 fl. oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>To aid in defoliation and opening of mature bolls, Gramoxone Inteon may be tank mixed with the following products: Accelerate® Defoliant, DEF® Defoliant, Dropp® Defoliant, Ethephon® Plant Growth Regulator, Folex® Defoliant, Harvade® Harvest Growth Regulator, Prep™ PGR.</li> <li>Apply when 60% or more of the bolls are open and the remaining bolls to be harvested are mature.</li> <li>Development of immature bolls will be inhibited.</li> <li>Refer to tank mix product label for rate, directions, limitations and cautions.</li> </ul>
<b>SOUTHERN COTTON</b>  Post Defoliation-To aid in opening of mature bolls and to desiccate green weeds	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>Use higher rate if weed infestation is heavy or dense.</li> <li>Apply when 75% or more of the bolls are open and remaining bolls to be harvested are mature.</li> <li>Development of immature bolls will be inhibited.</li> <li>After a defoliation or conditioning application has been made, delay desiccation application of Gramoxone Inteon approximately 3-7 days to minimize leaf sticking.</li> </ul>
<b>WESTERN COTTON</b>  Harvest aid for boll opening and early defoliation	4	Broadcast	5.5-8.0 fl. oz. + phosphate or sodium chlorate; and/or other compatible harvest aid products.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Use higher rate of Gramoxone Inteon on rank cotton.</li> <li>Do not use more than 8.0 fl. oz. of Gramoxone Inteon for early defoliation as excessive desiccation may occur.</li> <li>Early defoliation timing is when 60% or more of the bolls are open and the remaining bolls to be harvested are mature (approximately 4 NACB).</li> <li>Development of immature bolls will be inhibited.</li> <li>Do not use more than 4.0 lbs. of actual sodium chlorate defoliant per acre at this early defoliation timing.</li> </ul>

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>WESTERN COTTON</b>  Harvest aid for boll opening and mid-to-late defoliation	4	Broadcast	8.0-16.0 fl. oz. alone or tank mix with sodium chlorate or phosphate defoliant and/or other compatible harvest aid products.	Ground: 10 gals. Air: 5 gals.	3 (Alone)	<ul style="list-style-type: none"> <li>In desert cotton areas or on rank vigorous cotton, use the 16 fl. oz. rate of Gramoxone Inteon.</li> <li>Mid-to-late defoliation timing is when 75% or more of the bolls are open and remaining bolls to be harvested are mature (approximately 3 or fewer NACB).</li> <li>Development of immature bolls will be inhibited.</li> </ul>
<b>COTTON Stripper or Spindle Harvested</b>  Harvest aid for defoliation and boll opening	4	Broadcast	3.0-11.25 fl. oz.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>IT IS ADVISABLE, BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, TO APPLY THE RANGE OF RATES ON A SMALL BLOCK OF COTTON TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS.</li> <li>Apply when 75% of the bolls are open and the remaining bolls to be harvested are mature.</li> <li>DEVELOPMENT OF IMMATURE BOLLS WILL BE INHIBITED. SLICE BOLLS AND INSPECT THE SEED FOR MATURITY.</li> <li>Gramoxone Inteon may be applied alone or tank mixed with the following cotton harvest aids: Accelerate Defoliant, DEF® Defoliant, Ethephon® Plant Growth Regulator, Folex® Defoliant, Harvade® Harvest Growth Regulator, Prep PGR.</li> <li>May be applied as a split application. Do not exceed a total of 2.0 pts./A per year.</li> <li>To avoid leaf sticking, apply Gramoxone Inteon as a desiccant approximately 3-7 days after defoliation or a conditioning application and 7-14 days before harvest.</li> <li>Cooler temperatures may cause a longer waiting period between application of Gramoxone Inteon as a desiccant and defoliation/condition.</li> <li>Lower rates in the range may be necessary south of I-10 in Texas where temperatures are typically higher during defoliation.</li> </ul>
<b>COTTON</b>  Late season desiccation	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>IT IS ADVISABLE, BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, TO APPLY THE RANGE OF RATES ON A SMALL BLOCK TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS.</li> <li>May be applied as a split application. Do not exceed a total of 2.0 pts./A per year.</li> <li>Apply when 85% of the bolls are open and the remaining bolls to be harvested are mature (approximately 0 NACB).</li> <li>Development of immature bolls will be inhibited. Slice bolls and inspect the seed for maturity.</li> <li>Lower rates in the range may be necessary south of I-10 in Texas where temperatures are typically higher during defoliation.</li> <li>If a defoliation or conditioning application has been made, delay desiccation application of Gramoxone Inteon approximately 3-7 days to minimize leaf sticking.</li> <li>May be tank mixed with other harvest aid materials known to the local expert to be effective.</li> </ul>
<b>COTTON</b>  Desiccation of Regrowth	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>Use to desiccate regrowth occurring after defoliation or desiccation.</li> <li>Regrowth is difficult to control, therefore, thorough coverage with the full recommended rate is necessary.</li> <li>Control is dependent on growing conditions and desiccation of small new regrowth may not always be complete.</li> <li>Use higher rate if regrowth is excessive.</li> </ul>



# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
EASTER LILIES (Field grown)	2	Preemergence	2.5-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Do not apply more than twice per season.</li> </ul>
FALLOW LAND  Prior to planting of any crops.	2	Preplant Broadcast to Fallow Land	1.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Fallow land may be between operations such as disking, ripping, plowing, leveling, irrigating or listing for ground preparation purposes.</li> <li>Use for the control of weeds such as bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dog fennel, tansy mustard, London rocket, sowthistle, rescue brome, wild oats, volunteer cereals and other winter annuals and for suppression of perennial weeds or sedges.</li> <li>Use the higher rate for weeds approaching the maximum size of 6".</li> <li>Do not make more than 2 applications during the fallow period.</li> <li>Allow maximum weed emergence prior to application to maximize the benefit of this use.</li> <li>Adhere to the preharvest intervals and other crop specific restrictions for planted crops elsewhere on this label.</li> </ul>
GRASSES (For Seed; For Use in Seedbed Preparation)	3	Preplant, At Planting, or Preemergence	2.0-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Prepare the seedbeds and allow weeds to germinate.</li> <li>Apply Gramoxone Inteon when weeds are at the 3-5 leaf stage.</li> <li>Repeat applications as necessary prior to grass emergence.</li> <li>Do not graze treated areas or use the seed or straw from treated areas for animal feed or bedding.</li> </ul>
GUAR (Preharvest desiccation)	3	Preharvest	2.0 pts.	Ground: 10 gals.	4	<ul style="list-style-type: none"> <li>Apply after the pods are fully mature.</li> <li>Do not graze treated areas or use the treated forage for animal feed.</li> </ul>
GUAVA	4	Directed Spray	3.75 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems, fruit or foliage.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>For mature woody weeds, late-germinating weeds and grasses, and perennials, retreatment or spot spraying may be necessary.</li> </ul>
HOPS (ID, OR, & WA only)	3	Directed Spray and/or Suckering and Stripping	2.0 pts.	Ground: 10 gals.	14	<ul style="list-style-type: none"> <li>Retreatment or spot treatment may be necessary.</li> <li>Do not apply more than 3 times per season.</li> <li>Do not allow spray to contact green stems, foliage, flowers, or cones as injury may result.</li> <li>Do not allow animals to graze in treated hopyards.</li> <li>Hop vine refuse and silage may be fed to livestock.</li> <li>For suckering and stripping, spray only the basal 2 ft. of the vines.</li> <li>Experience with varieties other than Cascade, Yakima Cluster, and Bullion is limited. If using Gramoxone Inteon on other varieties than these, test the use pattern on a small number of vines of each variety to determine sensitivity to injury. Do not use on unlisted varieties if unacceptable crop injury occurs.</li> <li>Chemical Pruning: To burn back existing vines and obtain even emergence of subsequent vines, spray when vines are less than 3 ft. tall.</li> <li>APPLICATION TO HOP VINES LESS THAN 6 FT. TALL MAY CAUSE UNACCEPTABLE INJURY.</li> </ul>

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LENTILS	2	Harvest Aid	1.2-2.0 pts.	Ground: 20 gals. Air: 7 gals.	7	<ul style="list-style-type: none"> <li>Add nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume.</li> <li>DO NOT exceed a total of 2.0 pts./A per season.</li> <li>May also be applied as a split application. If applied as a split application, do not exceed a total of 2 pts./A per season. Split application may improve coverage.</li> <li>Apply when crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 30% of the leaves still green in color.</li> <li>DO NOT apply when weather conditions favor spray drift. A drift control agent may be included to reduce spray drift.</li> <li>NOT REGISTERED FOR USE ON LENTILS IN CALIFORNIA.</li> </ul>
MINT (Peppermint, Spearmint)	2	Dormant Season	2.0-3.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For suppression of weeds such as Italian ryegrass, prickly lettuce, groundsel, chickweed, downy brome and bluegrass.</li> <li>Apply when crop is dormant before spring growth begins and when weeds are less than 6" tall.</li> <li>Do not apply more than 3.0 pts./A per dormant season.</li> <li>May be tank mixed with Sinbar Herbicide (terbacil) weed killer for improved contact activity and residual control of Italian ryegrass, prickly lettuce and groundsel. Apply this tank mixture no more than once per season. Refer to the Sinbar label for rates, directions, and cautions and for a list of weeds controlled.</li> </ul>
ONIONS (seeded) AND GARLIC	1	Preplant/ Preemer- gence	2.5-4.0 pts.	Ground: 10 gals.	60 200 (CA only)	<ul style="list-style-type: none"> <li>Use the higher rate for heavy weed infestations or wild oat control. Apply only one application per season at the 4.0 pts./A dosage.</li> <li>Allow maximum weed and grass emergence prior to treatment but apply prior to crop emergence.</li> <li>Apply a maximum of 4.0 pts./A per season.</li> </ul>
PASSION FRUIT	5	Directed Spray	3.75 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Use a shield or wrap vine if bark is still green at application time.</li> <li>If application is to be made during harvest season, pick all fruit off the ground prior to application.</li> <li>Do not allow animals to graze on treated areas.</li> <li>Retreatment or spot treatment may be necessary.</li> </ul>
PEANUTS	2	Broadcast At Ground Crack Postemer- gence	8.0-16.0 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>To control or suppress small (1-6") emerged annual grass and broadleaf weeds in peanuts at ground crack. A second application may be made up to 28 days after ground crack.</li> <li>For at ground crack use, Gramoxone Inteon can be tank mixed with Pursuit® Herbicide or Dual MAGNUM for residual weed control. Consult the Pursuit or Dual MAGNUM label for a list of weeds controlled, rates of application, and precautions.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per acre per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Do not apply by air.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
PEANUTS  Basagran® Herbicide Tank Mix	2	Broadcast At Ground Crack Postemer- gence	8.0-16.0 fl. oz.	Ground: 10 gals.	–	<ul style="list-style-type: none"> <li>For improved control of weeds such as cocklebur, bristly starbur, smartweed and prickly sida, tank mix Gramoxone Inteon with Basagran at 1 pt./A.</li> <li>This tank mix can be applied at the ground crack stage of peanuts. A second application may be made up to 28 days after ground crack.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per acre per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Refer to the Basagran label for specific use directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not apply this tank mix if peanuts show injury (leaf phytotoxicity and/or plant stunting) produced by any other herbicide treatment as injury may be enhanced and/or prolonged.</li> <li>Do not apply this tank mix during prolonged periods of drought or unseasonably cold weather as unsatisfactory weed control may result.</li> <li>Do not apply by air.</li> </ul>
PEANUTS  Butyrac® Herbicide or Butoxone® Herbicide 200 Tank Mix	2	Broadcast Postemer- gence	8.0-16.0 fl. oz.	Ground: 10 gals.	–	<ul style="list-style-type: none"> <li>For improved control of weeds such as cocklebur, sicklepod and morningglory tank mix Gramoxone Inteon with 8-16 fl. oz. (0.125-0.25 lbs.) per acre of Butyrac or Butoxone 200.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Refer to the complete Butyrac or Butoxone 200 label for specific use directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not apply by air.</li> </ul>
PERSIMMON	5	Directed Spray	3.75 pts.	Ground: 10 gals.	–	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems, fruit, or foliage.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>For mature woody weeds, late-germinating weeds and grasses, and perennials, retreatment or spot spraying may be necessary.</li> </ul>
PIGEON PEAS (Puerto Rico only)	1	Directed Spray	2.0 pts.	Ground: 10 gals.	60	<ul style="list-style-type: none"> <li>Avoid contact with pigeon pea foliage.</li> <li>Do not make more than 1 application per season.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> <li>Cannery waste can be fed to livestock.</li> </ul>
PINEAPPLE	3	Directed Spray	2.0-4.0 pts.	Ground: 10 gals.	20	<ul style="list-style-type: none"> <li>Retreatment may be necessary on more mature weeds.</li> <li>Do not exceed 3 applications per season.</li> </ul>
POTATO	3	Preplant or Preemer- gence Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	–	<ul style="list-style-type: none"> <li>Apply up to ground cracking, before potatoes have emerged.</li> </ul>
POTATO  (California, Washington, Oregon, Idaho only; Used alone)	3	Preplant Broadcast	8.0-16.0 fl. oz.	Ground: 10 gals. Air: 5 gals.	–	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>

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RICE	3	Preplant or Preemergence Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence. Use higher rates and spray volumes when vegetation is dense.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.</li> <li>For improved or extended weed control, Gramoxone Inteon may be tank mixed with other herbicides registered for this use. Refer to tank mix herbicide labels for specific directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not flood/flush within 48 hours of application in order to ensure complete kill of vegetation. If cool, cloudy and/or wet weather delays speed of kill, do not flood/flush until complete kill is evident.</li> </ul>
SAFFLOWER	3	Preplant or Preemergence Broadcast or Banded Over Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply before, during, or after planting but before crop emergence.</li> </ul>
SAFFLOWER (California only)	3	Preplant Broadcast	1.0 pt.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>
SMALL GRAINS (Barley, wheat)	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	
SMALL GRAINS (Wheat Only) Hoelon® 3EC Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>A tank mix with Hoelon 3EC will improve grass control.</li> <li>Apply when weeds are actively growing and 1-6" in height. Weeds 6" or taller may not be controlled.</li> <li>Do not apply this tank mix to Barley as crop injury may result.</li> </ul>
SORGHUM (Grain)	3	Preplant/Preemergence Broadcast or Band	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Seedbeds should be formed as far ahead of planting as possible to allow maximum weed and grass emergence.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> </ul>
SORGHUM (Grain) Atrazine & 2,4-D ester (Low Volatile) Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with Atrazine for improved preemergence or residual weed control. The addition of 2,4-D ester (Low Volatile) may aid in the suppression of perennial and annual broadleaf weeds emerged at the time of application. Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and a list of weeds controlled.</li> </ul>
SORGHUM (Grain) Harmony® Extra Herbicide Tank Mix	3	Preplant	2.0-3.75 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with Harmony Extra for improved weed control.</li> <li>Refer to the Harmony Extra label for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> </ul>

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SORGHUM (Grain)	2	Postemergence Directed (Including Hooded or Shielded)	1.0-2.0 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• Use higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray contacts sorghum plants.</li> <li>• Do not exceed 2 postemergence-directed applications or exceed a total of 4.0 pts. Gramoxone Inteon per season.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height.</li> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply when sorghum is at least 12" tall when naturally standing.</li> <li>• Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Use precision directed-spray application equipment adjusted so that no more than the lower 3" of the sorghum stalk is contacted by the application spray.</li> <li>• Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>
SOYBEANS	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Do not exceed a total of 6.0 pts. of Gramoxone Inteon per season.</li> <li>• Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>• For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: 2,4-DB, 2,4-D, Authority®, Canopy, Canopy XL, Command, Dual MAGNUM, Dual II MAGNUM, Goal, Harmony® Extra (Preplant Only), Lorox, Lorox Plus, Flexstar, Firstrate™, Frontier, Gemini®, Warrior, Karate, Prowl, Pursuit, Scepter®, Sencor, Surflan®, Turbo®.</li> <li>• The rate of Gramoxone Inteon to be used in these tank mixtures is dependent on weed height and growing conditions. Use the highest recommended rate of Gramoxone Inteon under dry conditions or where the weed canopy is dense. Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> <li>• The lower rate may be used when weeds are less than 4" tall and a selective post-emergence spray or cultivation will be made within 3 weeks after planting.</li> <li>• Seeding should be done with a minimum amount of soil disturbance.</li> <li>• Do not graze or harvest for forage or hay before the R3 stage of soybean development (early pod).</li> </ul>

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SOYBEANS  2,4-D ester (Low Volatile) Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Apply 2,4-D ester (Low Volatile) at 0.35-0.475 lbs. a.i./A at least 7 days prior to planting.</li> <li>• Apply 2,4-D ester (Low Volatile) at 0.475-0.95 lbs. a.i./A at least 30 days prior to planting.</li> <li>• Do not apply 2,4-D ester (Low Volatile) prior to planting soybeans if you are not prepared to accept the results of soybean injury including possible loss of stand and yield.</li> <li>• Do not use the amine formulation as Gramoxone Inteon activity may be reduced.</li> <li>• May be tank mixed with residual herbicides listed above.</li> <li>• Refer to the 2,4-D ester (Low Volatile) label for a list of rates, directions, limitations and cautions and for a list of weeds controlled.</li> </ul>
SOYBEANS	3	Postemergence Directed Spray (Includes Hooded or Shielded)	4.5-8.0 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• For control of seedling johnsongrass, crabgrass, goosegrass, Brachiaria, Texas millet and pigweed less than 2" tall, use the lower rate of Gramoxone Inteon.</li> <li>• For control of 2-4" red rice, Brachiaria, barnyardgrass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, and fall panicum, use 8.0 fl. oz. of Gramoxone Inteon.</li> <li>• For control of 2-3" sicklepod, purslane, pigweed, cutleaf ground cherry, and common ragweed, use 8.0 fl. oz. of Gramoxone Inteon.</li> <li>• For control of 2-4" grasses in mixture with common cocklebur, morningglory, and red rice, apply Gramoxone Inteon at 8.0 fl. oz./A plus 0.2 lb. active ingredient per acre of a 2,4-DB formulation.</li> <li>• Refer to the 2,4-DB label for directions, limitations, and cautions.</li> <li>• Do not graze or harvest for forage or hay.</li> <li>• If needed make a second and final application 7-14 days later.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> <li>• Use higher rate on larger (≥ 6") or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray intentionally or accidentally (including drift of fine droplets) contacts the plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Do not treat if soybeans are less than 8" tall.</li> <li>• Use precision directed spray application equipment adjusted so that no more than the lower 3" of the soybean plant is contacted by the application spray.</li> <li>• Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>

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SOYBEANS	3	Harvest Aid	8.0-16.0 fl. oz.	Ground: 20 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Indeterminant varieties: Apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less.</li> <li>Determinant varieties: Apply when plants are mature, i.e., beans are fully developed, 1/2 of leaves have dropped, and remaining leaves are yellowing.</li> <li>Immature soybeans will be injured.</li> <li>Mature cocklebur, especially drought-stressed plants, are tolerant to Gramoxone Inteon and desiccation will not be complete. Always use the higher rate for cocklebur.</li> <li>Do not apply within 15 days of harvest.</li> <li>Do not graze or harvest for forage or hay.</li> </ul>
STRAWBERRIES	3	Postemergence Directed Spray	2.0 pts.	Ground: 20 gals.	21	<ul style="list-style-type: none"> <li>Apply by directing spray between the rows and using shields to prevent spray contact with crop plants.</li> <li>Do not allow spray to contact strawberry plants as injury or excessive residues may result.</li> <li>Do not apply more than 3 times per season.</li> <li>Do not graze livestock in treated areas.</li> </ul>
SUGAR BEETS	3	Preplant or Preemergence	2.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Use the higher rate for heavier weed infestations.</li> <li>Seeding or transplanting should be done with a minimum amount of soil disturbance.</li> <li>Crop plants emerged at time of application will be killed.</li> <li>Can be used in fallow bed/stale seedbed for weed control.</li> <li>Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.</li> </ul>
SUGARCANE	2	Postemergence Directed Spray (Includes Hooded or Shielded)				<p><b>General Comments</b></p> <ul style="list-style-type: none"> <li>Apply as a hooded, shielded or directed spray to avoid contact with cane foliage to prevent leaf burn and yield reduction.</li> <li>Make a second and final application, if necessary, when new weed growth is 2-6" high.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> </ul>
-- Florida --	2		2.0 pts.	Ground: 50 gals.	—	<ul style="list-style-type: none"> <li>For optimum results, apply in early spring (March-April) when weeds are small.</li> <li>Do not apply after June 1 as cane growth may be stunted and yields reduced.</li> </ul>
-- Hawaii --	2		2.0 pts.	Ground: 20 gals.	—	<ul style="list-style-type: none"> <li>Do not apply after cane rows have closed in.</li> </ul>
-- Louisiana --	2		1.0-3.0 pts.	Ground: 20 gals.	30	<ul style="list-style-type: none"> <li>For tiller control, apply when tillers are less than 18" high.</li> <li>Use the higher rate for heavier weed infestations or tiller growth.</li> </ul>
-- Florida & Texas --	1	Harvest Aid	0.6-1.0 pts.	Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Use higher rate under cool, cloudy weather conditions.</li> <li>Apply 3-14 days before burning and harvest.</li> </ul>
SUNFLOWER	3	Preplant or Preemergence Broadcast or Banded Over Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply before, during, or after planting but before crop emergence.</li> </ul>

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SUNFLOWER	2	Preharvest Desiccation Broadcast	1.2-2.0 pts.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Apply when sunflower seeds reach physiological maturity (when seed moisture is 35% or lower). For many varieties, this corresponds to the time when the back of the heads are yellow and the bracts are turning brown.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> <li>Use the higher rate when crop stands or weed infestations are heavy.</li> </ul>
TARO, DRYLAND (Hawaii Only)	2	Postemergence Directed Spray	2.0-3.0 pts.	Ground: 10 gals.	180	<ul style="list-style-type: none"> <li>Do not allow spray to contact the taro plants as injury may result.</li> <li>Make the first application when weed growth is 1-4" high.</li> <li>Weeds emerging after the application will not be controlled.</li> <li>A single re-treatment may be made; however, do not harvest dryland taro within 6 months of the last application.</li> </ul>
TREE PLANTATION ESTABLISHMENT Deciduous and Conifers	3	Preplant Broadcast	2.0-4.0 pts.	Ground: 20 gals.	—	<ul style="list-style-type: none"> <li>Prepare ground early to allow maximum emergence of weeds.</li> <li>Apply prior to planting. Plant with minimal soil disturbance.</li> <li>Use the higher rate for heavier weed infestations.</li> <li>For improved burndown or residual control, tank mix Gramoxone Inteon with other herbicides labelled for this use.</li> <li>Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> <li>Do not apply in less than 20 gals./A as weed control will be reduced.</li> </ul>
<b>TREES AND VINES</b> Orchards, Vineyards, Windbreak, Shade & Ornamental Trees  Acerola Apples Apricots Avocados Bananas Beechnut Brazil Nut Butternut Calamondin Cashew Cherries Chestnut Chinquapin Citrus Citron Coffee Figs Filberts Grapefruit Grapes Hickory Nut Kiwi Fruit Kumquat Lemon Lime Macadamia Nuts Mandarin Nectarines Olives Orange (sour & sweet) Papayas Peaches Pears Pecans Pistachios Plums Prunes	5 except for:  Apricots 3 Cherries 3  Kiwi Fruit 3 Nectarines 3 Olives 4 Peaches 3 Pistachios 5 (only 2 after shells split) Plums 3	Directed Spray	2.5-4.0 pts.	Ground: 10 gals.	Apricots 28 Cherries 28 Figs 13 Kiwi Fruit 14 Nectarines 28 Olives 13 Peaches 14 Pistachios 7 Plums 28	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems (except suckers), fruit or foliage.</li> <li>Use a shield or wrap plant when spraying around young trees or vines.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>Do not apply when figs, nuts or olives to be harvested are on the ground.</li> <li>For apricots - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For cherries - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For figs - Do not harvest within 13 days after application and do not exceed 5 postemergence directed applications per season.</li> <li>For grapes - treat when sucker growth is no more than 8" long. Late season applications to weeds should be made to avoid contact with desirable foliage.</li> <li>For kiwi fruit - Do not treat more than 3 times per year. Do not harvest within 14 days after application.</li> <li>For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatment may be necessary.</li> <li>For nectarines - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For olives - Do not harvest within 13 days after application and do not exceed 4 postemergence directed applications per season.</li> <li>For peaches - Do not harvest within 14 days after application and do not exceed 3 postemergence directed applications per season.</li> </ul>

continued...



# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>TREES AND VINES</b> Orchards, Vineyards, Windbreak, Shade & Ornamental Trees <i>(continued)</i>  Pummelo Satsuma mandarin Walnuts Other shade and ornamental trees such as arborvitae, ash, elm, fir, oak, pine, etc.						<ul style="list-style-type: none"> <li>For pistachios - Do not exceed two applications after shells split. Do not harvest within 7 days after application.</li> <li>For plums - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> </ul>
<b>TREES AND VINES</b>  Tank Mixes	5 except for: Apricots 3 Cherries 3 Kiwi Fruit 3 Nectarines 3 Olives 4 Peaches 3 Pistachios 5 (only 2 after shells split) Plums 3	Directed Spray	2.5-4.0 pts.	Ground: 10 gals.	Refer to other tank mix labels	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with registered residual herbicides listed below for combined emerged and residual weed control. Always refer to other herbicide label(s) for respective precautions, limitations, restrictions, dates and directions for use and weeds controlled.</li> <li>Gramoxone Inteon may be tank mixed with the following herbicides: Devrinol®, Goal, Karmex®, Krovar® I Herbicides, Princep, Sinbar, Surflan, Solicam®.</li> </ul>
<b>TYFON</b> (New Hampshire only)	3	Preplant Preemergence	2.5-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Seeding should be done with a minimum of soil disturbance.</li> <li>Weeds and grasses emerging after treatment will not be controlled.</li> <li>Crop plants emerged at time of application will be injured.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>VEGETABLES</b> (Seeded or Transplanted) Beans (Lima, Snap) Broccoli Cabbage Cantaloupe Carrots Cauliflower Chayote Fruit Chinese Cabbage Chinese Waxgourd Citron Melon Collards Cucumber Eggplant Endive (Escarole) Gherkin Gourd, Edible Groundcherry Lettuce <i>Momordica</i> spp. Musk Melons Peas Pepino Peppers Pumpkin Squash Sweet Corn Tomatillo Turnips Tomatoes Watermelons	3	Preplant Preemergence	2.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.</li> <li>Applications can be made as a banded or broadcast treatment before, during or after planting but prior to the crop emergence.</li> <li>Use the higher rate for heavier weed infestations.</li> <li>Seeding or transplanting should be done with a minimum amount of soil disturbance.</li> <li>Crop plants emerged at time of application will be killed.</li> <li>Can be used in fallow bed/stale seedbed for weed control alone or tank mixed with Goal. Consult the Goal label for a list of weeds controlled, rates of application and precautions.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>
<b>VEGETABLES</b> Eggplant Tomatoes Peppers	3	Directed Spray	2.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>For control or suppression of emerged weeds between rows after crop establishment.</li> <li>Use precision directed spray application equipment adjusted to prevent spray contact with crop plants. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>Apply when weeds are succulent and weed growth is less than 6".</li> <li>Do not apply more than 3 applications per season.</li> <li>Do not allow animals to graze in treated areas.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>
<b>VEGETABLES</b> Tomatoes	2	After Final Harvest	2.4-3.75 pts.	Ground: 40-120 gals.	—	<ul style="list-style-type: none"> <li>Apply in 40-120 gallons of water per acre.</li> <li>Add NIS containing 75% or more surface active agent at 0.125 v/v (1 pt./100 gals. spray solution).</li> <li>Thorough coverage of the tomato vines is required to ensure maximum herbicide burndown.</li> <li>Use of dirty or muddy water may deactivate Gramoxone Inteon.</li> <li>To help facilitate removal of Sweet Potato Whitefly, burn tomato vines with propane burners as soon as possible after the vines have dried down sufficiently.</li> <li>DO NOT apply more than a total of 1.875 lbs. active ingredient (paraquat) per acre per season.</li> <li>To minimize drift, do not use nozzles or nozzle configurations which produce fine spray droplets (mist).</li> </ul>

## Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
VEGETABLES (California, Washington, Oregon, Idaho only) Lettuce Melon Sugar Beets Tomatoes	2	Broadcast	0.75-1.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>
VEGETABLES Rhubarb	2	Dormant	2.5-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Apply during dormant season before buds in crown begin to grow.</li> <li>Do not make more than 2 applications per season.</li> </ul>

### ALFALFA

**Table 2. New Seedlings – Suppression and control of broadleaf weeds and grasses in new alfalfa seedlings grown for hay (California only)**

For Control of:	Rate/Acre	
	For Suppression	For Control
Spikeweed (4 inches tall or less)	8 fl. oz.	16-24 fl. oz.
Volunteer Small Grain (8 inches tall or less)	8-16 fl. oz.	32 fl. oz.
Fiddleneck (6 inches tall or less)	8-16 fl. oz.	32 fl. oz.
Shepherdspurse	16-32 fl. oz.	—
Annual Bluegrass	—	16-32 fl. oz.
Chickweed	—	16-32 fl. oz.
Red Maids (6 inches tall or less)	—	16-32 fl. oz.

Do not use the 8.0 fl. oz. rate unless the alfalfa has at least 3 trifoliate leaves; the 16.0 fl. oz. rate unless the alfalfa has 6 trifoliate leaves; or rates over 16.0 fl. oz. unless there are 9 trifoliate leaves.

### RESIN SOAKING

Pines (Loblolly, Shortleaf, Longleaf, Slash, Virginia, Pond, Pitch, and Spruce Pines)

**Tree Selection** - Select trees to be treated from stands on sites not subject to periods of extreme drought stress as the desiccating effect of Gramoxone Inteon to pines is accentuated during such periods, causing a reduction in the amount of oleoresin deposited in the xylem. Select trees to be treated from vigorous, nonstagnated stands, either natural or planted. In stagnated stands or commercial timber stands, plan treating with Gramoxone Inteon not sooner than three years after a commercial thinning.

**Application Directions** - Apply Gramoxone Inteon diluted in water to a suitable wound in the tree trunk to bring the treatment into contact with the xylem (sapwood).

**Bark Streaks or Cuts:** This type of wound is made using a standard or rotary bark hack or a chainsaw chipping tool employed in naval stores work to remove a single 1-inch wide streak of bark about 1-2 ft. from ground level. The total length should not exceed 1/3 of the tree circumference. Multiple streaks or cuts can result in serious girdling of the trunk and premature death of the tree. A coarse spray (about 1.7-5.0 ml.) Gramoxone Inteon solution (1-5% cation, wt./wt. basis) should be applied to runoff to the exposed xylem, using a low-pressure sprayer. The amount of spray required per cut depends on tree circumference and the length of cut or streak (1/3 of circumference). For a 9-inch diameter tree, 3 ml. of spray will cover the 1-inch wide streak. Using 3 ml. of a 3 or 6% Gramoxone Inteon solution will result in application of 60 or 120 mg. Gramoxone Inteon per streak.

**Time of Treatment:** Resin soaking can occur from treatments made any time of the year; however, cool season treatments under nondrought conditions usually result in less severe pine beetle infestations and longer tree life.

**Interval Between Treatment and Tree Harvest:** The interval between application of Gramoxone Inteon and tree harvest should be a minimum of 6 months and preferably from 12-24 months. Intervals of over 6 months may not be possible under conditions of drought or serious pine beetle attacks, which may make early harvest necessary. The Gramoxone Inteon treatment may encourage beetle attack, or may cause premature death of the tree. Desiccation of the xylem tissue, rather than the desired resin soaking, may occur, and is more likely at higher dosage rates.

**Effect on Stem Growth:** Gramoxone Inteon treatment can result in reduced stem growth during the interval between treatment and tree harvest.

# Gramoxone Inteon™

Dilution Table for Gramoxone Inteon (2.0 lbs. cation per gallon):

Concentration of Cation Desired (Wt./Wt. Basis)	To 1 Gallon of Gramoxone Inteon Add the Following No. Gals. of Water:
0.2%	118.8
0.5%	46.8
1.0%	22.9
2.0%	10.9
3.0%	6.9
4.0%	4.9
5.0%	3.7

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
CONSERVATION RESERVE, FEDERAL SET-ASIDE, CONSERVATION COMPLIANCE PROGRAMS (For use in compliance with the Federal Conservation Reserve Program or Federal set-aside programs).	3	Broadcast	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For improved emerged weed control or extended weed control, Gramoxone Inteon may be tank mixed with other herbicides registered for this use. Refer to tank mix herbicide labels for specific directions, limitations, cautions and for a list of weeds controlled.</li> </ul>
NONCROP USES	10	Broadcast or Spot Treatment	2.5-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>For use in noncrop areas such as public airports, electric transformer stations, pipeline pumping stations, around commercial buildings, storage yards and other installations, fence lines or similar noncrop areas.</li> <li>Avoid contact with the foliage of ornamentals or desired plants.</li> </ul>
PASTURE RESEEDING For suppression of existing sod and undesirable emerged broadleaf weeds and grasses prior to or at time of planting grasses or forage legumes	3	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	See specific geographic recommendation	<p><b>West of Cascade and Sierra Nevada Mountains</b></p> <ul style="list-style-type: none"> <li>Apply in October through December after first fall rains and after weeds have emerged and sod has started new growth.</li> <li>For best seeding results, apply on moderately to heavily grazed areas.</li> <li>Do not use in areas with heavy sod and weed growth.</li> </ul> <p><b>East of Rocky Mountains</b></p> <ul style="list-style-type: none"> <li>Use the 2.0 pt. rate on vigorous or coarse sod species such as brome grass.</li> <li>Apply prior to, or at time of seeding grasses or forage legumes.</li> <li>Apply only to grazed or mowed pastures not more than 3" in height at time of treatment.</li> </ul> <p><b>Bermudagrass or Bahiagrass Sod</b></p> <ul style="list-style-type: none"> <li>Apply in late summer or early fall to sod not exceeding 3 inches in height.</li> <li>For control of emerged Little Barley, apply in February or March before the midboot stage of Little Barley.</li> </ul> <p><b>Bermudagrass and Coastal Bermudagrass Pastures</b></p> <ul style="list-style-type: none"> <li>Apply when bermudagrass is dormant.</li> <li>For control of little barley, apply before the mid-boot stage.</li> <li>Do not mow for hay until 40 days after treatment.</li> </ul>
For Control of Endophyte-Fungus-Infected Fescue Forage Legume/Grass Mixture and Other Grass Pastures	2	Broadcast (Split Application)	1.0-2.0 pts. followed by 1.0-2.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Use split applications of 10-21 days apart if necessary.</li> <li>Do not exceed 4.0 pts./A total in preparation for reseeding.</li> <li>For spring plantings, the initial application of 1.0-2.0 pts. may be made the previous fall.</li> <li>Apply when fescue is actively growing and no more than 4" high.</li> <li>To reduce the infestation of endophyte-infested grass, do not allow fescue to go to seed starting with the preceding year's crop.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<p>*For Prickly Pear Desiccation in Pastures</p> <p>*Not for use in California.</p>	10	Spot Sprays	1.0 fl. oz. per gallon of water	Spray to wet weed foliage		<ul style="list-style-type: none"> <li>• Knapsack, backpack sprayers, pump-up pressure sprayers, hand-guns, hand wands, and other hand-held equipment can be used to direct the spray onto weed foliage for spray to wet applications.</li> <li>• Mix 1.0 fl. oz. of Gramoxone Inteon and 1/3 fl. oz. of a nonionic surfactant per gallon of water.</li> <li>• Spray coverage should be uniform and provide complete cover of all green prickly pear foliage.</li> <li>• Apply in May through September for best desiccation results.</li> <li>• Do not use more than 2.5 pts. of Gramoxone Inteon per acre per year.</li> <li>• Apply only to pastures with no more than 3" of height at time of treatment.</li> <li>• For improved desiccation and perennial control of Prickly pear, tank mix with Grazon P+D Specialty Herbicide at a rate of 1-2 fl. oz. per gallon of water.</li> <li>• Refer to the Grazon P+D Specialty Herbicide label for directions, restrictions, and precautions.</li> </ul>
<p>*For Juniper Species leaf moisture reduction or desiccation prior to Prescribed burning of pastures</p> <p>*Not for use in California.</p>	10	Broadcast	2.0 pts.	Air: 5 gals.		<ul style="list-style-type: none"> <li>• Use only in conjunction with prescribed burning as recommended and monitored by local SCS or University and Extension Range Specialists.</li> <li>• Apply during hot, dry weather conditions (generally July and August).</li> <li>• Use 2% v/v nonionic surfactant in a minimum of 5 gpa spray solution.</li> <li>• Juniper leaf moisture content should be monitored; however, maximum leaf moisture reduction generally occurs 3-4 weeks after Gramoxone Inteon application.</li> <li>• Significant soil moisture and/or wet weather conditions prior to or after application will decrease the potential for Juniper Crown burns.</li> <li>• Cool or humid weather conditions also adversely affect leaf moisture reduction.</li> <li>• Do not graze livestock after application or prior to burning.</li> </ul>
<p>*Native Pastures</p> <p>*Not for use in California.</p>	2	Broadcast	1.5-1.8 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>• Apply Gramoxone Inteon for control of Downy and Japanese Brome.</li> <li>• Apply in spring after 90% node formation of brome species, but before full bloom.</li> <li>• Emerged native perennial grasses will be burned by application, but application after 90% node formation will allow adequate time for native grasses to recover and attain maximum growth in the use season.</li> <li>• Do not apply more than 1.8 pts. Gramoxone Inteon per year.</li> <li>• Apply only to pastures with no more than 3" of height at time of treatment.</li> </ul>

## Gramoxone Inteon™

Conversion Table  
Gramoxone Inteon to Be Applied

Ounces	Pints	Lb. a.i.	Acres/Gallon
16.0	1.0	0.25	8.00
24.0	1.5	0.375	6.00
32.0	2.0	0.5	4.00
40.0	2.5	0.625	3.20
48.0	3.0	0.75	2.66
56.0	3.5	0.875	2.28
64.0	4.0	1.00	2.00

### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

#### Pesticide Storage

Store at temperatures above 32°F.

#### Pesticide Disposal

Pesticides wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinseate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

#### Container Disposal

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**For Bulk/Mini-Bulk Containers** - Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

#### Bulk/Mini-Bulk Refillable Containers

Before refilling, inspect thoroughly for damage, such as cracks, punctures, bulges, dents, abrasions and damaged or worn threads on closure devices. After filling and before transporting, check for leaks. Do not refill or transport damaged or leaking container.

For help with any spill, leak or fire involving this material, call 1-800-888-8372.

**CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!**

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For non-emergency (e.g., current product information), call  
Syngenta Crop Protection at 1-800-334-9481.

Syngenta Crop Protection, Inc.  
Greensboro, North Carolina 27409  
www.syngenta-us.com

SCP 1217A-L1 0805

**RESTRICTED USE PESTICIDE**

DUE TO ACUTE TOXICITY

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

**Herbicide**

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:	
Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) .....	30.1%
Other Ingredients:	69.9%
Total:	100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon.

Contains alerting agent (odor), emetic, dye and Inteon Technology.  
EPA Reg. No. 100-1217 EPA Est. 100-TX-001  
See directions for use in attached booklet.**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

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Syngenta Crop Protection, Inc.  
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SCP 1217A-L1 0805

**2.5 gallons**

Net Contents

**KEEP OUT OF REACH  
OF CHILDREN.****DANGER /  
PELIGRO  
POISON**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

**FIRST AID**

Contains Paraquat, a Bipyridylum Herbicide

If swallowed: SPEED IS ESSENTIAL. Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fuller's Earth. Call a poison control center or doctor immediately for treatment advice. Do not give anything by mouth to an unconscious person. If inhaled: Move person to fresh air. The odor of this product is from the alerting agent, which has been added, not from the paraquat. If person is not breathing, call 911 or an ambulance. Call a poison control center or doctor for further treatment advice.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**NOTE TO PHYSICIAN**Refer to the booklet "Paraquat Poisoning: A Practical Guide to Diagnosis, First Aid and Hospital Treatment" (<http://www.syngenta.com/pqmedguide/>). Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15mL/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.**HOT LINE NUMBER**

For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call 1-800-888-8372.

**PRECAUTIONARY STATEMENTS****HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist NIOSH-approved respirator with any N, R, P, or HE filter. Causes substantial but temporary eye injury. Wear protective eyewear (face shield required when mixing/loading). Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing. Avoid contact with skin. IMPORTANT: Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

**Environmental Hazards****Wildlife:** This product is toxic to wildlife. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.**Drift:** Gramoxone Inteon is a contact herbicide that desiccates all green plant tissue. Paraquat dichloride is toxic to nontarget crops and plants if off-target movement occurs. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion. Refer to the local state laws, regulations, guidelines and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement.**Physical and Chemical Hazards**

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

**STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

**Pesticide Storage**

Store at temperatures above 32°F.

**Pesticide Disposal**

Pesticides wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Disposal**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. For help with any spill, leak or fire involving this material, call 1-800-888-8372.

**CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!**

W-200 JSCWJ CASH





Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419-8300  
www.syngenta.com

**FEDERAL EXPRESS**

December 14, 2005

Document Processing Desk (NOTIF)  
Office of Pesticide Programs (H7504C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1801 South Bell Street  
Arlington, VA 22202-4501

Attention: Mr. James A. Tompkins, PM 25

Dear Mr. Tompkins:

**SUBJECT: NOTIFICATION FOR MINOR CHANGES TO GRAMOXONE INTEON  
LABEL  
EPA REG. NO. 100-1217**

Syngenta Crop Protection, Inc. hereby submits Gramoxone Inteon label via Notification per our discussion of 12-5-05. As the highlighted copy of the attached label indicates, the text regarding skin contact "If on skin or clothing" in the "FIRST AID" section has been expanded from:

"Rinse skin immediately with plenty of water for 15-20 minutes."

to:

"IMMEDIATELY wash with soap and water and rinse for 15-20 minutes. Prolonged contact will cause severe irritation. Contact with irritated skin or a cut or repeated contact with intact skin may result in poisoning. GET MEDICAL ATTENTION."

This change is being made in response to California Department of Pesticide Regulations concerns and has occurred on previously USEPA approved labels, i.e. Cyclone Concentrate, 100-1074, label stamped on Aug. 15, 2000.

**Attachments:**

- ◇ Application for Pesticide Registration, EPA Form 8570-1
- ◇ Two copies of the proposed label

Please contact me at (336) 632-6324 if there are any questions regarding this submission.

Kind regards,

Jerry Wells  
Senior Regulatory Product Manager

Enclosures



## Environmental Protection Agency

Washington, DC 20460

Amendment

Other

## Application for Pesticide - Section I

1. Company/Product Number 100-1217	2. EPA Product Manager Jim Tompkins	3. Proposed Classification  <input type="checkbox"/> None <input checked="" type="checkbox"/> Restricted
4. Company/Product (Name) Gramoxone Inteon	PM# 25	
5. Name and Address of Applicant (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419  <input type="checkbox"/> Check if this is a new address		6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:  EPA Reg. No. _____ Product Name _____

## Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

**Explanation:** Use additional page(s) if necessary. (For Section I and Section II.).

Notification - minor changes to first aid statement.

## Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____		
*Certification must be submitted		If "Yes" Unit Packaging wgt. No. per Container	If "Yes" Unit Packaging wgt. No. per container		
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Other <u>Pressure Sensitive</u> <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled					

## Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)					
Name Jerry Wells		Title Regulatory Product Manager		Telephone No. (Include Area Code) 336-632-6324	
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.					6. Date Application Received (Stamped)
2. Signature 		3. Title Regulatory Product Manager			
4. Typed Name Jerry Wells		5. Date 12-14-05			



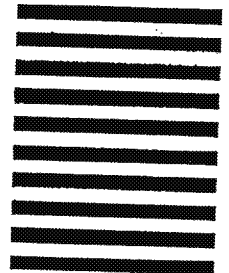
NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 1224 GREENSBORO NC

POSTAGE WILL BE PAID BY ADDRESSEE

ATTENTION: *PAT DINNEN*  
SYNGENTA CROP PROTECTION INC  
REGULATORY AFFAIRS DEPARTMENT  
PO BOX 18300  
GREENSBORO NC 27499-0969



Syngenta Notification dated 12/14/05

Gramaine Antem 100-1217

**Please check:**

☐ **Accepted**

☐ **Not Accepted**

(Booklet – 2.5, 30, 120 Gallons and Bulk)

**RESTRICTED USE PESTICIDE**  
**Due to Acute Toxicity**

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Gramoxone Inteon™

Herbicide

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) ..... 30.1%

Other Ingredients: ..... 69.9%

Total: ..... 100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon.

Contains alerting agent (odor), emetic, dye and Inteon Technology

EPA Reg. No.100-1217

EPA Est. 100-TX-001

**KEEP OUT OF REACH OF CHILDREN.**



**DANGER / POISON**  
**PELIGRO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

- **NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.**
- **IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.**
- **DO NOT USE OR STORE IN OR AROUND THE HOME.**
- **DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.**
- **THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.**

<b>FIRST AID</b> <b>Contains Paraquat, a Bipyrilidium Herbicide</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• SPEED IS ESSENTIAL. Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fullers Earth.</li> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• The odor of this product is from the alerting agent, which has been added, not from the paraquat.</li> <li>• If person is not breathing, call 911 or an ambulance.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• IMMEDIATELY wash with soap and water and rinse for 15-20 minutes. Prolonged contact will cause severe irritation. Contact with irritated skin or a cut or repeated contact with intact skin may result in poisoning.</li> <li>• GET MEDICAL ATTENTION. Call a poison control center or doctor for treatment advice.</li> </ul>
<b>NOTE TO PHYSICIAN</b> <p>Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment' (<a href="http://www.syngenta.com/pqmedguide/">http://www.syngenta.com/pqmedguide/</a>). Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.</p>	
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	
<b>HOT LINE NUMBER</b> <p>For 24-Hour Medical Emergency Assistance (Human or Animal)  Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident)  Call  <b>1-800-888-8372</b></p>	

*remaining pages  
not included...*

PERA Classification  
for New Uses Amended



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

November 22, 2005

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

NO PAYMENT DUE

OPP Decision Number: **D-362469**  
EPA File Symbol or Registration Number: **100-1217**  
Product Name: **GRAMOXONE INTEON**  
EPA Receipt Date: 14-Nov-2005  
EPA Company Number: 100  
Company Name: SYNGENTA CROP PROTECTION, INC.

G. THOMAS GALE, JR.  
SYNGENTA CROP PROTECTION, INC.  
ATTN: REGULATORY AFFAIRS  
PO Box 18300  
GREENSBORO, NC 27419-8300

SUBJECT: Receipt of Amendment Subject to Registration Service Fee

Dear Registrant:

The Office of Pesticide Programs has received your application for Amendment. If you submitted data with this application, the results of the PRN-86-5 screen will be communicated separately. During the administrative screen, the Office of Pesticide Programs has determined that this Action is subject to a Pesticide Registration Service Fee as defined in the Pesticide Registration Improvement Act.

The Action has been identified as Action Code: **R17.0**

NEW USE;EACH ADDITIONAL NEW FOOD USE;NO FEE: LINKED TO A PRIA APPLICATION;

NO PAYMENT DUE WITH THIS ACTION

By USPS:  
USEPA Washington Finance Center  
Pesticide Registration Service Fee  
PO Box 360277  
Pittsburgh, PA 15251



By Courier:

U.S. EPA Washington Finance Center  
Pesticide Registration Service Fee  
C/O Mellon Client Service Center  
500 Ross Street, Room 670  
Box 360277  
Pittsburgh, PA 15251-6277  
Attn: EPA Module Supervisor  
Telephone: (412) 236-2294

All payments must be in United States currency by check, bank draft, or money order drawn to the order of the Environmental Protection Agency. To ensure proper credit, please write the OPP DECISION NUMBER on your check, and enclose a copy of this letter with your payment.

You may be eligible for a full or partial waiver of the registration service fee if, for example, you qualify as a small business or are applying for a minor use, or if your application is solely associated with an IR-4 tolerance petition. Please be advised that if you intend to request a waiver, you must do so in writing within 15 days of receipt of this invoice instead of remitting the amount indicated above. OPP will not consider waiver requests after the registration service fee has been paid. Information regarding eligibility and how to request and document a fee waiver is available on the OPP Fee for Service web site at [www.epa.gov/pesticides/fees](http://www.epa.gov/pesticides/fees).

Please send Registration Service Fee Waiver requests to:

By USPS:

Document Processing Desk (WAIVER)  
Office of Pesticide Programs (7504C)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave NW  
Washington, DC 20460

By Courier:

Document Processing Desk (WAIVER)  
Office of Pesticide Programs (7504C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall #2  
1801 S. Bell St.  
Arlington, VA 22202

A PRIA decision time review period will not start until a fee waiver is granted and/or the Agency receives certification that the outstanding fee has been paid. If the Agency does not receive certification of payment for this action or a fee waiver request within the next 45 days, the Agency will presume that you no longer want to pursue this action. The Agency will then initiate a process that may result in administrative withdrawal of this action.

If you have any questions, please contact the Pesticide Registration Service Fee Ombudsman, at (703) 305-6249.

Sincerely,



Front End Processing Staff  
Information Technology & Resources Management Division

ENC 2-7-86  
WCA First Aid



**VIA COURIER**

February 7, 2006

Document Processing Desk  
Office of Pesticide Programs (H7504C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1801 South Bell Street  
Arlington, VA 22202

Attention: Mr. James A. Tompkins, PM 25

Dear Mr. Tompkins:

**SUBJECT: GRAMOXONE INTEON™  
EPA REG. NO. 100-1217  
SUBMISSION OF FINAL PRINTED LABEL**

Syngenta Crop Protection, Inc. hereby submits one copy of final printed labeling for Gramoxone Inteon that reflects the change to the First Aid section of the label submitted by Syngenta via Notification December 14, 2005 (copy of Notification letter attached). Also enclosed is EPA Form 8570-1 indicating submission of final printed labeling.

If you have any questions, please contact me at 336-632-6324.

Sincerely,

  
Jerry Wells  
Senior Regulatory Product Manager

Enclosures



United States  
Environmental Protection Agency  
Washington, DC 20460

☐ Registration  
☐ Amendment  
☒ Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number 100-1217	2. EPA Product Manager Mr. James A. Tompkins	3. Proposed Classification  <input type="checkbox"/> None <input checked="" type="checkbox"/> Restricted
4. Company/Product (Name) Gramoxone Inteon	PM# 25	
5. Name and Address of Applicant (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419  <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:  EPA Reg. No. _____ Product Name _____	

Section - II

☐ Amendment - Explain below. ☐ Final printed labels in response to Agency letter dated \_\_\_\_\_  
☐ Resubmission in response to Agency letter dated \_\_\_\_\_ ☐ "Me Too" Application. \_\_\_\_\_  
☐ Notification - Explain below. ☐ Other - Explain below. \_\_\_\_\_


Explanation: Use additional page(s) if necessary. (For Section I and Section II.)

Syngenta Crop Protection, Inc. hereby submits one copy of final printed labeling for Gramoxone Inteon that reflects the change to the First Aid section of the label submitted by Syngenta via Notification December 14, 2005

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____		
*Certification must be submitted		If "Yes" Unit Packaging wgt. No. per Container	If "Yes" Unit Packaging wgt. No. per container		
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 2.5, 30, 120 Gallons, Bulk		5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled				<input checked="" type="checkbox"/> Other <u>Pressure Sensitive</u>	

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)					
Name Jerry Wells		Title Senior Regulatory Product Manager		Telephone No. (Include Area Code) 336-632-6324	
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.					6. Date Application Received (Stamped)
2. Signature 		3. Title Senior Regulatory Product Manager			
4. Typed Name Jerry Wells		5. Date February 7, 2006			

PULL HERE TO OPEN ►

## RESTRICTED USE PESTICIDE

DUE TO ACUTE TOXICITY

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.



### Herbicide

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) . . . . . 30.1%

Other Ingredients: . . . . . 69.9%

Total: . . . . . 100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon. Contains alerting agent (odor), emetic, dye and Inteon Technology.

- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

**KEEP OUT OF REACH OF CHILDREN.**

**DANGER/**  **POISON**  
**PELIGRO**

*Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)*

EPA Reg. No. 100-1217

EPA Est. 100-TX-001

SCP 1217A-L1A 0206

**2.5 gallons**

Net Contents

**syngenta**

SCP 130-1217A-L1A

## Gramoxone Inteon™

<b>FIRST AID</b> <b>Contains Paraquat, a Bipyridylum Herbicide</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• <b>SPEED IS ESSENTIAL.</b> Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fullers Earth.</li> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• The odor of this product is from the alerting agent, which has been added, not from the paraquat.</li> <li>• If person is not breathing, call 911 or an ambulance.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• <b>IMMEDIATELY</b> wash with soap and water and rinse for 15-20 minutes. Prolonged contact will cause severe irritation. Contact with irritated skin or a cut or repeated contact with intact skin may result in poisoning.</li> <li>• <b>GET MEDICAL ATTENTION.</b> Call a poison control center or doctor for treatment advice.</li> </ul>
<p style="text-align: center;"><b>NOTE TO PHYSICIAN</b></p> <p>Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment' (<a href="http://www.syngenta.com/pqmedguide/">http://www.syngenta.com/pqmedguide/</a>). Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen. Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.</p>	
<p style="text-align: center;">Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	
<p style="text-align: center;"><b>HOT LINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call <b>1-800-888-8372</b></p>	

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS



#### DANGER / POISON PELIGRO

May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist NIOSH-approved respirator with any N, R, P, or HE filter. Causes substantial but temporary eye injury. Wear protective eyewear (face shield required when mixing/loading). Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing. Avoid contact with skin.

**IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

#### Personal Protective Equipment (PPE)

**Applicators and other handlers (other than Mixers and Loaders) must wear:**

- Long-sleeve shirt and long pants
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter

## Gramoxone Inteon™

### Mixers and Loaders must wear:

- Long-sleeve shirt and long pants
- Shoes plus socks
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton)
- Chemical resistant apron
- Face shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### User Safety Recommendations

#### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### Environmental Hazards

**Wildlife:** This product is toxic to wildlife. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

**Drift:** Gramoxone Inteon is a contact herbicide that desiccates all green plant tissue. Paraquat dichloride is a nonselective herbicide and will cause damage to nontarget crops and plants if off-target movement occurs. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion. Refer to the local state laws, regulations, guidelines and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement.

### Physical and Chemical Hazards

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and Buyer and User assume the risk of any such use. SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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In no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. IT IS THE MANUFACTURER'S INTENTION THAT THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitations of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

### DIRECTIONS FOR USE

#### RESTRICTED USE PESTICIDE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**DO NOT USE AROUND HOME GARDENS, SCHOOLS, RECREATIONAL PARKS, GOLF COURSES OR PLAY-GROUNDS.**

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**For Preplant or Preemergence (Broadcast or Banded), Chemical Fallow, Postemergence Directed Spray, Early Postemergence Broadcast in Peanuts and Dormant Season Applications, and "Between Cutting" Applications in Alfalfa:** Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

**For Harvest Aid and Desiccation Applications:** Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves - Category A (e.g. barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton).

#### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

**DO NOT** enter or allow others to enter the treated area until sprays have dried. **AVOID** working in spray mist.

**KEEP** all unprotected persons out of operating areas or vicinity where there may be danger of drift.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

#### GENERAL INSTRUCTIONS AND INFORMATION

**Do not apply this product through any type of irrigation system.**

When Gramoxone Inteon is applied at less than 10 gallons per acre finished spray volume, a drift control or spray deposition additive **SHOULD** be used. Refer to the additive label for use directions.

##### Spray Drift Information

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.



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The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

- The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
- Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45°.

Where states have more stringent regulations, they shall be observed.

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information**.

### **Aerial Drift Reduction Advisory Information**

(This section is advisory in nature and does not supersede the mandatory label requirements.)

#### **Information on Droplet Size**

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

#### **Controlling Droplet Size**

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

#### **Boom Length**

For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

#### **Application Height**

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making application at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

#### **Swath Adjustment**

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

#### **Wind**

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

#### **Temperature and Humidity**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

#### **Temperature Inversions**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

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### Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

### GENERAL INFORMATION

Gramoxone Inteon is a contact herbicide used to control or suppress a broad spectrum of emerged weeds. Gramoxone Inteon controls most small annual weeds – both broadleaves and grasses, and suppresses perennial weeds by destroying green foliage. Gramoxone Inteon can also be used as a desiccant/defoliant at harvest.

Gramoxone Inteon is formulated as a liquid which contains 2 pounds of active ingredient per gallon. The formulation contains a nontoxic odor and an emetic (an agent which will induce vomiting if the product is swallowed). The odor is included in the formulation to help prevent accidental ingestion of Gramoxone Inteon.

Gramoxone Inteon is rapidly absorbed by green plant tissue and interacts with the photosynthetic process to produce superoxides which destroy the plant cells. Gramoxone Inteon requires actively growing green plant tissue to function. Thorough coverage of all green foliage is essential for effective weed control and for effective crop desiccation/defoliation. Gramoxone Inteon is not as effective on drought-stressed weeds, weeds with little green foliage (i.e., mowed or cut weeds), or mature woody bark of trees and vines.

Clay and organic matter rapidly tie up Gramoxone Inteon. As a result, Gramoxone Inteon has no residual soil activity to affect later-planted crops or later germinating weeds.

### ROTATIONAL CROPS

All rotational crops may be planted immediately after the last application of Gramoxone Inteon.

### RAINFASTNESS

Because Gramoxone Inteon is rapidly absorbed by the weed foliage, rain occurring 15-30 minutes or more after application will have no effect on the activity of Gramoxone Inteon.

### APPLICATION

Since Gramoxone Inteon is a contact-type herbicide, it is essential to obtain complete coverage of target weeds to get good control. Improper application technique and/or application to large, stressed, or mown weeds will usually result in unacceptable weed control and unacceptable crop desiccation/defoliation. Complete coverage is also essential for good crop desiccation/defoliation. See details below for specific application instructions.

### USE OF A NONIONIC SURFACTANT OR CROP OIL CONCENTRATE

Always add one of the following (failure to use one of the following at recommended rates will result in reduced performance of Gramoxone Inteon).

**Nonionic Surfactant:** Add nonionic surfactant containing 75% or more surface-active agent at a minimum of 0.125% v/v (1 pt./100 gals.), or add a nonionic surfactant containing 50-74% surface-active agent at a minimum of 0.25% v/v (2 pts./100 gals.), of the finished spray volume for ground applications. For aerial applications, add a nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume.

**Crop Oil Concentrate:** Add a nonphytotoxic crop oil concentrate or methylated seed oil containing 15-20% approved emulsifier, at 1.0% v/v (1 gal./100 gals.) of the finished spray volume for ground applications. For aerial applications, add 1 pint of crop oil concentrate per acre. Do not use crop oil concentrate when using Gramoxone Inteon for cotton harvest aid.

### NOZZLE SELECTION

The use of flat-fan nozzles will result in the most effective application of Gramoxone Inteon. Flood nozzles are generally not as good as flat fans since they produce large uneven droplets. The use of flood nozzles may result in reduced weed control due to inadequate coverage.

WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE, USE ONLY FLAT FAN NOZZLES AS RECOMMENDED IN THE CHART BELOW.

Table 1. Recommended Nozzles, Pressures and Setup.

	Nozzle Type	
	Flat Fan	Flood
Maximum Size	8	15
Spray Pressure (at nozzle)	30-50 psi	30-50 psi
Maximum Nozzle Spacing	30"	40"
Direction of Spray Pattern	Down	Down
Maximum Speed	10 mph	10 mph
Spray Overlap (at each edge)	30%	50%

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### Flat-Fan Nozzles 30% (60% Total) Overlap



### Flood Nozzles 50% (100% Total) Overlap



Using nozzles, pressures, or setups different from the above chart will result in reduced control.

#### SPRAY CARRIER

Always use clean water (free of mud or clay), clear liquid nitrogen, or complete clear liquid fertilizers as the carrier when spraying Gramoxone Inteon. Muddy water, or suspension-type fertilizers containing clay, can inactivate Gramoxone Inteon. Never use suspension-type fertilizers containing clay as the spray carrier. If using a complete clear liquid fertilizer containing high phosphate levels as the spray carrier, always use the higher rate of Gramoxone Inteon and surfactant.

Note: When using liquid fertilizers such as 28% N as a spray carrier, it is important that nonionic surfactant still be used with Gramoxone Inteon. Liquid fertilizer carriers cannot substitute for surfactant.

#### RATES OF GRAMOXONE INTEON

Follow recommended rates listed with each use of Gramoxone Inteon. Use the higher label rates when weeds are dense or large. Also, use higher label rates for harvest aid when crop vegetation is dense. For broadcast applications of Gramoxone Inteon with backpack sprayers, the application rate should not exceed 0.50 lbs. a.i./A (one quart) in a minimum of 30 gallons of spray solution per acre.

#### SPRAY VOLUME

Follow recommended minimum spray volumes listed with each use of Gramoxone Inteon. These are minimum volumes only, and spray volumes should be increased as necessary to obtain complete coverage of the target weed or plant without runoff from the foliage.

WHEN SPRAYING LESS THAN 20 GALLONS OF SPRAY CARRIER PER ACRE, TARGET WEEDS SHOULD NOT EXCEED 6 INCHES IN HEIGHT.

#### APPLICATION TIMING

Gramoxone Inteon should be applied to emerged weeds when they are small. Weeds 1-6 inches in height are the easiest to control. Larger weeds may be more difficult to control. When weeds have been grazed or mowed, thus removing much of the green foliage, allow the weeds to regrow to a height of 2-4 inches before spraying if possible. Similarly, when forage or grain crops have been harvested prior to spraying, weeds present in the field will also have been cut. To allow for adequate green foliage to remain on weeds in this situation, raise cutter bars as high as possible from the ground to cut stubble and weeds at a greater height.

#### BURNDOWN OF GRASS COVER CROPS OR VOLUNTEER CEREALS

When using Gramoxone Inteon for control of grass cover crops or volunteer cereals, best results are obtained when Gramoxone Inteon is applied prior to tillering or after boot stage. This is especially important with a wheat cover crop or volunteer wheat. Treatments made between tillering and boot stage will generally not provide complete control. Do not expect complete control of perennial cover crops.

#### ENVIRONMENTAL CONDITIONS

Gramoxone Inteon is active over a wide range of environmental conditions. Cool weather (below 55°) will slow the activity of Gramoxone Inteon, as will cloudy, overcast weather, but will not affect performance.

#### SPOT SPRAYING

When only small areas are to be sprayed with labeled applications, it is advantageous to mix small quantities of Gramoxone Inteon. To aid in mixing small quantities, the following table should be consulted.

If The Broadcast Rate Per Acre for Gramoxone Inteon is:	Add The Following Amount of Gramoxone Inteon To 1 Gallon of Water
1 1/2 pts.	1/3 fl. oz.
2 pts.	3/8 fl. oz.
2 1/2 pts.	1/2 fl. oz.
3 pts.	2/3 fl. oz.

Always add 1/3-1/2 fl. oz. of a nonionic surfactant for each gallon of spray. When spot spraying in this manner, spray to thoroughly wet the foliage, but not to the point of runoff.

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### TANK MIXING FOR IMPROVED BURNDOWN OF DIFFICULT WEEDS AND RESIDUAL WEED CONTROL

#### Photosynthetic Inhibitor Herbicides

Difficult weeds can often be controlled by tank mixing Gramoxone Inteon with other herbicides. The addition of herbicides which are also photosynthetic inhibitors (PSI) will slow the activity of Gramoxone Inteon, allowing Gramoxone Inteon to thoroughly distribute itself within the treated leaf. The resulting level of control is usually greater than if Gramoxone Inteon was applied alone.

Gramoxone Inteon may be applied in tank mixture with the following PSI herbicides:

AAtrex® Herbicide  
Atrazine  
Bicep MAGNUM®  
Bicep II MAGNUM® Herbicide  
Bicep Lite II MAGNUM® Herbicide  
Boundary® 6.5EC Herbicide  
Canopy® Herbicide  
Caparol® 4L Herbicide  
Cotoran® Herbicide  
Lorox® Herbicides  
Lorox Plus® Herbicide  
Princep® Herbicide  
Sencor® Herbicide  
Sinbar® Herbicide  
Spike® Herbicide

Refer to respective product label(s) for rates of application, directions for use, limitations, cautions and for a list of weeds controlled.

#### Improved Weed Control With PSIs

Control of difficult weeds listed below and annual grass control will be enhanced by the addition of a PSI herbicide. For best results a second application is needed.

Barnyardgrass	Horseweed (Marestail)
Broadleaf signalgrass	Morningglory
Cheatgrass	Pennsylvania Smartweed
Cocklebur	Perennial Weeds (suppression only)
Fall Panicum	Prickly lettuce
Giant Ragweed	Sedges
Knotweed	Tansymustard
Kochia	Velvetleaf
Lambsquarters	Volunteer wheat
Malva (Cheeseweed)	Spiderwort

#### Improved Control of Perennial and Annual Broadleaf Weeds

When perennial broadleaf weeds such as Canada thistle, bindweed, dandelion, etc. or difficult to control annual broadleaf weeds such as giant ragweed or morningglory are present, tank mixes with 2,4-D ester (Low Volatile), 2,4-DB, Clarity®, Banvel®, or Flexstar® where labeled, will help improve control. Tank mixing the amine formulation of 2,4-D with Gramoxone Inteon may result in reduced grass control.

#### Order of Tank Mixing

In general, Gramoxone Inteon tank mixes with other products should be mixed as follows:

1. Fill spray tank 1/2 full with clean water or other approved carriers such as clear liquid fertilizer.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add dry formulations (WP, DF, etc.) to tank.
4. Add liquid formulations (SC, EC, L, etc.) to tank.
5. Add Gramoxone Inteon to tank.
6. Add nonionic surfactant to tank.
7. Fill remainder of spray tank.

Always refer to labels of other pesticide products for mixing directions and precautions which may differ from those outlined here.

Since many of the herbicides listed on this label are available in several types of formulations, it is advisable to perform a jar test to check physical compatibility.

### PRECAUTIONS AND RESTRICTIONS

#### EQUIPMENT/CONTAINER

Flush all spray equipment with water after use each day. Gramoxone Inteon is corrosive to aluminum. Aluminum spray equipment and aluminum aircraft structures that are exposed to spray solution or spray drift should be flushed thoroughly with water immediately after use.

In dry areas, dust stirred up by high winds or equipment tires can coat weed or plant leaves and reduce Gramoxone Inteon activity. Avoid applying Gramoxone Inteon in extremely dusty conditions.

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### LIMITATIONS AND PRECAUTIONS

- For Cotton Harvest Aid: Do not pasture livestock in treated fields or feed treated foliage.
- **DO NOT** use around home gardens, schools, recreational parks, or playgrounds.
- In preplant and preemergence (to the crop) uses, do not apply to soils lacking clay minerals, i.e., peat, muck, pure sand, artificial planting media.
- Seedbeds and plantbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence prior to treatment.
- To reduce germination of new weeds, seeding or transplanting should be done with a minimum amount of soil disturbance.
- Gramoxone Inteon used for preplant weed control over the top of plastic mulch may damage transplants which come in contact with the plastic. Sufficient rainfall or sprinkler irrigation to cause wash-off prior to planting may be needed to prevent damage to the crop.
- Weeds and grasses emerging after application of Gramoxone Inteon will not be controlled or suppressed.
- Unless otherwise indicated, crop plants emerged at time of application may be severely injured or killed if contacted by sprays of Gramoxone Inteon.

### APPLICATION INSTRUCTIONS AND CROP USE DIRECTIONS

The following tables indicate use patterns, rates, minimum spray volumes, preharvest intervals and other precautions, restrictions and comments specific to each crop. Read and follow directions carefully.

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
ALFALFA New seedlings (California only)	1	Broadcast	1.0-2.0 pts. See Table 2.	Ground: 10 gals. Air: 5 gals.	70	<ul style="list-style-type: none"> <li>• Apply during late winter or early spring.</li> <li>• Do not cut or harvest within 70 days after application.</li> <li>• Do not apply more than once during the first growing season.</li> <li>• Caution: Seedling alfalfa stands will be reduced and replanting may be necessary.</li> <li>• Not recommended for seedling alfalfa grown for seed.</li> <li>• Alfalfa foliage present at time of application will be burned.</li> </ul>
ALFALFA (No-till or conventional planting)	2	Preplant or Preemergence Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Apply prior to emergence of the crop.</li> <li>• Crop plants emerged at time of application will be killed.</li> <li>• Seeding should be done with a minimum amount of soil disturbance.</li> </ul>
ALFALFA Dormant season on established plantings Region A - See map at end of Alfalfa section.	1	Broadcast	2.0-3.0 pts.	Ground: 10 gals. Air: 5 gals.	42	<ul style="list-style-type: none"> <li>• For control of weeds, including bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dogfennel, tansymustard, london rocket, sowthistle, rescue brome, wild oats, and other winter annuals; and suppression of perennial weeds.</li> <li>• Do not apply if fall regrowth following last fall cutting is greater than 6", or if spring regrowth is more than 2".</li> <li>• Apply to well-established stands (at least 1-year old) after the crop is dormant.</li> <li>• Alfalfa foliage present at the time of application will be burned which may reduce the yield of the first cutting.</li> <li>• Do not cut or harvest within 42 days of application.</li> <li>• Do not apply more than once per season.</li> <li>• Tank mix with metribuzin (Sencor) for improved burndown of weed vegetation and residual weed control. Consult the metribuzin product label for a list of weeds controlled, rates of application, and precautions.</li> </ul>

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
ALFALFA  Dormant season tank mix with Velpar® L herbicide Region A - See map at end of alfalfa section.	2	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 10 gals.	42	<ul style="list-style-type: none"> <li>For control of weeds such as chickweed, downy brome and tansymustard.</li> <li>Use the 1.0 pt. rate of Gramoxone Inteon when weeds and grasses are less than 4" tall.</li> <li>Mix with 1-2 qts. of Velpar L per acre.</li> <li>Use the lower rate of Velpar L on loamy sands or sandy loams. Refer to Velpar L label for directions, limitations, cautions and for a list of weeds controlled.</li> <li>Apply once to established alfalfa stands during the dormant season.</li> <li>Do not apply if fall regrowth following last fall cutting is greater than 6", or if spring regrowth is more than 2".</li> <li>Do not apply to alfalfa during the first season after seeding.</li> <li>Temporary chlorosis may occur on alfalfa regrowth.</li> <li>Stress which may be caused in part by low fertility, disease, insects, winterkill, over cutting, drought or frost may increase the chances of crop injury.</li> <li><b>DO NOT USE</b> on gravelly or rocky soils, exposed subsoils, hardpan, sand or poorly drained alkaline soils as crop injury, including mortality, may result.</li> <li>Do not cut or harvest within 42 days of application.</li> </ul>
ALFALFA  Dormant Season  On established plantings: Region B-See map at end of Alfalfa section.	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals; and suppression of perennial weeds.</li> <li>Apply during late fall or winter months after the last fall cutting and before first spring cutting.</li> </ul>
On fall-seeded, newly established stands less than 1- year-old: Region A- See map at end of Alfalfa section.	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>In the California counties of Orange, Riverside and all counties north of these counties, do not apply if <b>spring</b> regrowth after grazing or cutting is more than 2". In all other areas within Region B, do not apply if regrowth after grazing or cutting is more than 2".</li> <li>Do not harvest within 60 days of application.</li> </ul>
On fall-seeded, newly established stands less than 1- year-old: Region B- See map at end of Alfalfa section.	1	Broadcast	0.75-1.25 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li><b>CAUTION:</b> Applications to alfalfa that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green alfalfa foliage present at the time of application will be burned.</li> <li>Total hay yield of first cutting may be reduced in alfalfa fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight.</li> <li>Do not apply more than once per season.</li> <li>Tank mix with metribuzin (Sencor) for improved burndown of weed vegetation and residual weed control in dormant established (at least 1-year old) alfalfa. Consult the metribuzin product label for a list of weeds controlled, rates of application, and precautions.</li> <li>Do not apply tank mix with metribuzin on newly established (less than 1-year old) alfalfa.</li> </ul> <p><b>California</b></p> <ul style="list-style-type: none"> <li>For desiccation of weeds including bluegrass, ryegrass, shepherdspurse, chickweed, tansymustard, foxtail, sowthistle and groundsel.</li> <li>Use high rate if ryegrass, shepherdspurse, sowthistle or groundsel is present.</li> </ul>

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>ALFALFA</b>  Between-cuttings treatment in established plantings. (Includes first year alfalfa) (All states East of the Rocky Mountains)	3	Broadcast	1.0 pt.	Ground: 10 gals.	30	<ul style="list-style-type: none"> <li>Weeds much beyond the seedling stage and the stubble of weeds cut off during harvest will be less affected by this treatment.</li> <li>Apply immediately after alfalfa has been removed for hay or silage.</li> <li>Do not treat more than 5 days after cutting.</li> <li>CAUTION: First year alfalfa stands and yields may be reduced if alfalfa is allowed to regrow more than 2".</li> <li>Alfalfa foliage present at time of application will be burned.</li> <li>In arid areas where moisture is limited, weed control may be reduced.</li> <li>Do not cut or harvest within 30 days of application.</li> <li>Make 1-3 applications, as needed, during the growing season. These sprays may be applied in addition to a dormant application.</li> <li>For first year alfalfa, do not apply more than twice during the first growing season.</li> </ul>
<b>ALFALFA</b> (For use only in the following states: ID, MT, NV, OR, UT, WA, WY)  Desiccation of alfalfa to facilitate harvest of alfalfa seed  Gramoxone Inteon/Reglone® Tank Mix	2	Broadcast  Broadcast	2.5-4.0 pts.  2.0-4.0 pts. Gramoxone Inteon/2 pts. Reglone	Ground: 20-25 gals. Air: 5-10 gals.  Ground: 20-25 gals. Air: 5-10 gals.	See Precautions  See Precautions	<ul style="list-style-type: none"> <li>Do not harvest until at least 4 days after application.</li> <li>Do not apply when weather conditions favor drift from treated areas.</li> <li>Do not apply by ground equipment within 25 ft., or by air within 75 ft. of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds.</li> <li>For use only on fields in production of alfalfa seed. Not for use on fields producing alfalfa for livestock feed. No portion of the treated field, including seed, seed screenings, hay forage, or stubble, may be used for human or animal feed.</li> <li>Do not cut current year's treated alfalfa seed crop for hay or forage. Do not graze current year's treated alfalfa seed crops.</li> <li>Treated alfalfa seed is not to be used for sprouting. All alfalfa seed treated with Gramoxone Inteon/Reglone tank mix is to be tagged at processing plants, "NOT FOR HUMAN CONSUMPTION". It shall be the grower's responsibility to notify the processing plants of any seed crop treated with Gramoxone Inteon/Reglone tank mix.</li> <li>Screenings from alfalfa seed processing are prohibited from feed channels. All Gramoxone Inteon/Reglone treated alfalfa seed screenings must be removed from the feed market.</li> </ul>

# Gramoxone Inteon™

Counties of:  
Del Norte  
Siskiyou  
Modoc  
Shasta  
Lassen  
Plumas  
Sierra  
Nevada

REGION A

REGION B

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
ALMONDS	5	Directed Spray	1.25-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems (except suckers) or foliage.</li> <li>Use a shield or wrap plant when spraying around young trees or vines.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>Do not apply when nuts to be harvested are on the ground.</li> <li>For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatments may be necessary.</li> </ul>
ARTICHOKE (Globe)	3	Directed Spray	2.5-4.0 pts.	Ground: 20-100 gals.	1	<ul style="list-style-type: none"> <li>Up to 3 applications per season, do not exceed 8 pts. per season.</li> <li>Applications at least 7 days apart.</li> <li>Do not harvest within 24 hours of last application.</li> </ul>
ASPARAGUS	3	Preplant or Preemergence Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply prior to emergence of the crop.</li> <li>Crop plants emerged at time of application will be killed.</li> </ul>
ASPARAGUS Preemergence to established plantings at least 2 years old	3	Broadcast or Banded Over-Row	2.5-4.0 pts.	Ground: 10 gals.	6	<ul style="list-style-type: none"> <li>Apply prior to emergence of crop or after last harvest.</li> <li>Crop plants emerged at time of planting will be killed.</li> </ul>



# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>BEANS, DRY</b>  Sweet lupin White sweet lupin White lupin Grain lupin  Adzuki beans Asparagus beans Black beans Broad beans Field beans Garbanzo beans Kidney beans Lablab beans Lima beans Moth beans Mung beans Navy beans Pinto beans Rice beans Snap beans Tepary beans Urd beans Wax beans  Blackeyed peas Chickpeas Cowpeas Crowder peas Southern peas  Catjang Guar	2	Harvest-Aid	1.2-2.0 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Add spreader (nonionic) at 1 qt./100 gals. of spray mix.</li> <li>For vining type beans or bush type with lush growth, use a single application of the higher rate.</li> <li>May also be applied as a split application. <b>DO NOT</b> make more than 2 applications or exceed a total of 2.0 pts./A. The split application may improve vine coverage.</li> <li>Apply when the crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 40% (bush type peas or beans) or 30% (vine type peas or beans) of the leaves still green in color.</li> <li><b>DO NOT</b> apply when weather conditions favor spray drift. A drift control agent may be included to reduce spray drift.</li> <li><b>NOT REGISTERED FOR USE ON DRY BEANS OR DRY PEAS IN CALIFORNIA.</b></li> </ul>
<b>PEAS, DRY</b>						
<b>BERRIES</b> Blackberries Blueberries Boysenberries Currant Elderberry Gooseberry Huckleberry Loganberry Raspberries	5	Postemergence Directed Spray	2.0-4.0 pts.	Ground: 50 gals.	—	<ul style="list-style-type: none"> <li>Apply before emergence of new canes or shoots as injury to those canes or shoots can occur.</li> <li>Apply as a coarse spray to avoid crop injury from fine spray mist.</li> </ul>
<b>CACAO</b>	5	Directed Spray	2.0-4.0 pts.	Ground: 50-200 gals.	1	<ul style="list-style-type: none"> <li>Apply when weeds are succulent and growth is from 1-6".</li> <li>For mature woody weeds, late-germinating weeds and grasses and for perennials; retreatment or spot treatment may be necessary.</li> <li>Do not allow spray to contact cacao plants as injury may result. Use a shield for young trees.</li> <li>Do not spray under windy conditions.</li> <li>Do not graze treated areas or feed treated cover crops to livestock.</li> </ul>
<b>CASSAVAS, TANIERS &amp; YAMS</b> (Puerto Rico only)	3 2	Shielded Post Directed Spray	2.0 pts.	Ground: 50 gals.	90	<ul style="list-style-type: none"> <li>Apply when weeds are succulent and growth is 1-6".</li> <li>On cassavas and taniers, do not make more than 3 applications per crop season.</li> <li>On yams do not make more than 2 applications per crop season.</li> <li>Do not allow spray to contact cassavas, tanier or yam plants as injury may result.</li> <li>Do not spray under windy conditions.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
CHEMICAL FALLOW General Information				Ground: 5 gals. Air: 5 gals.  See Precautions, Restrictions and Comments		<ul style="list-style-type: none"> <li>• Use higher spray volumes for better coverage as density of stubble, crop residue or weeds increase.</li> <li>• To control volunteer wheat or downy brome, fall-applied treatments generally work best with Gramoxone Inteon. If possible, tank mix with Atrazine for maximum burndown and residual control.</li> <li>• Apply from immediately after harvest up to emergence of the newly seeded crop as a broadcast or band treatment.</li> <li>• Cut wheat as high as possible to avoid cutting weeds too short, and allow the weeds to grow at least 2-3" after harvest before applying Gramoxone Inteon.</li> <li>• The addition of dicamba, (Banvel) or 2,4-D ester (Low Volatile) may aid in the suppression of emerged perennial broadleaf weeds and large annual broadleaf weeds.</li> <li>• Refer to 2,4-D ester (Low Volatile), Banvel or residual herbicide label(s) for directions, limitations, cautions and for a listing of weeds controlled.</li> <li>• For extended weed control during the fallow period, tank mixes with registered residual herbicide combinations other than those listed on this label are permissible.</li> <li>• Weeds taller than 6" may not be controlled.</li> <li>• Weeds and grasses emerging after application will not be controlled.</li> <li>• Crop plants emerged at the time of application will be killed.</li> <li>• By ground application, apply 5-60 gallons of spray mix per acre. If applying at &lt;10 GPA by ground, utilize the following additional precautions: <ul style="list-style-type: none"> <li>• Do not apply with floaters or exceed a speed of 10 mph.</li> <li>• Apply with flat fan nozzles only at 30-40 PSI.</li> <li>• Apply only in a tank mix with atrazine at a minimum of 0.5 lb. a.i./A.</li> <li>• By air, apply in 5-10 gals. of spray mix per acre.</li> </ul> </li> </ul>
CHEMICAL FALLOW  Continuous Wheat 2-3 Month Recropping Interval	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Make application at least 45 days prior to seeding.</li> <li>• Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see Photosynthetic Inhibitor Herbicides section) for volunteer wheat or downy brome control in the spring.</li> <li>• Refer to the Chemical Fallow General Information section.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CHEMICAL FALLOW</b>  Wheat-Fallow-Wheat Rotations (Fall applied after harvest; seeded 12-14 months later)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Spray before weeds produce seed.</li> <li>Volunteer wheat and downy brome control are better with late August or early September applications.</li> <li>Tank mix with Atrazine Marksman® Herbicide, or Command® Herbicide for enhanced burndown and residual weed control.</li> <li>Tank mix with metribuzin, (Sencor 75DF) for burndown and residual control of grass and broadleaf weeds.</li> <li>Refer to the product labels for specific use rates for your soil type, use directions, cautions and a list of weeds controlled.</li> <li>Refer to the Chemical Fallow General Information section.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Fallow-Wheat Rotations (Spring applied; seeded 3-5 months later)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Application should be made March 1 to April 15, prior to spring rains to conserve moisture.</li> <li>Volunteer wheat is easier to control after the boot stage, but soil moisture loss will be greater.</li> <li>Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see Photosynthetic Inhibitor Herbicides section) for volunteer wheat or downy brome control in the spring.</li> <li>Refer to the Chemical Fallow General Information section.</li> <li>Tank mix with metribuzin, (Sencor) for burndown and residual control of grass and broadleaf weeds.</li> <li>Refer to the metribuzin, (Sencor) label for use rates for your soil type, use directions, cautions, and weeds controlled.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Annual Crop <sup>1</sup> -Wheat Rotations (Fall applied in wheat stubble)	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Tank mix with AAtrex/Atrazine or Marksman for enhanced burndown and residual weed control. Refer to the labels for specific use rates for your soil type, use directions, cautions, and a list of weeds controlled.</li> <li>Spray after wheat harvest and before weeds produce seed. If grasses such as foxtails or barnyardgrass recover, respray before they develop seed.</li> <li>Volunteer wheat and downy brome are easier to control with late August to November applications.</li> <li>Refer to the Chemical Fallow General Information section.</li> </ul>
<b>CHEMICAL FALLOW</b>  Wheat-Annual Crop-Wheat Rotations (Spring applied prior to planting an annual crop <sup>1</sup> )  <sup>1</sup> Approved Annual Crops are grain sorghum, corn, wheat, or proso millet.	3	Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Tank mix with AAtrex/Atrazine for enhanced burndown and residual weed control. Refer to the labels for specific use rates for your soil type, use directions, cautions, and a list of weeds controlled.</li> <li>Use at least 2.0 pts. of Gramoxone Inteon per acre with a PSI (see Photosynthetic Inhibitor Herbicides section) for volunteer wheat or downy brome control in the spring.</li> <li>Follow the AAtrex/Atrazine recommendations pertaining to soil pH and recropping intervals.</li> <li>Refer to the Chemical Fallow General Information section.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CLOVER AND OTHER LEGUMES<sup>1</sup></b> Dormant Season  On established plantings: Region A- See map at end of Alfalfa section.  On established plantings: Region B- See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1-year-old: Region A- See map at end of Alfalfa section.  On fall-seeded, newly established stands less than 1-year-old: Region B- See map at end of Alfalfa section.  <sup>1</sup> Other legumes include velvetbean, lespedeza, lupine, sainfoin, trefoil, vetch, crown vetch, and milk vetch.	1	Broadcast	2.0-3.1 pts.	Ground: 10 gals. Air: 5 gals.	60	<ul style="list-style-type: none"> <li>For desiccation of weeds, including London rocket, sowthistle, rescue brome, wild oats, chickweed, ryegrass, bluegrass, cheatgrass, dogfennel, tansymustard, henbit, downy brome, and other winter annuals, and suppression of perennial weeds.</li> <li>Apply during late fall or winter months after the last fall cutting and before first spring cutting.</li> <li>Do not apply if regrowth after grazing or cutting is more than 2".</li> <li>Do not harvest within 60 days of application.</li> <li>CAUTION: Applications to clover or other legumes that is not dormant, or has broken dormancy, may result in stand and/or yield reductions. Replanting may be necessary. Green clover or other legumes foliage present at the time of application will be burned.</li> <li>Clover or other legumes foliage present at the time of application will be discolored and temporarily stunted.</li> <li>Total hay yield of first cutting may be reduced in clover or other legumes fields with severe weed infestation. This reduction will usually be directly proportionate to the loss of weed weight.</li> <li>Do not apply more than once per season.</li> </ul> <b>California</b> <ul style="list-style-type: none"> <li>For desiccation of weeds including bluegrass, ryegrass, shepherds-purse, chickweed, tansymustard, foxtail, sowthistle and groundsel.</li> <li>Use high rate if ryegrass, shepherds-purse, sowthistle or groundsel is present.</li> </ul>
	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	
	1	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	60	
	1	Broadcast	0.75-1.2 pts.	Ground: 10 gals. Air: 5 gals.	60	
<b>CORN</b> <b>FIELD CORN</b> <b>POPCORN</b> <b>SWEET CORN</b> <b>SEED CORN</b> (Used alone)	3	Preplant or Preemergence (Broadcast or Banded Over Row)	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>Includes field, fresh, sweet, forage, fodder and popcorn.</li> <li>Seedbeds should be formed as far ahead of planting and treatment as possible to permit maximum weed and grass emergence.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>CORN</b>  Tank Mixes for No-till/Reduced Till	3	Preplant or Preemergence (Broadcast or Banded Over Row)	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.*  *Refer to respective product labels to determine if these products can be applied by air.	—	<ul style="list-style-type: none"> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: 2,4-D Ester (Low Volatile), 2,4-D Amine, AAtrex/Atrazine, Balance®, Banvel, Bicep MAGNUM, Bicep II MAGNUM, Bicep Lite II MAGNUM, Callisto®, Clarity, Degree™, Degree Xtra™, Distinct®, Dual MAGNUM, Fultime™, Frontier®, Guardsman®, Harmony® Extra Herbicide (Preplant Only), Harness®, Harness® Xtra, Lorox, Lumax®, Lexar™, Princep, Prowl®.</li> <li>Gramoxone Inteon may also be tank mixed with Warrior®, Karate®, Ambush® Insecticide.</li> <li>Refer to respective product label(s) for rates of application, directions for use, limitations, cautions, and for a list of weeds or insects controlled.</li> </ul>
<b>FIELD CORN</b> <b>POPCORN</b> <b>SWEET CORN</b> <b>SEED CORN</b>	3	Postemergence Directed Spray (Including Hooded or Shielded)	1.0-2.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Apply when weeds are actively growing.</li> <li>Use higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>Severe damage and/or complete kill can occur if spray contacts corn plants.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height.</li> <li>Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>Apply when corn is at least 10" tall with nozzles arranged to spray no higher than the lower 3" of corn stalks.</li> <li>Corn plants shorter than 10" may be injured and not recover (corn height measured from soil surface to top of whorl).</li> <li>For corn greater than 20" tall, arrange the nozzles to spray no higher than the lower 1/3 of the corn stalks.</li> <li>Corn foliage sprayed will be injured, but the crop will recover and develop normally.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
FIELD CORN POPCORN SEED CORN	1	Harvest Aid Broadcast	1.2-2.0 pts.	Ground: 20 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>• Make ONE (1) application at least 7 days prior to harvest.</li> <li>• Apply after the corn is mature after the black layer has formed at the base of the kernels (this indicates maturity). Consult your local agricultural authority for help in identifying the black layer.</li> <li>• Add nonionic surfactant containing at least 75% surface active ingredient at 0.25% v/v.</li> <li>• Use 2.0 pts. to desiccate mature broadleaf weeds and grasses or broadleaf weeds and grasses that are taller than 18".</li> <li>• Drought stressed plants, especially broadleaf weeds can be difficult to kill and desiccation may not be complete.</li> </ul>
FIELD CORN ONLY (grain, fodder, forage)	3	Postemergence directed spray USDA Witchweed Eradication Program	2.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>• Initiate sprays in late June to early July and repeat in early August if regrowth occurs.</li> <li>• Follow application instructions in postemergence directed spray section above.</li> </ul>
FIELD CORN ONLY (grain, fodder, forage) 2,4-D Amine Tank Mix	3	Postemergence directed spray USDA Witchweed Eradication Program	8.0 fl. oz. + 0.5 lbs. 2,4-D Amine AE	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>• Apply as a directed spray onto grassy weeds and witchweed before witchweed blooms. Reapply if regrowth occurs.</li> <li>• Follow application instructions in postemergence directed spray section above.</li> </ul>
COTTON (Used alone)	3	Preplant or Preemergence	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Apply prior to, during or after planting, but before crop emergence.</li> <li>• For fallow bed treatment, beds should be preformed to permit maximum weed and grass emergence prior to treatment.</li> <li>• Seeding should be done with a minimum of soil disturbance.</li> </ul>
COTTON (California only; Used alone)	3	Preplant	8.0-16 fl. oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• For control of volunteer barley in preformed seedbeds.</li> </ul>
COTTON Goal™ Herbicide Tank Mix	3	Preplant or Fallow Bed Broadcast	2.5-4.0 pts.	Ground or Air: 10 gals.	—	<ul style="list-style-type: none"> <li>• Refer to Goal label for specific use directions and restrictions, and weeds controlled.</li> </ul>
COTTON Other Tank Mixes	3	Preplant or Preemergence	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>• For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: Cotoran, Dual MAGNUM®, Meturon®, Cotton-Pro®, Caparol, Diuron, Harmony® Extra (Preplant Only), MSMA, Prowl, Zorial®.</li> <li>• When tank mixing with Cotoran DF or Meturon DF, follow mixing instructions in the Order of Tank Mixing section carefully and maintain constant agitation.</li> <li>• When tank mixing with any of the herbicides listed above, refer to that product's label for specific directions and restrictions and for a list of weeds controlled.</li> </ul>

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>COTTON</b>  General directions for all cotton harvest aid uses		Harvest Aid				<p>Harvest Aid Use Precautions (Applies to all sections)</p> <ul style="list-style-type: none"> <li>Do not pasture livestock in treated fields or feed treated foliage.</li> <li>Do not apply to cotton within 3 days before harvest.</li> <li>Repeat application if necessary. Do not exceed a total of 2.0 pts./A as a harvest aid.</li> <li>May be tank mixed with other cotton harvest aid materials known to be effective by the local expert. Unless otherwise instructed in this label, refer to tank mix product label for rates, directions, limitations and cautions.</li> <li>Gramoxone Inteon can be applied in a tank mix with methyl parathion and/or Karate insecticide.</li> <li>Nodes above cracked bolls (NACB) timing is for guidance and is not intended to restrict the local expert in their use of the product.</li> </ul>
<b>SOUTHERN COTTON</b>  Harvest aid for boll opening and defoliation (tank mix with phosphate and chlorate defoliants)	4	Broadcast	8.0 fl. oz. + 1 pt. phosphate or 1 gal. chlorate	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Development of immature bolls will be inhibited.</li> <li>Apply when 80% or more of the bolls are open and the remaining bolls to be harvested are mature.</li> </ul>
<b>SOUTHERN COTTON</b>  Additional tank mixes for boll opening and defoliation	4	Broadcast	3.1-5.0 fl. oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>To aid in defoliation and opening of mature bolls, Gramoxone Inteon may be tank mixed with the following products: Accelerate® Defoliant, DEF® Defoliant, Dropp® Defoliant, Ethephon® Plant Growth Regulator, Folex® Defoliant, Harvade® Harvest Growth Regulator, Prep™ PGR.</li> <li>Apply when 60% or more of the bolls are open and the remaining bolls to be harvested are mature.</li> <li>Development of immature bolls will be inhibited.</li> <li>Refer to tank mix product label for rate, directions, limitations and cautions.</li> </ul>
<b>SOUTHERN COTTON</b>  Post Defoliation-To aid in opening of mature bolls and to desiccate green weeds	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>Use higher rate if weed infestation is heavy or dense.</li> <li>Apply when 75% or more of the bolls are open and remaining bolls to be harvested are mature.</li> <li>Development of immature bolls will be inhibited.</li> <li>After a defoliation or conditioning application has been made, delay desiccation application of Gramoxone Inteon approximately 3-7 days to minimize leaf sticking.</li> </ul>
<b>WESTERN COTTON</b>  Harvest aid for boll opening and early defoliation	4	Broadcast	5.5-8.0 fl. oz. + phosphate or sodium chlorate; and/or other compatible harvest aid products.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Use higher rate of Gramoxone Inteon on rank cotton.</li> <li>Do not use more than 8.0 fl. oz. of Gramoxone Inteon for early defoliation as excessive desiccation may occur.</li> <li>Early defoliation timing is when 60% or more of the bolls are open and the remaining bolls to be harvested are mature (approximately 4 NACB).</li> <li>Development of immature bolls will be inhibited.</li> <li>Do not use more than 4.0 lbs. of actual sodium chlorate defoliant per acre at this early defoliation timing.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
WESTERN COTTON  Harvest aid for boll opening and mid-to-late defoliation	4	Broadcast	8.0-16.0 fl. oz. alone or tank mix with sodium chlorate or phosphate defoliant and/or other compatible harvest aid products.	Ground: 10 gals. Air: 5 gals.	3 (Alone)	<ul style="list-style-type: none"> <li>In desert cotton areas or on rank vigorous cotton, use the 16 fl. oz. rate of Gramoxone Inteon.</li> <li>Mid-to-late defoliation timing is when 75% or more of the bolls are open and remaining bolls to be harvested are mature (approximately 3 or fewer NACB).</li> <li>Development of immature bolls will be inhibited.</li> </ul>
COTTON Stripper or Spindle Harvested  Harvest aid for defoliation and boll opening	4	Broadcast	3.0-11.25 fl. oz.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>IT IS ADVISABLE, BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, TO APPLY THE RANGE OF RATES ON A SMALL BLOCK OF COTTON TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS.</li> <li>Apply when 75% of the bolls are open and the remaining bolls to be harvested are mature.</li> <li>DEVELOPMENT OF IMMATURE BOLLS WILL BE INHIBITED. SLICE BOLLS AND INSPECT THE SEED FOR MATURITY.</li> <li>Gramoxone Inteon may be applied alone or tank mixed with the following cotton harvest aids: Accelerate Defoliant, DEF® Defoliant, Ethephon® Plant Growth Regulator, Folex® Defoliant, Harvade® Harvest Growth Regulator, Prep PGR.</li> <li>May be applied as a split application. Do not exceed a total of 2.0 pts/A per year.</li> <li>To avoid leaf sticking, apply Gramoxone Inteon as a desiccant approximately 3-7 days after defoliation or a conditioning application and 7-14 days before harvest.</li> <li>Cooler temperatures may cause a longer waiting period between application of Gramoxone Inteon as a desiccant and defoliation/condition.</li> <li>Lower rates in the range may be necessary south of I-10 in Texas where temperatures are typically higher during defoliation.</li> </ul>
COTTON  Late season desiccation	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>IT IS ADVISABLE, BECAUSE OF EXTREMES IN ENVIRONMENTAL AND PLANT CONDITIONS, TO APPLY THE RANGE OF RATES ON A SMALL BLOCK TO DETERMINE THE RATE THAT BEST FITS YOUR NEEDS.</li> <li>May be applied as a split application. Do not exceed a total of 2.0 pts/A per year.</li> <li>Apply when 85% of the bolls are open and the remaining bolls to be harvested are mature (approximately 0 NACB).</li> <li>Development of immature bolls will be inhibited. Slice bolls and inspect the seed for maturity.</li> <li>Lower rates in the range may be necessary south of I-10 in Texas where temperatures are typically higher during defoliation.</li> <li>If a defoliation or conditioning application has been made, delay desiccation application of Gramoxone Inteon approximately 3-7 days to minimize leaf sticking.</li> <li>May be tank mixed with other harvest aid materials known to the local expert to be effective.</li> </ul>
COTTON  Desiccation of Regrowth	4	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	3	<ul style="list-style-type: none"> <li>Use to desiccate regrowth occurring after defoliation or desiccation.</li> <li>Regrowth is difficult to control, therefore, thorough coverage with the full recommended rate is necessary.</li> <li>Control is dependent on growing conditions and desiccation of small new regrowth may not always be complete.</li> <li>Use higher rate if regrowth is excessive.</li> </ul>



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EASTER LILIES (Field grown)	2	Preemergence	2.5-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Do not apply more than twice per season.</li> </ul>
FALLOW LAND Prior to planting of any crops.	2	Preplant Broadcast to Fallow Land	1.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Fallow land may be between operations such as disking, ripping, plowing, leveling, irrigating or listing for ground preparation purposes.</li> <li>Use for the control of weeds such as bluegrass, chickweed, henbit, downy brome, ryegrass, cheatgrass, dog fennel, tansy mustard, London rocket, sowthistle, rescue brome, wild oats, volunteer cereals and other winter annuals and for suppression of perennial weeds or sedges.</li> <li>Use the higher rate for weeds approaching the maximum size of 6".</li> <li>Do not make more than 2 applications during the fallow period.</li> <li>Allow maximum weed emergence prior to application to maximize the benefit of this use.</li> <li>Adhere to the preharvest intervals and other crop specific restrictions for planted crops elsewhere on this label.</li> </ul>
GRASSES (For Seed; For Use in Seedbed Preparation)	3	Preplant, At Planting, or Preemergence	2.0-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Prepare the seedbeds and allow weeds to germinate.</li> <li>Apply Gramoxone Inteon when weeds are at the 3-5 leaf stage.</li> <li>Repeat applications as necessary prior to grass emergence.</li> <li>Do not graze treated areas or use the seed or straw from treated areas for animal feed or bedding.</li> </ul>
GUAR (Preharvest desiccation)	3	Preharvest	2.0 pts.	Ground: 10 gals.	4	<ul style="list-style-type: none"> <li>Apply after the pods are fully mature.</li> <li>Do not graze treated areas or use the treated forage for animal feed.</li> </ul>
GUAVA	4	Directed Spray	3.75 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems, fruit or foliage.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>For mature woody weeds, late-germinating weeds and grasses, and perennials, retreatment or spot spraying may be necessary.</li> </ul>
HOPS (ID, OR, & WA only)	3	Directed Spray and/or Suckering and Stripping	2.0 pts.	Ground: 10 gals.	14	<ul style="list-style-type: none"> <li>Retreatment or spot treatment may be necessary.</li> <li>Do not apply more than 3 times per season.</li> <li>Do not allow spray to contact green stems, foliage, flowers, or cones as injury may result.</li> <li>Do not allow animals to graze in treated hopyards.</li> <li>Hop vine refuse and silage may be fed to livestock.</li> <li>For suckering and stripping, spray only the basal 2 ft. of the vines.</li> <li>Experience with varieties other than Cascade, Yakima Cluster, and Bullion is limited. If using Gramoxone Inteon on other varieties than these, test the use pattern on a small number of vines of each variety to determine sensitivity to injury. Do not use on unlisted varieties if unacceptable crop injury occurs.</li> <li>Chemical Pruning: To burn back existing vines and obtain even emergence of subsequent vines, spray when vines are less than 3 ft. tall.</li> <li>APPLICATION TO HOP VINES LESS THAN 6 FT. TALL MAY CAUSE UNACCEPTABLE INJURY.</li> </ul>

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LENTILS	2	Harvest Aid	1.2-2.0 pts.	Ground: 20 gals. Air: 7 gals.	7	<ul style="list-style-type: none"> <li>Add nonionic surfactant at 0.25% v/v (2 pts./100 gals.) of the finished spray volume.</li> <li>DO NOT exceed a total of 2.0 pts./A per season.</li> <li>May also be applied as a split application. If applied as a split application, do not exceed a total of 2 pts./A per season. Split application may improve coverage.</li> <li>Apply when crop is mature and at least 80% of the pods are yellowing and mostly ripe with no more than 30% of the leaves still green in color.</li> <li>DO NOT apply when weather conditions favor spray drift. A drift control agent may be included to reduce spray drift.</li> <li>NOT REGISTERED FOR USE ON LENTILS IN CALIFORNIA.</li> </ul>
MINT (Peppermint, Spearmint)	2	Dormant Season	2.0-3.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For suppression of weeds such as Italian ryegrass, prickly lettuce, groundsel, chickweed, downy brome and bluegrass.</li> <li>Apply when crop is dormant before spring growth begins and when weeds are less than 6" tall.</li> <li>Do not apply more than 3.0 pts./A per dormant season.</li> <li>May be tank mixed with Sinbar Herbicide (terbacil) weed killer for improved contact activity and residual control of Italian ryegrass, prickly lettuce and groundsel. Apply this tank mixture no more than once per season. Refer to the Sinbar label for rates, directions, and cautions and for a list of weeds controlled.</li> </ul>
ONIONS (seeded) AND GARLIC	1	Preplant/Preemergence	2.5-4.0 pts.	Ground: 10 gals.	60 200 (CA only)	<ul style="list-style-type: none"> <li>Use the higher rate for heavy weed infestations or wild oat control. Apply only one application per season at the 4.0 pts./A dosage.</li> <li>Allow maximum weed and grass emergence prior to treatment but apply prior to crop emergence.</li> <li>Apply a maximum of 4.0 pts./A per season.</li> </ul>
PASSION FRUIT	5	Directed Spray	3.75 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Use a shield or wrap vine if bark is still green at application time.</li> <li>If application is to be made during harvest season, pick all fruit off the ground prior to application.</li> <li>Do not allow animals to graze on treated areas.</li> <li>Retreatment or spot treatment may be necessary.</li> </ul>
PEANUTS	2	Broadcast At Ground Crack Postemergence	8.0-16.0 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>To control or suppress small (1-6") emerged annual grass and broadleaf weeds in peanuts at ground crack. A second application may be made up to 28 days after ground crack.</li> <li>For at ground crack use, Gramoxone Inteon can be tank mixed with Pursuit® Herbicide or Dual MAGNUM for residual weed control. Consult the Pursuit or Dual MAGNUM label for a list of weeds controlled, rates of application, and precautions.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per acre per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Do not apply by air.</li> </ul>

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Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
PEANUTS Basagran® Herbicide Tank Mix	2	Broadcast At Ground Crack Postemer- gence	8.0-16.0 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>For improved control of weeds such as cocklebur, bristly starbur, smartweed and prickly sida, tank mix Gramoxone Inteon with Basagran at 1 pt./A.</li> <li>This tank mix can be applied at the ground crack stage of peanuts. A second application may be made up to 28 days after ground crack.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per acre per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Refer to the Basagran label for specific use directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not apply this tank mix if peanuts show injury (leaf phytotoxicity and/or plant stunting) produced by any other herbicide treatment as injury may be enhanced and/or prolonged.</li> <li>Do not apply this tank mix during prolonged periods of drought or unseasonably cold weather as unsatisfactory weed control may result.</li> <li>Do not apply by air.</li> </ul>
PEANUTS Butyrac® Herbicide or Butoxone® Herbicide 200 Tank Mix	2	Broadcast Postemer- gence	8.0-16.0 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>For improved control of weeds such as cocklebur, sicklepod and morningglory tank mix Gramoxone Inteon with 8-16 fl. oz. (0.125-0.25 lbs.) per acre of Butyrac or Butoxone 200.</li> <li>Make no more than 2 applications per season and do not apply a total of more than 16.0 fl. oz. of product per season.</li> <li>Crop foliage sprayed will be injured in the form of bronzing and crinkling but the crop will recover and develop normally.</li> <li>Refer to the complete Butyrac or Butoxone 200 label for specific use directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not apply by air.</li> </ul>
PERSIMMON	5	Directed Spray	3.75 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems, fruit, or foliage.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>For mature woody weeds, late-germinating weeds and grasses, and perennials, retreatment or spot spraying may be necessary.</li> </ul>
PIGEON PEAS (Puerto Rico only)	1	Directed Spray	2.0 pts.	Ground: 10 gals.	60	<ul style="list-style-type: none"> <li>Avoid contact with pigeon pea foliage.</li> <li>Do not make more than 1 application per season.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> <li>Cannery waste can be fed to livestock.</li> </ul>
PINEAPPLE	3	Directed Spray	2.0-4.0 pts.	Ground: 10 gals.	20	<ul style="list-style-type: none"> <li>Retreatment may be necessary on more mature weeds.</li> <li>Do not exceed 3 applications per season.</li> </ul>
POTATO	3	Preplant or Preemer- gence Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply up to ground cracking, before potatoes have emerged.</li> </ul>
POTATO (California, Washington, Oregon, Idaho only; Used alone)	3	Preplant Broadcast	8.0-16.0 fl. oz.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>

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RICE	3	Preplant or Preemergence Broadcast	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Apply as a broadcast spray before, during or after planting, but before crop emergence. Use higher rates and spray volumes when vegetation is dense.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> <li>Weeds and grasses emerging after application will not be controlled. Crop plants emerged at time of application will be killed.</li> <li>For improved or extended weed control, Gramoxone Inteon may be tank mixed with other herbicides registered for this use. Refer to tank mix herbicide labels for specific directions, limitations, cautions and for a list of weeds controlled.</li> <li>Do not flood/flush within 48 hours of application in order to ensure complete kill of vegetation. If cool, cloudy and/or wet weather delays speed of kill, do not flood/flush until complete kill is evident.</li> </ul>
SAFFLOWER	3	Preplant or Preemergence Broadcast or Banded Over Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>Apply before, during, or after planting but before crop emergence.</li> </ul>
SAFFLOWER (California only)	3	Preplant Broadcast	1.0 pt.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> </ul>
SMALL GRAINS (Barley, wheat)	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 5 gals. Air: 5 gals.	-	
SMALL GRAINS (Wheat Only) Hoelon® 3EC Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	-	<ul style="list-style-type: none"> <li>A tank mix with Hoelon 3EC will improve grass control.</li> <li>Apply when weeds are actively growing and 1-6" in height. Weeds 6" or taller may not be controlled.</li> <li>Do not apply this tank mix to Barley as crop injury may result.</li> </ul>
SORGHUM (Grain)	3	Preplant/Preemergence Broadcast or Band	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Seedbeds should be formed as far ahead of planting as possible to allow maximum weed and grass emergence.</li> <li>Seeding should be done with a minimum amount of soil disturbance.</li> </ul>
SORGHUM (Grain)  Atrazine & 2,4-D ester (Low Volatile) Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with Atrazine for improved preemergence or residual weed control. The addition of 2,4-D ester (Low Volatile) may aid in the suppression of perennial and annual broadleaf weeds emerged at the time of application. Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and a list of weeds controlled.</li> </ul>
SORGHUM (Grain)  Harmony® Extra Herbicide Tank Mix	3	Preplant	2.0-3.75 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with Harmony Extra for improved weed control.</li> <li>Refer to the Harmony Extra label for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> </ul>

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SORGHUM (Grain)	2	Postemergence Directed (Including Hooded or Shielded)	1.0-2.0 pts.	Ground: 10 gals.	48 (grain) 20 (forage)	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• Use higher rate on larger or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray contacts sorghum plants.</li> <li>• Do not exceed 2 postemergence-directed applications or exceed a total of 4.0 pts. Gramoxone Inteon per season.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• To avoid excessive crop phytotoxicity, use a hooded or shielded sprayer with skids or wheels on the spray boom to maintain spray height.</li> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply when sorghum is at least 12" tall when naturally standing.</li> <li>• Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Use precision directed-spray application equipment adjusted so that no more than the lower 3" of the sorghum stalk is contacted by the application spray.</li> <li>• Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>
SOYBEANS	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Do not exceed a total of 6.0 pts. of Gramoxone Inteon per season.</li> <li>• Apply as a broadcast spray before, during or after planting, but before crop emergence.</li> <li>• For improved burndown or residual control, Gramoxone Inteon may be tank mixed with the following herbicides: 2,4-DB, 2,4-D, Authority®, Canopy, Canopy XL, Command, Dual MAGNUM, Dual II MAGNUM, Goal, Harmony® Extra (Preplant Only), Lorox, Lorox Plus, Flexstar, Firstrate™, Frontier, Gemini®, Warrior, Karate, Prowl, Pursuit, Scepter®, Sencor, Surflan®, Turbo®.</li> <li>• The rate of Gramoxone Inteon to be used in these tank mixtures is dependent on weed height and growing conditions. Use the highest recommended rate of Gramoxone Inteon under dry conditions or where the weed canopy is dense. Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> <li>• The lower rate may be used when weeds are less than 4" tall and a selective post-emergence spray or cultivation will be made within 3 weeks after planting.</li> <li>• Seeding should be done with a minimum amount of soil disturbance.</li> <li>• Do not graze or harvest for forage or hay before the R3 stage of soybean development (early pod).</li> </ul>

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SOYBEANS  2,4-D ester (Low Volatile) Tank Mix	3	Preplant or Preemergence	Weeds 1-3": 2.0-2.5 pts. Weeds 3-6": 2.5-3.0 pts. Weeds 6": 3.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>• Apply 2,4-D ester (Low Volatile) at 0.35-0.475 lbs. a.i./A at least 7 days prior to planting.</li> <li>• Apply 2,4-D ester (Low Volatile) at 0.475-0.95 lbs. a.i./A at least 30 days prior to planting.</li> <li>• Do not apply 2,4-D ester (Low Volatile) prior to planting soybeans if you are not prepared to accept the results of soybean injury including possible loss of stand and yield.</li> <li>• Do not use the amine formulation as Gramoxone Inteon activity may be reduced.</li> <li>• May be tank mixed with residual herbicides listed above.</li> <li>• Refer to the 2,4-D ester (Low Volatile) label for a list of rates, directions, limitations and cautions and for a list of weeds controlled.</li> </ul>
SOYBEANS	3	Postemergence Directed Spray (Includes Hooded or Shielded)	4.5-8.0 fl. oz.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>• Apply when weeds are actively growing.</li> <li>• For control of seedling johnsongrass, crabgrass, goosegrass, Brachiaria, Texas millet and pigweed less than 2" tall, use the lower rate of Gramoxone Inteon.</li> <li>• For control of 2-4" red rice, Brachiaria, barnyardgrass, crabgrass, goosegrass, seedling johnsongrass, giant foxtail, and fall panicum, use 8.0 fl. oz. of Gramoxone Inteon.</li> <li>• For control of 2-3" sicklepod, purslane, pigweed, cutleaf ground cherry, and common ragweed, use 8.0 fl. oz. of Gramoxone Inteon.</li> <li>• For control of 2-4" grasses in mixture with common cocklebur, morningglory, and red rice, apply Gramoxone Inteon at 8.0 fl. oz./A plus 0.2 lb. active ingredient per acre of a 2,4-DB formulation.</li> <li>• Refer to the 2,4-DB label for directions, limitations, and cautions.</li> <li>• Do not graze or harvest for forage or hay.</li> <li>• If needed make a second and final application 7-14 days later.</li> </ul> <p><b>HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Apply by directing spray between the rows and using hooded or shielded sprayers to prevent spray contact with crop plants.</li> <li>• Use higher rate on larger (&gt; 6") or hard to control weeds. Weeds 6" or taller may not be controlled.</li> <li>• Severe damage and/or complete kill can occur if spray intentionally or accidentally (including drift of fine droplets) contacts the plants.</li> </ul> <p><b>DIRECTED SPRAY WITHOUT HOODED OR SHIELDED SPRAYERS</b></p> <ul style="list-style-type: none"> <li>• Do not treat if soybeans are less than 8" tall.</li> <li>• Use precision directed spray application equipment adjusted so that no more than the lower 3" of the soybean plant is contacted by the application spray.</li> <li>• Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>• Some crop injury will occur. The degree of injury is related to the precision of application and spraying conditions.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
SOYBEANS	3	Harvest Aid	8.0-16.0 fl. oz.	Ground: 20 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Indeterminant varieties: Apply when at least 65% of the seed pods have reached a mature brown color or when seed moisture is 30% or less.</li> <li>Determinant varieties: Apply when plants are mature, i.e., beans are fully developed, 1/2 of leaves have dropped, and remaining leaves are yellowing.</li> <li>Immature soybeans will be injured.</li> <li>Mature cocklebur, especially drought-stressed plants, are tolerant to Gramoxone Inteon and desiccation will not be complete. Always use the higher rate for cocklebur.</li> <li>Do not apply within 15 days of harvest.</li> <li>Do not graze or harvest for forage or hay.</li> </ul>
STRAWBERRIES	3	Postemergence Directed Spray	2.0 pts.	Ground: 20 gals.	21	<ul style="list-style-type: none"> <li>Apply by directing spray between the rows and using shields to prevent spray contact with crop plants.</li> <li>Do not allow spray to contact strawberry plants as injury or excessive residues may result.</li> <li>Do not apply more than 3 times per season.</li> <li>Do not graze livestock in treated areas.</li> </ul>
SUGAR BEETS	3	Preplant or Preemergence	2.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Use the higher rate for heavier weed infestations.</li> <li>Seeding or transplanting should be done with a minimum amount of soil disturbance.</li> <li>Crop plants emerged at time of application will be killed.</li> <li>Can be used in fallow bed/stale seedbed for weed control.</li> <li>Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.</li> </ul>
SUGARCANE	2	Postemergence Directed Spray (Includes Hooded or Shielded)				<p><b>General Comments</b></p> <ul style="list-style-type: none"> <li>Apply as a hooded, shielded or directed spray to avoid contact with cane foliage to prevent leaf burn and yield reduction.</li> <li>Make a second and final application, if necessary, when new weed growth is 2-6" high.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> </ul>
— Florida —	2		2.0 pts.	Ground: 50 gals.	—	<ul style="list-style-type: none"> <li>For optimum results, apply in early spring (March-April) when weeds are small.</li> <li>Do not apply after June 1 as cane growth may be stunted and yields reduced.</li> </ul>
— Hawaii —	2		2.0 pts.	Ground: 20 gals.	—	<ul style="list-style-type: none"> <li>Do not apply after cane rows have closed in.</li> </ul>
— Louisiana —	2		1.0-3.0 pts.	Ground: 20 gals.	30	<ul style="list-style-type: none"> <li>For tiller control, apply when tillers are less than 18" high.</li> <li>Use the higher rate for heavier weed infestations or tiller growth.</li> </ul>
— Florida & Texas —	1	Harvest Aid	0.6-1.0 pts.	Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Use higher rate under cool, cloudy weather conditions.</li> <li>Apply 3-14 days before burning and harvest.</li> </ul>
SUNFLOWER	3	Preplant or Preemergence Broadcast or Banded Over Row	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Apply before, during, or after planting but before crop emergence.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
SUNFLOWER	2	Preharvest Desiccation Broadcast	1.2-2.0 pts.	Ground: 10 gals. Air: 5 gals.	7	<ul style="list-style-type: none"> <li>Apply when sunflower seeds reach physiological maturity (when seed moisture is 35% or lower). For many varieties, this corresponds to the time when the back of the heads are yellow and the bracts are turning brown.</li> <li>Do not graze treated areas or feed treated forage to livestock.</li> <li>Use the higher rate when crop stands or weed infestations are heavy.</li> </ul>
TARO, DRYLAND (Hawaii Only)	2	Postemergence Directed Spray	2.0-3.0 pts.	Ground: 10 gals.	180	<ul style="list-style-type: none"> <li>Do not allow spray to contact the taro plants as injury may result.</li> <li>Make the first application when weed growth is 1-4" high.</li> <li>Weeds emerging after the application will not be controlled.</li> <li>A single re-treatment may be made; however, do not harvest dryland taro within 6 months of the last application.</li> </ul>
TREE PLANTATION ESTABLISHMENT Deciduous and Conifers	3	Preplant Broadcast	2.0-4.0 pts.	Ground: 20 gals.	—	<ul style="list-style-type: none"> <li>Prepare ground early to allow maximum emergence of weeds.</li> <li>Apply prior to planting. Plant with minimal soil disturbance.</li> <li>Use the higher rate for heavier weed infestations.</li> <li>For improved burndown or residual control, tank mix Gramoxone Inteon with other herbicides labelled for this use.</li> <li>Refer to the specific tank mix herbicide label(s) for rates, directions, limitations, and cautions and for a list of weeds controlled.</li> <li>Do not apply in less than 20 gals/A as weed control will be reduced.</li> </ul>
<b>TREES AND VINES</b> Orchards, Vineyards, Windbreak, Shade & Ornamental Trees  Acerola Apples Apricots Avocados Bananas Beechnut Brazil Nut Butternut Calamondin Cashew Cherries Chestnut Chinquapin Citrus Citron Coffee Figs Filberts Grapefruit Grapes Hickory Nut Kiwi Fruit Kumquat Lemon Lime Macadamia Nuts Mandarin Nectarines Olives Orange (sour & sweet) Papayas Peaches Pears Pecans Pistachios Plums Prunes	5 except for: Apricots 3 Cherries 3 Kiwi Fruit 3 Nectarines 3 Olives 4 Peaches 3 Pistachios 5 (only 2 after shells split) Plums 3	Directed Spray	2.5-4.0 pts.	Ground: 10 gals.	Apricots 28 Cherries 28 Figs 13 Kiwi Fruit 14 Nectarines 28 Olives 13 Peaches 14 Pistachios 7 Plums 28	<ul style="list-style-type: none"> <li>Do not allow spray to contact green stems (except suckers), fruit or foliage.</li> <li>Use a shield or wrap plant when spraying around young trees or vines.</li> <li>Do not graze treated areas.</li> <li>Do not feed cover crops grown in treated areas to livestock.</li> <li>Do not apply when figs, nuts or olives to be harvested are on the ground.</li> <li>For apricots - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For cherries - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For figs - Do not harvest within 13 days after application and do not exceed 5 postemergence directed applications per season.</li> <li>For grapes - treat when sucker growth is no more than 8" long. Late season applications to weeds should be made to avoid contact with desirable foliage.</li> <li>For kiwi fruit - Do not treat more than 3 times per year. Do not harvest within 14 days after application.</li> <li>For mature woody weeds, perennial weeds, late germinating weeds and green suckers, retreatment or spot treatment may be necessary.</li> <li>For nectarines - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> <li>For olives - Do not harvest within 13 days after application and do not exceed 4 postemergence directed applications per season.</li> <li>For peaches - Do not harvest within 14 days after application and do not exceed 3 postemergence directed applications per season.</li> </ul>

continued...



# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>TREES AND VINES</b> Orchards, Vineyards, Windbreak, Shade & Ornamental Trees <i>(continued)</i>  Pummelo Satsuma mandarin Walnuts Other shade and ornamental trees such as arborvitae, ash, elm, fir, oak, pine, etc.						<ul style="list-style-type: none"> <li>For pistachios - Do not exceed two applications after shells split. Do not harvest within 7 days after application.</li> <li>For plums - Do not harvest within 28 days after application and do not exceed 3 postemergence directed applications per season.</li> </ul>
<b>TREES AND VINES</b>  Tank Mixes	5 except for: Apricots 3 Cherries 3 Kiwi Fruit 3 Nectarines 3 Olives 4 Peaches 3 Pistachios 5 (only 2 after shells split) Plums 3	Directed Spray	2.5-4.0 pts.	Ground: 10 gals.	Refer to other tank mix labels	<ul style="list-style-type: none"> <li>Gramoxone Inteon may be tank mixed with registered residual herbicides listed below for combined emerged and residual weed control. Always refer to other herbicide label(s) for respective precautions, limitations, restrictions, dates and directions for use and weeds controlled.</li> <li>Gramoxone Inteon may be tank mixed with the following herbicides: Devrinol®, Goal, Karmex®, Krovar® I Herbicides, Princep, Sinbar, Surflan, Solicam®.</li> </ul>
<b>TYFON</b> (New Hampshire only)	3	Preplant Preemergence	2.5-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Seeding should be done with a minimum of soil disturbance.</li> <li>Weeds and grasses emerging after treatment will not be controlled.</li> <li>Crop plants emerged at time of application will be injured.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<b>VEGETABLES</b> (Seeded or Transplanted) Beans (Lima, Snap) Broccoli Cabbage Cantaloupe Carrots Cauliflower Chayote Fruit Chinese Cabbage Chinese Waxgourd Citron Melon Collards Cucumber Eggplant Endive (Escarole) Gherkin Gourd, Edible Groundcherry Lettuce <i>Momordica</i> spp. Musk Melons Peas Pepino Peppers Pumpkin Squash Sweet Corn Tomatillo Turnips Tomatoes Watermelons	3	Preplant Preemergence	2.0-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>Seedbeds or plantbeds should be formed as far ahead of treatment as possible to permit maximum weed emergence.</li> <li>Applications can be made as a banded or broadcast treatment before, during or after planting but prior to the crop emergence.</li> <li>Use the higher rate for heavier weed infestations.</li> <li>Seeding or transplanting should be done with a minimum amount of soil disturbance.</li> <li>Crop plants emerged at time of application will be killed.</li> <li>Can be used in fallow bed/stale seedbed for weed control alone or tank mixed with Goal. Consult the Goal label for a list of weeds controlled, rates of application and precautions.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>
<b>VEGETABLES</b> Eggplant Tomatoes Peppers	3	Directed Spray	2.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>For control or suppression of emerged weeds between rows after crop establishment.</li> <li>Use precision directed spray application equipment adjusted to prevent spray contact with crop plants. Do not exceed 30 psi nozzle pressure or spray under conditions which may cause excessive drift.</li> <li>Apply when weeds are succulent and weed growth is less than 6".</li> <li>Do not apply more than 3 applications per season.</li> <li>Do not allow animals to graze in treated areas.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>
<b>VEGETABLES</b> Tomatoes	2	After Final Harvest	2.4-3.75 pts.	Ground: 40-120 gals.	—	<ul style="list-style-type: none"> <li>Apply in 40-120 gallons of water per acre.</li> <li>Add NIS containing 75% or more surface active agent at 0.125 v/v (1 pt/100 gals. spray solution).</li> <li>Thorough coverage of the tomato vines is required to ensure maximum herbicide burndown.</li> <li>Use of dirty or muddy water may deactivate Gramoxone Inteon.</li> <li>To help facilitate removal of Sweet Potato Whitefly, burn tomato vines with propane burners as soon as possible after the vines have dried down sufficiently.</li> <li>DO NOT apply more than a total of 1.875 lbs. active ingredient (paraquat) per acre per season.</li> <li>To minimize drift, do not use nozzles or nozzle configurations which produce fine spray droplets (mist).</li> </ul>

## Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
VEGETABLES (California, Washington, Oregon, Idaho only) Lettuce Melon Sugar Beets Tomatoes	2	Broadcast	0.75-1.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For control of volunteer barley in preformed seedbeds.</li> <li>Do not harvest tomatoes within 30 days after application.</li> </ul>
VEGETABLES Rhubarb	2	Dormant	2.5-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Apply during dormant season before buds in crown begin to grow.</li> <li>Do not make more than 2 applications per season.</li> </ul>

### ALFALFA

**Table 2. New Seedlings – Suppression and control of broadleaf weeds and grasses in new alfalfa seedlings grown for hay (California only)**

For Control of:	Rate/Acre	
	For Suppression	For Control
Spikeweed (4 inches tall or less)	8 fl. oz.	16-24 fl. oz.
Volunteer Small Grain (8 inches tall or less)	8-16 fl. oz.	32 fl. oz.
Fiddleneck (6 inches tall or less)	8-16 fl. oz.	32 fl. oz.
Shepherdspurse	16-32 fl. oz.	—
Annual Bluegrass	—	16-32 fl. oz.
Chickweed	—	16-32 fl. oz.
Red Maids (6 inches tall or less)	—	16-32 fl. oz.

Do not use the 8.0 fl. oz. rate unless the alfalfa has at least 3 trifoliate leaves; the 16.0 fl. oz. rate unless the alfalfa has 6 trifoliate leaves; or rates over 16.0 fl. oz. unless there are 9 trifoliate leaves.

### RESIN SOAKING

Pines (Loblolly, Shortleaf, Longleaf, Slash, Virginia, Pond, Pitch, and Spruce Pines)

**Tree Selection** - Select trees to be treated from stands on sites not subject to periods of extreme drought stress as the desiccating effect of Gramoxone Inteon to pines is accentuated during such periods, causing a reduction in the amount of oleoresin deposited in the xylem. Select trees to be treated from vigorous, nonstagnated stands, either natural or planted. In stagnated stands or commercial timber stands, plan treating with Gramoxone Inteon not sooner than three years after a commercial thinning.

**Application Directions** - Apply Gramoxone Inteon diluted in water to a suitable wound in the tree trunk to bring the treatment into contact with the xylem (sapwood).

**Bark Streaks or Cuts:** This type of wound is made using a standard or rotary bark hack or a chainsaw chipping tool employed in naval stores work to remove a single 1-inch wide streak of bark about 1-2 ft. from ground level. The total length should not exceed 1/3 of the tree circumference. Multiple streaks or cuts can result in serious girdling of the trunk and premature death of the tree. A coarse spray (about 1.7-5.0 ml.) Gramoxone Inteon solution (1-5% cation, wt./wt. basis) should be applied to runoff to the exposed xylem, using a low-pressure sprayer. The amount of spray required per cut depends on tree circumference and the length of cut or streak (1/3 of circumference). For a 9-inch diameter tree, 3 ml. of spray will cover the 1-inch wide streak. Using 3 ml. of a 3 or 6% Gramoxone Inteon solution will result in application of 60 or 120 mg. Gramoxone Inteon per streak.

**Time of Treatment:** Resin soaking can occur from treatments made any time of the year; however, cool season treatments under nondrought conditions usually result in less severe pine beetle infestations and longer tree life.

**Interval Between Treatment and Tree Harvest:** The interval between application of Gramoxone Inteon and tree harvest should be a minimum of 6 months and preferably from 12-24 months. Intervals of over 6 months may not be possible under conditions of drought or serious pine beetle attacks, which may make early harvest necessary. The Gramoxone Inteon treatment may encourage beetle attack, or may cause premature death of the tree. Desiccation of the xylem tissue, rather than the desired resin soaking, may occur, and is more likely at higher dosage rates.

**Effect on Stem Growth:** Gramoxone Inteon treatment can result in reduced stem growth during the interval between treatment and tree harvest.

# Gramoxone Inteon™

Dilution Table for Gramoxone Inteon (2.0 lbs. cation per gallon):

Concentration of Cation Desired (Wt./Wt. Basis)	To 1 Gallon of Gramoxone Inteon Add the Following No. Gals. of Water:
0.2%	118.8
0.5%	46.8
1.0%	22.9
2.0%	10.9
3.0%	6.9
4.0%	4.9
5.0%	3.7

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
CONSERVATION RESERVE, FEDERAL SET-ASIDE, CONSERVATION COMPLIANCE PROGRAMS (For use in compliance with the Federal Conservation Reserve Program or Federal set-aside programs).	3	Broadcast	2.5-4.0 pts.	Ground: 10 gals. Air: 5 gals.	—	<ul style="list-style-type: none"> <li>For improved emerged weed control or extended weed control, Gramoxone Inteon may be tank mixed with other herbicides registered for this use. Refer to tank mix herbicide labels for specific directions, limitations, cautions and for a list of weeds controlled.</li> </ul>
NONCROP USES	10	Broadcast or Spot Treatment	2.5-4.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>For use in noncrop areas such as public airports, electric transformer stations, pipeline pumping stations, around commercial buildings, storage yards and other installations, fence lines or similar noncrop areas.</li> <li>Avoid contact with the foliage of ornamentals or desired plants.</li> </ul>
PASTURE RESEEDING For suppression of existing sod and undesirable emerged broadleaf weeds and grasses prior to or at time of planting grasses or forage legumes	3	Broadcast	1.0-2.0 pts.	Ground: 10 gals. Air: 5 gals.	See specific geographic recommendation	<p><b>West of Cascade and Sierra Nevada Mountains</b></p> <ul style="list-style-type: none"> <li>Apply in October through December after first fall rains and after weeds have emerged and sod has started new growth.</li> <li>For best seeding results, apply on moderately to heavily grazed areas.</li> <li>Do not use in areas with heavy sod and weed growth.</li> </ul> <p><b>East of Rocky Mountains</b></p> <ul style="list-style-type: none"> <li>Use the 2.0 pt. rate on vigorous or coarse sod species such as bromegrass.</li> <li>Apply prior to, or at time of seeding grasses or forage legumes.</li> <li>Apply only to grazed or mowed pastures not more than 3" in height at time of treatment.</li> </ul> <p><b>Bermudagrass or Bahiagrass Sod</b></p> <ul style="list-style-type: none"> <li>Apply in late summer or early fall to sod not exceeding 3 inches in height.</li> <li>For control of emerged Little Barley, apply in February or March before the midboot stage of Little Barley.</li> </ul> <p><b>Bermudagrass and Coastal Bermudagrass Pastures</b></p> <ul style="list-style-type: none"> <li>Apply when bermudagrass is dormant.</li> <li>For control of little barley, apply before the mid-boot stage.</li> <li>Do not mow for hay until 40 days after treatment.</li> </ul>
For Control of Endophyte-Fungus-Infected Fescue Forage Legume/Grass Mixture and Other Grass Pastures	2	Broadcast (Split Application)	1.0-2.0 pts. followed by 1.0-2.0 pts.	Ground: 10 gals.	—	<ul style="list-style-type: none"> <li>Use split applications of 10-21 days apart if necessary.</li> <li>Do not exceed 4.0 pts./A total in preparation for reseeding.</li> <li>For spring plantings, the initial application of 1.0-2.0 pts. may be made the previous fall.</li> <li>Apply when fescue is actively growing and no more than 4" high.</li> <li>To reduce the infestation of endophyte-infested grass, do not allow fescue to go to seed starting with the preceding year's crop.</li> </ul>

# Gramoxone Inteon™

Crop	Maximum Number of Applications Per Year	Use Pattern	Gramoxone Inteon Rate Per Acre	Minimum Total Spray Per Acre	Grazing or Preharvest Interval (Days)	Precautions, Restrictions and Comments
<p>*For Prickly Pear Desiccation in Pastures</p> <p>*Not for use in California.</p>	10	Spot Sprays	1.0 fl. oz. per gallon of water	Spray to wet weed foliage		<ul style="list-style-type: none"> <li>• Knapsack, backpack sprayers, pump-up pressure sprayers, hand-guns, hand wands, and other hand-held equipment can be used to direct the spray onto weed foliage for spray to wet applications.</li> <li>• Mix 1.0 fl. oz. of Gramoxone Inteon and 1/3 fl. oz. of a nonionic surfactant per gallon of water.</li> <li>• Spray coverage should be uniform and provide complete cover of all green prickly pear foliage.</li> <li>• Apply in May through September for best desiccation results.</li> <li>• Do not use more than 2.5 pts. of Gramoxone Inteon per acre per year.</li> <li>• Apply only to pastures with no more than 3" of height at time of treatment.</li> <li>• For improved desiccation and perennial control of Prickly pear, tank mix with Grazon P+D Specialty Herbicide at a rate of 1-2 fl. oz. per gallon of water.</li> <li>• Refer to the Grazon P+D Specialty Herbicide label for directions, restrictions, and precautions.</li> </ul>
<p>*For Juniper Species leaf moisture reduction or desiccation prior to Prescribed burning of pastures</p> <p>*Not for use in California.</p>	10	Broadcast	2.0 pts.	Air: 5 gals.		<ul style="list-style-type: none"> <li>• Use only in conjunction with prescribed burning as recommended and monitored by local SCS or University and Extension Range Specialists.</li> <li>• Apply during hot, dry weather conditions (generally July and August).</li> <li>• Use 2% v/v nonionic surfactant in a minimum of 5 gpa spray solution.</li> <li>• Juniper leaf moisture content should be monitored; however, maximum leaf moisture reduction generally occurs 3-4 weeks after Gramoxone Inteon application.</li> <li>• Significant soil moisture and/or wet weather conditions prior to or after application will decrease the potential for Juniper Crown burns.</li> <li>• Cool or humid weather conditions also adversely affect leaf moisture reduction.</li> <li>• Do not graze livestock after application or prior to burning.</li> </ul>
<p>*Native Pastures</p> <p>*Not for use in California.</p>	2	Broadcast	1.5-1.8 pts.	Ground: 10 gals. Air: 5 gals.		<ul style="list-style-type: none"> <li>• Apply Gramoxone Inteon for control of Downy and Japanese Brome.</li> <li>• Apply in spring after 90% node formation of brome species, but before full bloom.</li> <li>• Emerged native perennial grasses will be burned by application, but application after 90% node formation will allow adequate time for native grasses to recover and attain maximum growth in the use season.</li> <li>• Do not apply more than 1.8 pts. Gramoxone Inteon per year.</li> <li>• Apply only to pastures with no more than 3" of height at time of treatment.</li> </ul>

## Gramoxone Inteon™

Conversion Table Gramoxone Inteon to Be Applied			
Ounces	Pints	Lb. a.i.	Acres/Gallon
16.0	1.0	0.25	8.00
24.0	1.5	0.375	6.00
32.0	2.0	0.5	4.00
40.0	2.5	0.625	3.20
48.0	3.0	0.75	2.66
56.0	3.5	0.875	2.28
64.0	4.0	1.00	2.00

### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

#### Pesticide Storage

Store at temperatures above 32°F.

#### Pesticide Disposal

Pesticides wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinse is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

#### Container Disposal

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For Bulk/Mini-Bulk Containers - Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

#### Bulk/Mini-Bulk Refillable Containers

Before refilling, inspect thoroughly for damage, such as cracks, punctures, bulges, dents, abrasions and damaged or worn threads on closure devices. After filling and before transporting, check for leaks. Do not refill or transport damaged or leaking container.

For help with any spill, leak or fire involving this material, call 1-800-888-8372.

**CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!**

AAtrex®, Ambush®, Bicep MAGNUM®, Bicep II MAGNUM®, Bicep Lite II MAGNUM®, Callisto®, Caparol®, Devrinol®, Dual MAGNUM®, Flexstar®, Karate®, Lexar™, Lumax®, Princep®, Reglone®, Solicam®, Zorial®, and the Syngenta logo are trademarks of a Syngenta Group Company

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For non-emergency (e.g., current product information), call  
Syngenta Crop Protection at 1-800-334-9481.

Syngenta Crop Protection, Inc.  
Greensboro, North Carolina 27409  
www.syngenta-us.com

SCP 1217A-L1A 0206

**RESTRICTED USE PESTICIDE**

DUE TO ACUTE TOXICITY

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

**Herbicide**

A Weed, Grass, and Harvest Aid Desiccant/Defoliant Herbicide

Active Ingredient:

Paraquat dichloride (1,1'-dimethyl-4,4'-bipyridinium dichloride) ..... 30.1%

Other Ingredients: ..... 69.9%

Total: ..... 100.0%

Contains 2.0 pounds paraquat cation per gallon as 2.762 pounds salt per gallon.

Contains alerting agent (odor), emetic, dye and Inteon Technology.

EPA Reg. No. 100-1217

EPA Est. 100-TX-001

See directions for use in attached booklet.

**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

- NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
- IF SWALLOWED, TAKE IMMEDIATE ACTION AS PRESCRIBED IN FIRST AID STATEMENT. SYMPTOMS ARE PROLONGED AND PAINFUL.
- DO NOT USE OR STORE IN OR AROUND THE HOME.
- DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
- THE ODOR OF THIS PRODUCT IS FROM THE ALERTING AGENT WHICH HAS BEEN ADDED, NOT FROM PARAQUAT.

Gramoxone Inteon™ and the Syngenta logo are trademarks of a Syngenta Group Company

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Syngenta Crop Protection, Inc.  
Greensboro, NC 27409  
www.syngenta-us.com

SCP 1217A-L1A 0206

**2.5 gallons**  
Net Contents

**KEEP OUT OF REACH  
OF CHILDREN.**

**DANGER /  
PELIGRO  
POISON**



Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

**FIRST AID**

Contains Paraquat, a Bipyridylum Herbicide

If swallowed: **SPEED IS ESSENTIAL.** Immediate medical attention is required. If available, give an adsorbent such as activated charcoal, bentonite or Fuller's Earth. Call a poison control center or doctor immediately for treatment advice. Do not give anything by mouth to an unconscious person.

If inhaled: Move person to fresh air. The odor of this product is from the alerting agent, which has been added, not from the paraquat. If person is not breathing, call 911 or an ambulance. Call a poison control center or doctor for further treatment advice.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. IMMEDIATELY wash with soap and water and rinse for 15-20 minutes. Prolonged contact will cause severe irritation. Contact with irritated skin or a cut or repeated contact with intact skin may result in poisoning. GET MEDICAL ATTENTION. Call a poison control center or doctor for treatment advice.

**NOTE TO PHYSICIAN**

Refer to the booklet "Paraquat Poisoning: A Practical Guide to Diagnosis, First Aid and Hospital Treatment" (<http://www.syngenta.com/pqmedguide/>). Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15ml/kg body weight in children). NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen.

Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration, it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation. Use treatment that is appropriate for chemical burns. Intact skin is an effective barrier to paraquat, however contact with irritated or cut skin or repeated contact with intact skin may result in poisoning.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**HOT LINE NUMBER**

For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call 1-800-888-8372.

**PRECAUTIONARY STATEMENTS****HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

May be fatal if swallowed. Fatal if inhaled. Do not breathe spray mist. Wear a dust mist NIOSH-approved respirator with any N, R, P, or HE filter. Causes substantial but temporary eye injury. Wear protective eyewear (face shield required when mixing/loading). Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing. Avoid contact with skin. **IMPORTANT:** Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nose bleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

**Environmental Hazards**

**Wildlife:** This product is toxic to wildlife. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

**Drift:** Gramoxone Inteon is a contact herbicide that desiccates all green plant tissue. Paraquat dichloride is toxic to nontarget crops and plants if off-target movement occurs. Extreme care must be taken to ensure that off-target drift is minimized to the greatest extent possible. Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas. To avoid drift, do not make aerial applications during periods of thermal inversion. Refer to the local state laws, regulations, guidelines and spray drift information contained in the Directions for Use section for proper application to avoid off-target movement.

**Physical and Chemical Hazards**

This product is mildly corrosive to aluminum and produces hydrogen gas which may form a highly combustible gas mixture. Do not mix or store in containers, spray tanks, nurse tanks, or such systems made of aluminum or having aluminum fittings. This product is compatible with high density polyethylene and rubber lined steel containers.

**STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

**Pesticide Storage**

Store at temperatures above 32°F.

**Pesticide Disposal**

Pesticides wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Disposal**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For help with any spill, leak or fire involving this material, call 1-800-888-8372.

**CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!**

**syngenta**



**FEDERAL EXPRESS**

December 14, 2005

Document Processing Desk (NOTIF)  
Office of Pesticide Programs (H7504C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1801 South Bell Street  
Arlington, VA 22202-4501

Attention: Mr. James A. Tompkins, PM 25

Dear Mr. Tompkins:

**SUBJECT: NOTIFICATION FOR MINOR CHANGES TO GRAMOXONE INTEON  
LABEL  
EPA REG. NO. 100-1217**

Syngenta Crop Protection, Inc. hereby submits Gramoxone Inteon label via Notification per our discussion of 12-5-05. As the highlighted copy of the attached label indicates, the text regarding skin contact "If on skin or clothing" in the "FIRST AID" section has been expanded from:

"Rinse skin immediately with plenty of water for 15-20 minutes."

to:

"IMMEDIATELY wash with soap and water and rinse for 15-20 minutes. Prolonged contact will cause severe irritation. Contact with irritated skin or a cut or repeated contact with intact skin may result in poisoning. GET MEDICAL ATTENTION."

This change is being made in response to California Department of Pesticide Regulations concerns and has occurred on previously USEPA approved labels, i.e. Cyclone Concentrate, 100-1074, label stamped on Aug. 15, 2000.

**Attachments:**

- ◊ Application for Pesticide Registration, EPA Form 8570-1
- ◊ Two copies of the proposed label

Please contact me at (336) 632-6324 if there are any questions regarding this submission.

Kind regards,

A handwritten signature in black ink that reads "Jerry Wells". The signature is fluid and cursive, with the first name "Jerry" and last name "Wells" clearly distinguishable.

Jerry Wells  
Senior Regulatory Product Manager

Enclosures





United States  
Environmental Protection Agency  
Washington, DC 20460

☐ Registration  
☐ Amendment  
☐ Other

OPP Identifier Number

### Application for Pesticide - Section I

1. Company/Product Number 100-1217	2. EPA Product Manager Jim Tompkins	3. Proposed Classification <input type="checkbox"/> None <input checked="" type="checkbox"/> Restricted
4. Company/Product (Name) Gramoxone Inteon	PM# 25	
5. Name and Address of Applicant (include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419  <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(I), my product is similar or identical in composition and labeling to:  EPA Reg. No. _____ Product Name _____	

### Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

Explanation: Use additional page(s) if necessary. (For Section I and Section II.)

Notification - minor changes to first aid statement.

### Section - III

1. Material This Product Will Be Packaged In:		2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
*Certification must be submitted		If "Yes" Unit Packaging wgt. No. per Container	If "Yes" Unit Packaging wgt. No. per container
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container	4. Size(s) Retail Container	5. Location of Label Directions <input type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Other <input type="checkbox"/> Pressure Sensitive <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			

### Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)			
Name Jerry Wells		Title Regulatory Product Manager	Telephone No. (include Area Code) 336-632-6324
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.			6. Date Application Received (Stamped)
2. Signature 		3. Title Regulatory Product Manager	
4. Typed Name Jerry Wells		5. Date 12-14-05	