



Dicamba Discussion 2017-2019

Indiana Pesticide Review Board Meeting

September 26, 2018

ER 0540

Scope of Dicamba Discussion

- Off-target movement primer/review
- What happened in 2017 ?
- What has happened in 2018 ?
- What may happen in 2019?

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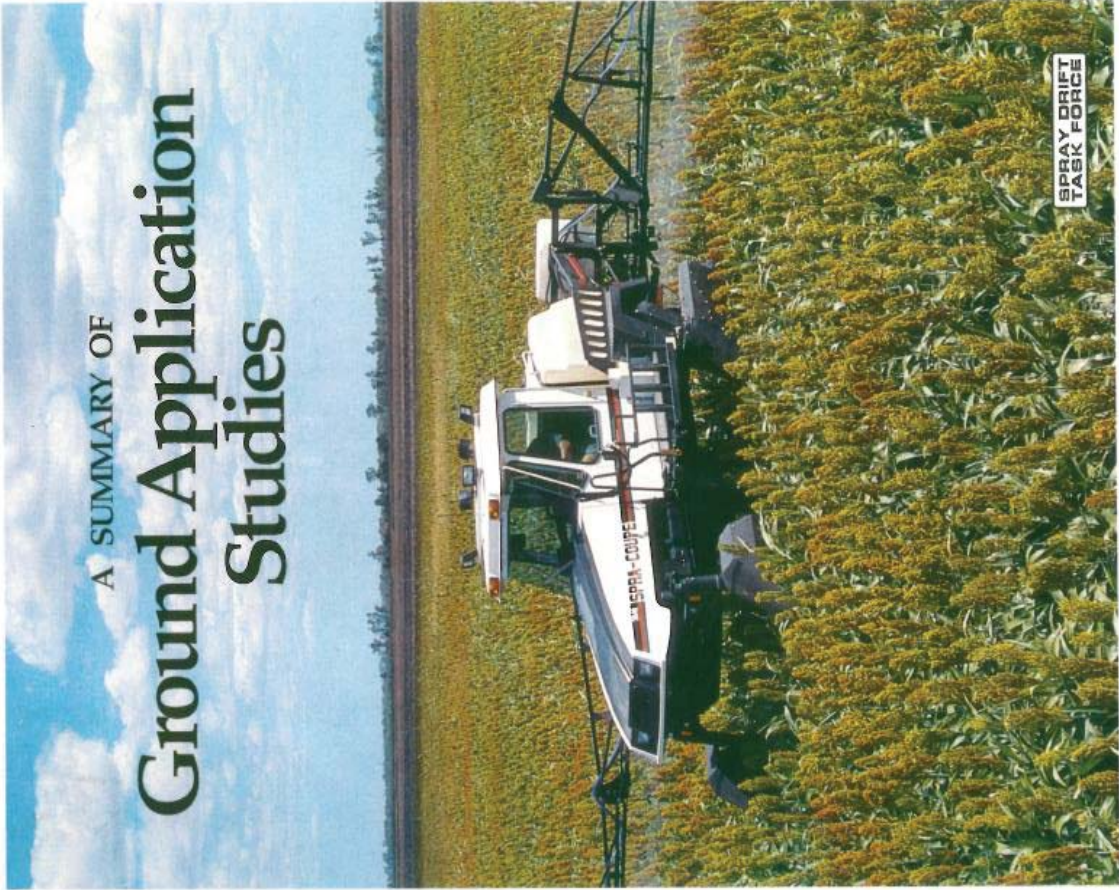
Pesticide Off-Target Movement Review/Primer

- Spray Drift Task Force Report
- EPA PRN 2001-X
- Indiana Drift Rule

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Spray Drift Task Force

- Established in 1990
- Consortium of 38 ag chemical companies
- Generate EPA-required spray drift data for product registration
- Studies designed by university, research, & EPA scientists
- Quantify primary spray drift to:
 - Validate computer drift models
 - Facilitate environmental risk assessments, primarily by EPA

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Studies (ground, air, chemigation) confirmed:

- Droplet size is important & primary drift occurs downwind
- Primary drift (*movement of spray droplets before deposition*) is:
 - A generic physical phenomenon, not a function of different active ingredients
- 20 in. nozzle height & 10 mph crosswind...>99.9% a.i. stays on target
- All drift can not be totally eliminated with current technology
- Studies did not measure volatility or application into an inversion



PRN 2001-X Draft: Spray and Dust Drift Label Statements for Pesticide Products

Related Information

[View information about EPA's drift reduction program](#)

DRAFT PESTICIDE REGISTRATION (PR) NOTICE 2001-X

Notice To: Manufacturers, Producers, Formulators, and Registrants of Pesticide Products

Attention: Persons Responsible for the Registration of Pesticide Products

Subject: Spray and Dust Drift Label Statements for Pesticide Products

This Notice sets forth the U.S. Environmental Protection Agency's (EPA or Agency) guidance for labeling statements for controlling spray drift and dust drift from application sites and for implementing these statements for risk mitigation. The purpose of this new labeling guidance is to provide pesticide registrants, applicators, and other individuals responsible for pesticide applications with improved and more consistent product label statements for controlling pesticide drift in order to be protective of human health and the environment. This Notice also includes EPA's position on drift, a rationale for the label statements, and an implementation plan.

On This Page

- I. Scope And Purpose
- II. Background
- III. EPA'S Position On Pesticide Drift
- IV. Label Statements
- V. What Registrants Should Do
- VI. State Approvals May Be Needed
- VII. For Further Information

I. Scope And Purpose

PR Notice 2001-X

- Draft notice with guidance for drift mitigation label improvement
- Focus on drift within short distance (~1 mile) of application
- Based on the “science of drift” developed by SDTF
- Recognized “de-minimus drift”
- No guidance for movement from application into inversion or volatilization
- Legal use should not cause unreasonable adverse effects on human health and the environment
- Recognition that labels should be clear & enforceable
- Never finalized due to insufficient stakeholder consensus

Indiana Drift Rule

- 357 IAC 1-12...adopted in 2006, after EPA stalled on PRN 2001-X
- May not allow drift from target site in sufficient quantities to cause harm to non-target site...performance standard
- “Drift” does not include volatility after application
- Harm includes documented death, illness, stunting, deformation, discoloration & other detrimental effects...crinkled leaves vs. yield loss

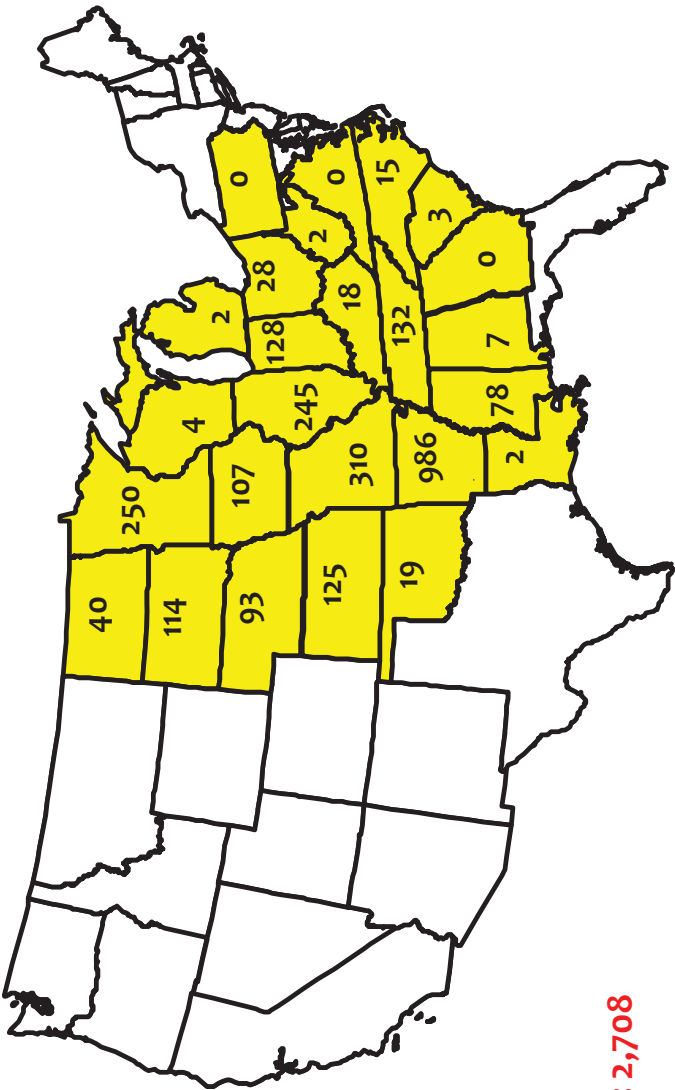
Dicamba

What Happened in 2017?

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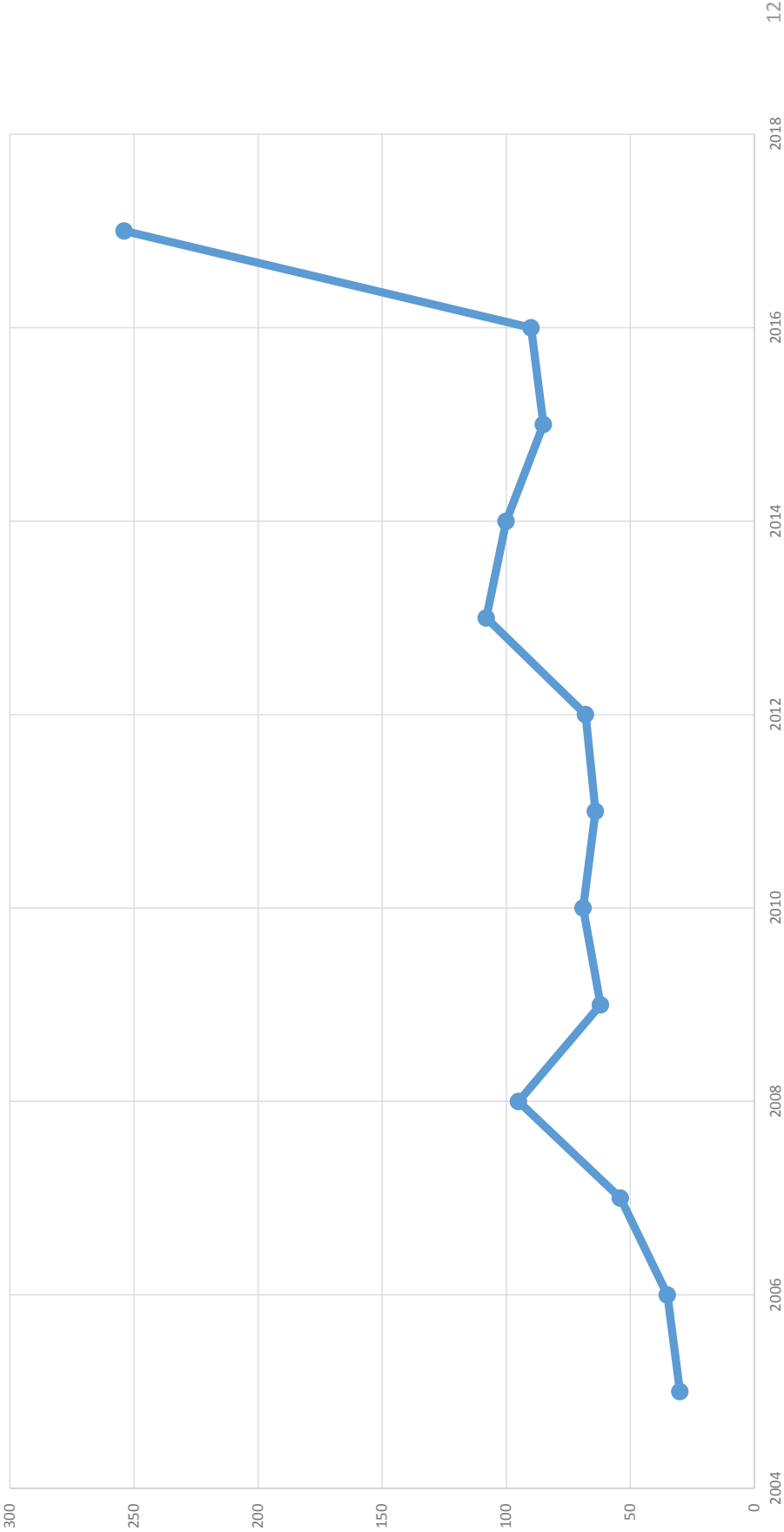
**Official Dicamba-related Injury Investigations as
Reported by State Departments of Agriculture**
(*as of October 15, 2017)



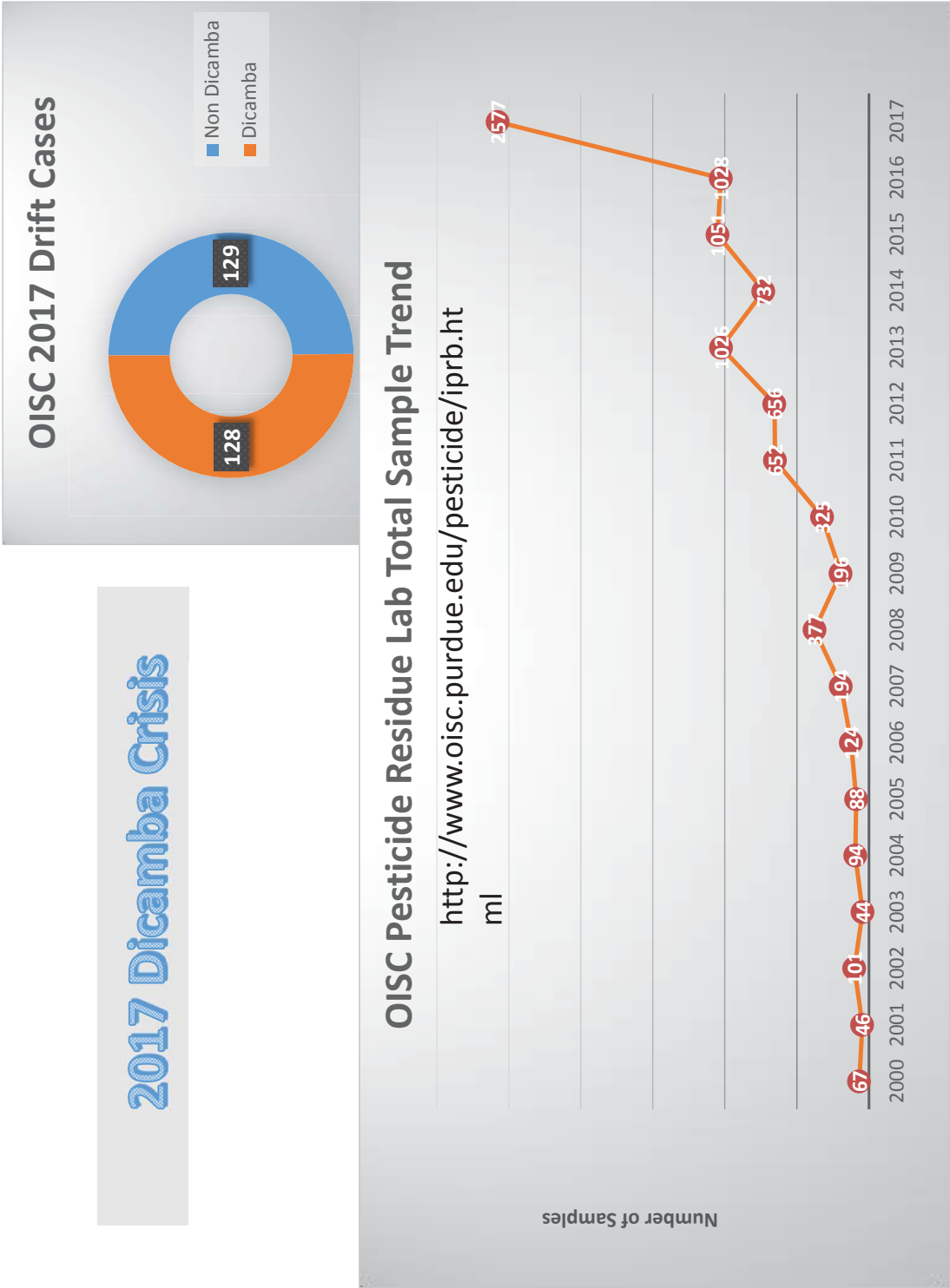
***Total: 2,708**

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OISC received record-setting numbers of drift complaints in 2017 for **ALL** types of applications

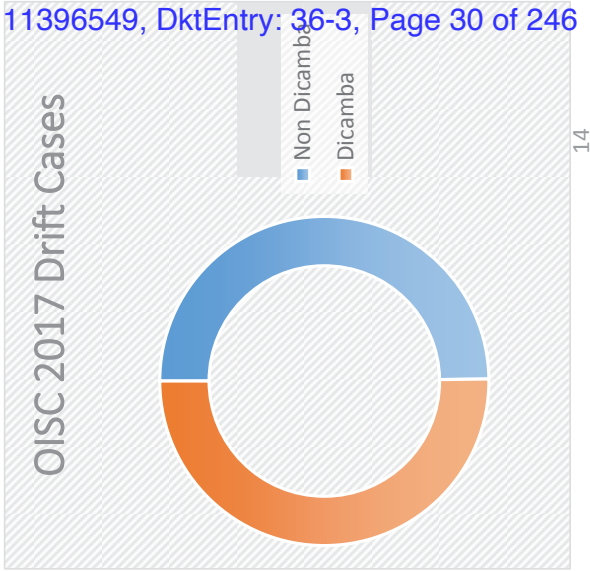


2017 Dicamba Crisis



Drift & Dicamba Data for Indiana

<u>Year</u>	<u>Total Drift</u>	<u>Dicamba</u>	<u>Percent</u>
2013	92	3	3%
2014	83	5	6%
2015	81	8	10%
2016	74	3	4%
2017	287	132	46%



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Details of 132 dicamba investigations for 2017

Applicators involved:

- 23% Commercial applicator
- **62% Private applicator**
- 15% Noncertified applicator

Products applied:

- 45% Engenia
- 7% FeXapan
- 40% Xtendimax
- 8% Other

Target crop/site:

- **92% Soybean**
- 6% Corn
- 1% R.O.W.
- 1% Pasture

Details of 132 dicamba investigations for 2017

Off-Target Exposure Crop/Site

- **92% Non-DT Soybeans**
- 1% Melons
- 1% Tomatoes
- 3% Ornamentals
- 1% Blackberries
- 2% Garden
- 1% Person

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Route of Off-Target Exposure

- 23% Particle drift
- 3% Tank contamination
- 0% Inversion
- 0% Volatilization
- 0% Dust particles
- 0% Runoff
- **74% Undeterminable**

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2017 Dicamba Complaint Violations

- Total violative cases... **93%**
- **Drift... 23%**
- Wind blowing toward adjacent sensitive crops... **46%**
- Wind (or gusts) greater than 15 mph ...**4%**
- Wind less than 3 mph... **8%**
- Did not maintain a 110 ft. buffer ...**2%**
- Did not visit website (registrant or DriftWatch)... **71%**
- Did not survey site... **7%**
- Exceeded 24" boom height ...**1%**
- Complaint withdrawn... **1%**

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What happened after the 2017 use season?

EPA & Manufacturers Agreed to Make Xtendimax, Engenia, & FeXapan Federal RUPs & to Add More Label Restrictions

GROUP 4 HERBICIDE

XTENDIMAX[®]
With **VaporGrip[®]**
Technology



Engenia[®]
Herbicide

Group 4 Herbicide

2018 Label Changes Included:

- RUP classification
- Mandatory dicamba-specific training for all users (*state controlled*)
- Mandatory detailed recordkeeping requirements, including weather
- Prohibit application near downwind sensitive crops
- Clarified mandatory buffer requirements
- Reduced max. wind speed from 15 to 10 mph
- Beefed up tank cleaning requirements



Office of
INDIANA STATE CHEMIST AND SEED COMMISSIONER
Protecting Indiana's Agriculture and Environment - Field, Forage, Pesticide and Seed

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2018
Guidance for Interpreting Dicamba Labeling Terms & Phrases (11 26 17)

OFF-TARGET MOVEMENT

"Do not allow herbicide solution to mist, drip, drift or splash onto desirable vegetation because severe injury or destruction to desirable broadleaf plants could result."

"Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that may be damaged or the crops thereof rendered unfit for sale, use or consumption."

These restrictions would apply to any off-target movement to any desirable vegetation by means of drift, including drift resulting from application during a temperature inversion. It would not apply if it can be determined that off-target movement was from volatility, runoff, or exposed windblown soil particles.

TEMPERATURE INVERSIONS

"Do not apply this product during temperature inversion, as the off-target movement potential is high."

"Do not apply Ligninia when temperature inversions exist at the field level."

"Do not apply this product between sunset and sunrise."

"Apply only during the following period: sunrise until sunset."

Sunrise shall be defined as time of sunrise, and sunset shall be defined as time up to 30 minutes after sunset, as recorded by a reliable weather recording service. Temperature inversions shall be identified by reliably recorded calm or 0-3 mph winds during application.

SENSITIVE/SUSCEPTIBLE CROPS

"Do not apply when wind is blowing in the direction of neighboring sensitive crops."

"Do not apply this product when wind is blowing toward adjacent non-dicamba tolerant crops. This includes non-dicamba tolerant soybeans and cotton."

"Sensitive/susceptible crops include, but are not limited to non-DT soybeans and cotton, cucumber and melons (EPA crop group 9), flowers, fruit trees, grapes, ornamentals including

The label is complex,
 requiring much from the
 user of these products.

Observe OISC's guidance for
 "Interpreting Dicamba Label
 Terms And Phrases."

Guidance was developed
 thru consultation & input
 with EPA & registrants.

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Conclusion of Indiana Mandatory Training:

- Weed resistance is a real and ever-growing issue.
- Rotate herbicide classes when possible as a way of reducing resistance.
- Dicamba products are important tools in managing resistant weeds such as marestail, Palmer, and water hemp in dicamba-tolerant crops such as soybeans.
- The label is written to put all of the liability (both regulatory and civil) on the applicator. Follow the label.
- There are alternatives to dicamba products in soybeans in many cases.

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Engenia, FeXapan, and Xtendimax Federally Registered Until November 2018

EPA will decide whether the products should continue to be registered. It appears this will depend partially on the number of off-target incidents in 2018.

This is our chance to get it right for 2018 or growers may lose these new-use dicamba products. Dicamba-tolerant seed may be available, but these herbicides may not.

3/27/2018

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Dicamba

What Happened in 2018?

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Case: 19-70115, 08/13/2019, ID: 11396549, DktEntry: 36-3, Page 39 of 246

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Recent Drift & Dicamba Data for Indiana

<u>Year</u>	<u>Total Drift</u>	<u>Dicamba</u>	<u>Percent</u>
2013	92	3	3%
2014	83	5	6%
2015	81	8	10%
2016	74	3	4%
2017	287	132	46%
2018	264	138	52%

Trending data impacts from soybean/dicamba launch

- Before launch:
 - OISC investigated an average 89 total drift complaints per year
 - Dicamba was target on average 5% of time
- Since launch (2017 & 2018*):
 - Averaging 276 total drift complaints (300% increase)
 - Dicamba has been target on average 49% of time (980% increase)

3/27/2018

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Details of dicamba investigations for 2018

Applicators involved:

- 39% Commercial applicator
- 61% Private applicator
- 0% Noncertified applicator

Products applied:

- 66% Engenia
- 3% FeXapan
- 19% Xtendimax
- 11% Other

Target crop/site:

- 93% Soybean
- 6% Corn
- 1% Other

Details of dicamba investigations for 2018

Off-Target Exposure Crop/Site Pre or Post-Emergent Use

- 92% Non-DT Soybeans
- 0% Melons
- 0% Tomatoes
- 4% Ornamentals & Trees
- 0% Grapes
- 1% Garden
- 3% Other
- 3% Pre-emergent
- 97% Post-emergent

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ER 0566

2018 Dicamba Complaint Violations

- Total violative cases... ??%
- **Drift... ??%**
- Wind blowing toward adjacent sensitive crops... ??%
- Wind (or gusts) greater than 15 mph ... ??%
- Wind less than 3 mph... ??%
- Did not maintain a 110 ft. buffer ... ??%
- Did not visit website (registrant or DriftWatch)... ??%
- Did not survey site... ??%
- Exceeded 24" boom height ... ??%
- Complaint withdrawn... ??%

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Potential 2018 Case Resolution #1

Based on the evidence collected in this investigation, it has been determined that you failed to comply with both the off-target drift restrictions and the drift management restrictions on the label for the herbicide FILL IN THE BLANK.

(documented drift + documented drift management violations)

Potential 2018 Case Resolution # 2

Based on the evidence collected in this investigation, it has been determined that you failed to comply with the off-target drift restrictions on the label for the herbicide FILL IN THE BLANK.

(documented drift, but no documented drift management violations)

Potential 2018 Case Resolution #3

Based on the evidence collected in this investigation, it has been determined that you failed to comply with the drift management restrictions on the label for the herbicide FILL IN THE BLANK. It should also be noted that OISC was not able to determine whether the herbicide moved off-target as the result of drift, application into an inversion, or volatilization at some point after the application, and was not able to clearly identify the source of the off-target movement.

(no documented drift, but documented drift management violations)

Potential 2018 Case Resolution # 4

Based on the evidence collected in this investigation, no violations of the Indiana pesticide laws or regulations were documented. Although off-target movement of the dicamba herbicide was documented, OISC was not able to determine whether the herbicide moved off-target as the result of drift, application into an inversion, or volatilization at some point after the application, and was not able to clearly identify the source of the off-target movement.

(no documented drift + no documented drift management violations)

3/27/2018

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What May Happen in 2019 ?

- Current EPA registrations set to expire in November, 2018
- EPA options for 2019?
 - Not renew the registrations (*has its own set of problems*)
 - Renew with the same labels (*2018 was as good as it gets, get used to it*)
 - Renew with fewer label restrictions (*the Wild West just got wilder*)
 - Renew with additional label restrictions (*somehow put a dent in complaint #s*)

How Might Indiana Respond if EPA Doesn't Fix It?

- Develop state use restrictions?
 - *It takes 1+ years to develop state rules, assuming there is support*
 - *We have had this discussion many times previously*
- Deny state registration based on misbranding?
 - *The label does not contain use directions necessary, and if complied with, adequate for protection of the public.*
- Modify complaint response procedures?
 - What are the objectives of OISC dicamba investigations?
 - We can document violations, but not always source & cause of exposure

Comments or Questions ?

Thank you !

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ER 0574