



International Research and Development Corporation

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SPONSOR: The Monsanto Company, IR-79-014

TEST ARTICLE: Technical Glyphosate

SUBJECT: Dominant Lethal Study in Mice

DATE OF SUBMISSION: April 16, 1980

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I. QUALITY ASSURANCE STATEMENT

Study Title: Dominant Lethal Study in Mice

Test Article: Technical Glyphosate

The conduct of this study has been subjected to periodic inspections. The dates of inspection and the dates that findings were reported to management are listed in Appendix I.

This report has been reviewed by the International Research and Development Corporation Quality Assurance Department. To the best of our knowledge, the report accurately describes the methods and accurately reflects the raw data.

Approved and
Submitted By:

Director of Quality Assurance

3/8/80
Date

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II. SYNOPSIS

A dominant lethal assay was performed to evaluate the mutagenic potential of Glyphosate in mice. Fifty sexually mature Charles River CD®-1 mice were randomly divided into three treatment groups (200, 800, and 2000 mg/kg Glyphosate), a positive control group (Cytoxan®-240 mg/kg, and a negative (vehicle) control group. These mice were dosed only on the first day of the study by the oral route, except for the positive control group, which was dosed intraperitoneally. The males were then mated sequentially with sexually mature virgin females for eight weeks so that each male was mated with a total of 16 females. Thirteen days after mid-week of their presumptive mating, the females were sacrificed and the uteri examined for fetal deaths.

No treatment-related effects were observed in regard to general appearance and behavior or male body weights throughout the entire course of the study. Cytoxan® produced a dominant lethal effect in the positive control group as evidenced by a proportionate increase in early fetal deaths. No mutagenic potential of the test article Glyphosate was demonstrated in any of the treated groups up to 2000 mg/kg.

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III. INTRODUCTION

A. OBJECTIVE

The objective of this study was to evaluate the mutagenic potential of the test article by dominant lethal assay in mice.

B. TEST ARTICLE

The test article was received from The Monsanto Company, St. Louis, Missouri, on February 13, 1979, as indicated below:

<u>Label</u>	<u>Description</u>
1 x 9 lbs. Technical Glyphosate	white powder
98.7% Assay	
Lot XHJ-64	

The positive control article Cytoxan®, was purchased from the Prescription Center, Kalamazoo, Michigan, on May 11, 1979, as indicated below:

<u>Label</u>	<u>Description</u>
Cytoxan® (Cyclophosphamide) For injection Store at temperatures between 2° and 32° C. (36° and 90° F) 200 mg Use by 8/80	white powder in glass vials

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IV. METHODS AND PROCEDURES

A. EXPERIMENTAL DESIGN

Fifty sexually mature male CD®-1 mice (The Charles River Breeding Laboratories, Portage, Michigan) were used to evaluate the mutagenic potential of Technical Glyphosate by dominant lethal assay in this study. These mice were approximately 90 days old at the time of test article administration and had been acclimated in this laboratory for a minimum of 10 days. Eight hundred sexually mature, untreated virgin female mice of the same source and strain were used for mating (160 per treatment group). These mice were individually housed, except during mating, in suspended wire-mesh cages and maintained in a temperature-, humidity-, and light controlled room. Purina® Certified Rodent Chow® 5002 and tap water were available ad libitum.

Test article administration took place on June 4, 1979 and the last female was sacrificed on August 9, 1979.

B. ORGANIZATION OF TEST GROUPS AND TEST ARTICLE ADMINISTRATION

Following a detailed observation, the male mice were properly identified by ear punch after random assignment by a computer-generated program into the following groups:

<u>Group</u>	<u>Number of Males</u>	<u>Test Article</u>	<u>Dosage Level</u>
I	10	Negative Control	0.5% Methocel®
II	10	Positive Control	Cytoxan® (240 mg/kg)
III	10	Glyphosate	200 mg/kg
IV	10	Glyphosate	800 mg/kg
V	10	Glyphosate	2,000 mg/kg

The male mice were dosed only on the first day of the study by the oral route except for the positive control group, which was by intraperitoneal injection. Female mice received no treatment.

Glyphosate was administered as a suspension in aqueous 0.5% Methocel® at a constant volume of 10 ml/kg.

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The test article was suspended in 0.5% Methocel® by use of a tissue homogenizer. The negative control group received the vehicle, 0.5% Methocel®, only on a comparable regimen at a constant volume of 10 ml/kg. The positive control group received Cytoxan® dissolved in sterile water for injection at a constant volume of 12 ml/kg.

C. MATING

Immediately following treatment, each male was cohabitated with two virgin females of the same strain and source for seven consecutive days. Female mice were properly identified by ear punch before being mated. After seven days the mice were separated. Each male was then mated with two new females for a second week, and the original females were returned to individual cages. Females continued to be replaced in this manner for eight weeks so that each male was mated with a total of 16 females.

D. GENERAL OBSERVATIONS

All mice were observed daily for mortality and overt changes in appearance and behavior. All males were given a detailed observation to determine if any signs of clinical toxicity were present and individually weighed prior to test article administration and weekly thereafter for 9 weeks. Male mice were sacrificed and discarded on the last day of mating. All mice not surviving to the scheduled sacrifice were necropsied in an attempt to determine the cause of death.

E. UTERINE EXAMINATION OBSERVATIONS

Thirteen days after mid-week of their caging and presumptive mating, each female was sacrificed by carbon dioxide inhalation and the uterus and ovaries exposed by an abdominal incision. The number and location of visible and nonvisible fetuses, early and late resorptions, total implantations, and corpora lutea per dam were recorded. The thoracic and abdominal cavities and organs of the dams were examined for grossly evident morphological changes and the carcasses discarded.

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F. STATISTICAL ANALYSES

All statistical analyses compared the treatment groups (test article groups and the positive control Cytoxan® group) with the vehicle control group, with the level of significance at $p < 0.05$.

Fetal deaths per dam and postimplantation loss were compared by the Mann-Whitney U-test as described by Siegel¹ and Weil² to judge significance of differences. The number of dams with fetal deaths were compared using the Chi-square test criterion with Yates' correction for 2 x 2 contingency tables and/or Fisher's exact probability test as described by Siegel¹ to judge significance of difference. The mean number of live fetuses and corpora lutea were compared by analysis of variance (one-way classification) Bartlett's test for homogeneity of variances and the appropriate t-test (for equal or unequal variances) as described by Steel and Torrie³ using Dunnett's⁴ multiple comparison tables to judge significance of differences.

G. PROTOCOL AND PROTOCOL ADDENDA

Copies of the original protocol and all protocol addenda are presented in Appendix II. This study was conducted in accordance with these guidelines.

H. DATA RETENTION

All preservable specimens, raw data and copies of the final report are retained in the International Research and Development Corporation Archives in Mattawan, Michigan.

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V. RESULTS

A. GENERAL OBSERVATIONS

Yellow staining of the anogenital region was observed in four out of ten males in the positive control Cytoxan® group during various weeks of the study. Incidental findings, including alopecia, matting of the haircoat, and enlargement of the genital areas were also noted randomly throughout various weeks of the study in males in the positive control and all treatment groups. However, due to the random occurrence of these findings and small number of total animals affected, none of these observations seem to be treatment related.

Four unscheduled deaths occurred during the course of the study: one male in the 2000 mg/kg Glyphosate group during study week 6; one female mated with a 2000 mg/kg male during study week 2; a second female mated with a 200 mg/kg male during study week 3; and a third female mated with a 800 mg/kg male during study week 5. The cause of death for these animals could not be determined at necropsy.

A summary of group mean male body weights are presented in Table 1.

Individual and group mean male body weights for the nine weeks of the study are presented in Table 2. No biologically meaningful differences in body weights in any of the treatment groups were observed when compared to the vehicle control group over the entire course of the study.

B. UTERINE EXAMINATION OBSERVATIONS

A summary of group mean maternal observations at uterine examination is presented in Table 3 and individual data in Table 4.

The principle criterion for determining the mutagenic effect in the dominant lethal assay is the comparison of the number of early fetal deaths in the treated and control groups. The number of fetal deaths was examined on a weekly, and on a combination (consecutive weeks) basis for trend analysis by individual males. The data for proportion of fetal deaths was then statistically analyzed. A statistically significant decrease in the number of viable fetuses and an increase in

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the proportion of early fetal deaths, as indicated by a statistically significant increase in the mean number of early resorptions and postimplantation loss, was observed in the positive control Cytoxan® group during the first three weeks of mating when compared to the vehicle control group. These results indicated a dominant lethal effect and an effect at the postmeiotic stage of spermatogenesis. These results are similar to those of Epstein et al.⁵, for a single injection of 240 mg/kg Cytoxan® during weeks 2 and 3 of mating. A slight, though statistically significant, decrease in the mean number of viable fetuses was also observed in the 800 mg/kg Glyphosate dosage group during week 1 of mating and in the 2000 mg/kg Glyphosate dosage group during mating week 3. However, since no increase in early fetal deaths accompanied these decreases, no mutagenic potential can be attributed to the test article at these dose levels. No other statistically significant or biologically meaningful effects were seen in any of the Glyphosate treated groups when compared to the vehicle control group.

The lower mean number of total implantations observed during the first three weeks of mating in the Cytoxan® treated group may be attributed to a decreased ovulation rate, as seen by a lower number of corpora lutea during these weeks, with a statistically significant decrease as compared to control values reported at mating weeks 2 and 3.

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VI. DISCUSSION AND CONCLUSIONS

The Cytosan®-treated positive control group exhibited a dominant lethal effect, as evidenced by an increase in the proportion of early fetal deaths in this group, when compared to the vehicle control group during the first three weeks of mating. No mutagenic potential was seen in any of the Glyphosate-treated groups up to 2000 mg/kg when evaluated by dominant lethal assay in this study.

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Technical Glyphosate:

TABLE 1. Dominate Lethal Study in Mice

Week of Study	Summary of Group Mean Male Body Weights											
	0 mg/kg (Vehicle Control)			240 mg/kg (Positive Control)			200 mg/kg			2000 mg/kg		
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
1	41	+2.3	39	+1.6	41	+1.8	40	+2.3	39	+2.2	39	+2.2
2	39	+2.2	36	+1.9	40	+1.5	38	+2.3	39	+2.2	39	+2.2
3	40	+2.5	38	+1.6	41	+1.2	39	+2.3	39	+1.8	39	+1.8
4	39	+2.2	37	+2.3	39	+1.9	38	+2.1	39	+1.7	39	+1.7
5	39	+1.7	38	+2.1	41	+1.1	38	+1.6	39	+2.2	39	+2.2
6	39	+1.8	36	+2.1	40	+1.1	38	+2.5	38	+2.4	38	+2.4
7	39	+1.9	37	+2.3	40	+1.3	38	+2.6	38	+2.1	38	+2.1
8	39	+1.8	35	+3.3	40	+1.4	38	+2.9	37	+2.4	38	+2.4
9	39	+2.4	37	+2.1	40	+1.4	38	+2.3	38	+2.4	38	+2.4

S. Standard deviation

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Technical Glyphosate: Dominant Lethal Study in Mice

TABLE 2. Individual Body Weights, Grams

Dosage Level, Male Number	Week 1	2	3	4	5	6	7	8	9
0 mg/kg (Vehicle Control):									
49872	43	42	44	43	42	42	42	42	43
49873	43	39	41	40	40	40	40	40	39
49874	43	41	44	41	41	41	42	42	42
49875	37	35	37	36	37	36	36	37	36
49876	42	40	41	38	40	39	40	40	39
49877	40	38	39	38	40	39	39	39	38
49878	38	37	38	38	38	38	39	39	35
49879	40	38	40	38	37	37	37	37	39
49880	42	40	40	39	40	39	39	39	38
49881	38	36	37	36	38	38	38	38	39
Mean	41	39	40	39	39	39	39	39	39
S.D.	2.3	2.2	2.5	2.2	1.7	1.8	1.9	1.8	2.4

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Cytosan:

Dominant Lethal Study in Mice

TABLE 2. Cont.

Individual Body Weights, Grams

Dosage Level, Male Number	Week of Study	1	2	3	4	5	6	7	8	9
<u>240 mg/kg (Positive Control):</u>										
49882	39	35	37	36	35	35	36	36	30	37
49883	41	38	40	37	38	38	36	36	39	39
49884	40	37	38	37	36	36	34	34	33	35
49885	37	33	36	34	34	33	33	33	32	34
49886	40	34	39	39	40	38	39	38	39	39
49887	40	39	41	42	41	40	40	40	40	40
49888	39	35	38	39	40	38	39	39	37	38
49889	40	38	39	37	39	36	38	37	37	40
49890	38	36	38	35	37	35	36	35	36	36
49891	36	35	36	36	37	35	35	35	33	36
Mean	39	36	38	37	38	36	37	35	35	37
S.D.	1.6	1.6	1.9	2.1	2.1	2.3	3.3	2.1	2.3	2.1

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Technical Glyphosate:

Dominant Lethal Study in Mice

TABLE 2. Cont.

Individual Body Weights, Grams

Dosage Level, Male Number	Week of Study							
	1	2	3	4	5	6	7	8
<u>200 mg/kg:</u>								
49892	41	41	41	40	39	40	39	40
49893	39	39	38	38	38	39	38	39
49894	40	41	40	41	39	40	40	40
49895	42	41	41	42	41	42	41	43
49896	40	40	40	39	38	38	38	39
49897	41	41	37	41	41	41	41	41
jblb1	mb	mb	mb	mb	mb	mb	mb	mb
49899	40	42	42	42	42	42	41	42
49900	39	39	40	38	41	40	40	39
49901	45	43	43	42	41	40	41	41
Mean	41	40	41	39	41	40	40	40
S.D.	1.8	1.5	1.7	1.9	1.1	1.1	1.3	1.4
<u>800 mg/kg:</u>								
49902	42	40	41	40	40	40	42	39
49903	41	40	40	38	39	38	37	38
49904	42	41	41	40	40	40	41	39
49905	35	36	34	35	35	34	34	35
49906	39	34	37	39	37	38	38	39
49907	39	36	37	36	36	35	36	36
49908	41	40	40	38	37	38	38	38
49909	41	40	41	42	42	42	43	43
49910	37	37	39	38	37	37	37	37
49911	38	38	38	36	36	36	36	36
Mean	40	38	39	38	38	38	38	38
S.D.	2.3	2.3	2.3	2.1	1.6	2.5	2.6	2.3

S.D. - Standard deviation

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Technical Glyphosate:**Dominant Lethal Study in Mice****TABLE 2. Cont.****Individual Body Weights, Grams**

Dosage Level, Male Number	Week of Study							
	1	2	3	4	5	6	7	8
2000 mg/kg:								
49912	36	36	36	36	35	35	36	34
49913	41	41	41	42	43	42	41	42
49914	39	39	40	39	39	39	38	41
49915	36	37	36	35	35	35	33	35
49916	37	37	38	38	37	38	36	38
49917	38	39	40	39	39	38	37	38
49918	39	39	39	38	37	37	37	38
49919	39	39	39	39	38	39	39	40
49920	43	42	40	41	Died			
49921	37	38	39	39	38	40	38	39
Mean	39	39	39	39	38	38	37	38
S.D.	2.2	2.2	1.8	1.7	2.2	2.4	2.1	2.4

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Technical Glyphosate**Breeding Lethal Study In Mice****TABLE 3.** Summary of Group Mean Maternal Observations at Uterine Eversion

Dosage Level	Number Offspring Mongeavid	Puppies		Absorption		Post Implan- tation Loss		Total		Corpora Litorea Mean S.D.
		Number Viable Mean S.D.	Nonviable Mean S.D.	Late Mean S.D.	Early Mean S.D.	Mean S.D.	Total Mean S.D.	Mean S.D.	Total Mean S.D.	
Matting Week 1										
0 mg/kg; (Vehicle Control);	17	11.6	1.30	0.0	0.0	0.0	0.0	0.6	0.93	12.5
240 mg/kg; (Positive Control);	15	4.1**	3.77	0.0	0.00	0.1	0.35	4.9**	2.12	9.1
260 mg/kg;	15	10.5	3.58	0.0	0.00	0.1	0.35	0.7	1.34	0.8
800 mg/kg;	15	10.3*	1.83	0.0	0.00	0.3	0.70	0.8	1.52	11.3
1000 mg/kg;	17	11.6	2.31	0.0	0.00	0.1	0.19	0.4	0.61	1.20
Matting Week 2										
0 mg/kg; (Vehicle Control);	17	11.6	3.35	0.0	0.00	0.2	0.53	0.9	2.03	1.1
240 mg/kg; (Positive Control);	16	5	3.38*	3.16	0.0	0.0	0.00	4.1**	1.89	7.4
260 mg/kg;	16	4	11.4	2.31	0.0	0.00	0.4	0.75	1.0	1.61
800 mg/kg;	18	2	10.1	3.16	0.0	0.00	0.8	2.81	0.7	1.5
1000 mg/kg;	18	2	12.1	1.69	0.0	0.00	0.2	0.44	0.8	1.5
Matting Week 3										
0 mg/kg; (Vehicle Control);	14	6	12.0	1.30	0.0	0.00	0.1	0.21	0.5	0.76
240 mg/kg; (Positive Control);	16	4	4.8**	3.17	0.0	0.00	0.6	2.00	4.4**	3.18
260 mg/kg;	18	2	12.0	2.42	0.0	0.00	0.1	0.24	1.3	1.53
800 mg/kg;	16	2	11.4	1.15	0.0	0.00	0.1	0.76	0.8	0.6
1000 mg/kg;	17	3	10.3*	2.95	0.0	0.00	0.8	3.15	0.6	1.40
Matting Week 4										
0 mg/kg; (Vehicle Control);	19	1	10.4	3.76	0.0	0.00	0.9	3.11	0.6	3.77
240 mg/kg; (Positive Control);	17	7	10.9	2.87	0.0	0.00	0.2	0.60	1.5	2.07
260 mg/kg;	17	3	10.0	3.24	0.0	0.00	0.2	0.39	0.6	1.66
800 mg/kg;	17	0	11.3	3.10	0.0	0.00	0.0	0.00	1.2	1.67
1000 mg/kg;	16	6	9.9	4.66	0.0	0.00	0.0	0.00	0.9	0.86

*Significantly different from control group p<0.05.
 S.D. = Standard deviation
 **Significantly different from control group p<0.01.

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Technical Glyphosate:

Dominant Lethal Study in Mice

TABLE 3. Cont.

Summary of Group Mean Maternal Observations at Uterine Examination

Dosage Level	Number Grouped	Number Nongravid	Fetusess		Resorptions		Post Implan- tation Loss		Total Implantations		Corporate Index Mean S.D.
			Visible Mean S.D.	Nonvisible Mean S.D.	Late Mean S.D.	Early Mean S.D.	Mean S.D.	Mean S.D.	Mean S.D.	Mean S.D.	
Matting Week 5											
0 mg/kg. (Vehicle Control):	20	0	11.3	3.27	0.0	0.00	0.8	1.21	0.4	0.81	1.2
240 mg/kg. (Positive Control):	12	6	11.7	2.06	0.0	0.00	0.1	0.29	0.5	0.52	0.6
200 mg/kg.:	17	3	10.8	1.95	0.0	0.03	0.3	0.59	0.5	0.72	0.6
800 mg/kg.:	18	2	10.4	4.09	0.0	0.00	0.1	0.33	1.5	3.39	1.6
2000 mg/kg.:	18	2	10.4	2.94	0.0	0.00	0.4	0.76	0.9	1.28	1.3
Matting Week 6											
0 mg/kg. (Vehicle Control):	18	2	11.8	2.43	0.0	0.00	0.2	0.55	0.8	1.40	1.0
240 mg/kg. (Positive Control):	14	6	11.6	1.87	0.0	0.00	0.1	0.61	1.2	2.01	1.5
200 mg/kg.:	19	1	12.6	1.42	0.0	0.00	0.2	0.37	0.6	0.77	0.7
800 mg/kg.:	17	3	11.4	2.09	0.0	0.00	0.1	0.33	0.6	0.79	0.8
2000 mg/kg.:	19	3	11.3	3.06	0.0	0.00	0.1	0.26	0.9	1.22	1.0
Matting Week 7											
0 mg/kg. (Vehicle Control):	19	1	11.8	1.84	0.0	0.00	0.2	0.56	1.1	1.41	1.4
240 mg/kg. (Positive Control):	12	6	10.3	3.06	0.0	0.00	0.1	0.39	1.0	1.21	1.2
200 mg/kg.:	19	1	11.4	2.76	0.0	0.00	0.1	0.23	0.6	0.90	0.6
800 mg/kg.:	18	2	11.1	3.03	0.0	0.00	0.1	0.13	0.4	0.61	0.7
2000 mg/kg.:	15	3	12.3	1.96	0.0	0.00	0.3	0.59	0.5	0.64	0.7
Matting Week 8											
0 mg/kg. (Vehicle Control):	18	2	11.4	2.20	0.0	0.00	0.1	0.31	0.3	0.99	0.6
240 mg/kg. (Positive Control):	14	6	11.4	3.08	0.0	0.00	0.5	1.81	0.7	1.59	1.7
200 mg/kg.:	18	2	10.7	4.25	0.0	0.00	1.3	3.56	0.9	1.13	2.2
800 mg/kg.:	20	0	10.4	2.94	0.0	0.00	0.1	0.44	0.6	0.76	0.6
2000 mg/kg.:	16	2	10.3	2.91	0.0	0.00	0.6	1.26	1.1	1.53	1.5

Values from the treated groups specified to be tested in the report did not differ significantly from the control group.

P<0.05.

S.D. = Standard deviation

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Technical Glyphosate:

Dominant Lethal Study In Mice

TABLE 4.

Individual and Group Mean Maternal Observations at Iterative Examination

Dose Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Rating Week 1				Postimplan- tation Loss No. %	Total Implantations No. %	Corporate United No.			
			Pertuses		Reorptions							
			Viable No. %	Nonviable No. %	Late No. %	Early No. %						
0 mg/kg (Vehicle Control):												
49872	49922	6/21/79	12 100.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	17	17		
	49973	6/21/79	13 100.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	13	46		
49971	49973	6/21/79	12 97.3	0 0.0	0 0.0	1 7.7	1 7.7	1 7.7	13	13		
	49974	6/21/79	13 100.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	15	16		
49974	49924	6/21/79	12 100.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	12	12		
	49975	6/21/79	Monteavid	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0				
	49975	6/21/79	12 97.3	0 0.0	0 0.0	1 7.7	1 7.7	1 7.7	13	16		
49976	49976	6/21/79	10 83.3	0 0.0	0 0.0	2 16.7	2 16.7	2 16.7	12	12		
	49976	49926	6/21/79	12 100.0	0 0.0	0 0.0	0 0.0	0 0.0	12	13		
	49977	6/21/79	11 91.7	0 0.0	0 0.0	1 8.3	1 8.3	1 8.3	12	12		
	49977	49921	6/21/79	13 86.7	0 0.0	1 13.3	1 13.3	1 13.3	15	16		
	49977	6/21/79	10 90.9	0 0.0	0 0.0	1 9.1	1 9.1	1 9.1	11	11		
	49978	49978	6/21/79	13 100.0	0 0.0	0 0.0	0 0.0	0 0.0	10	10		
	49978	49928	6/21/79	10 100.0	0 0.0	0 0.0	0 0.0	0 0.0	12	12		
	49979	49979	6/21/79	12 100.0	0 0.0	0 0.0	0 0.0	0 0.0	12	12		
	49979	49929	6/21/79	Monteavid	0 0.0	0 0.0	0 0.0	0 0.0				
	49980	49980	6/21/79	10 76.9	0 0.0	3 22.1	1 22.1	1 22.1	10	10		
	49980	49930	6/21/79	11 100.0	0 0.0	0 0.0	0 0.0	0 0.0	11	11		
	49981	49981	6/21/79	13 100.0	0 0.0	0 0.0	0 0.0	0 0.0	13	13		
	49981	49931	6/21/79	12 100.0	0 0.0	0 0.0	0 0.0	0 0.0	12	12		
	49982	49982	6/21/79	-	261 -	0 0.0	11 -	11 -	220	220		
					11.0 -	0.0	0.6 -	0.6 -	12.5	12.5		
					1.36 -	0.00	0.93 -	0.93 -	1.28	1.28		
Total	-	-	-	-	-	-	-	-				
Mean	-	-	-	-	-	-	-	-				
S.D.	-	-	-	-	-	-	-	-				

Not applicable

S.D. - Standard deviation

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Technical Glyphosate:

TABLE A. Cont.

Dominant Lethal Study in Mice

Individual and Group Mean Maternal Observations at Uterine Examination

Dose Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Hectol Week 2			Resorption No.	Postimplan- tation Loss No.	Total Implantations No.	Corpora Lutea No.				
			Puppies		Late No.								
			Viable No.	Nonviable No.									
0 mg/kg (Vehicle Control):													
49872	50024	6/28/79	13 100.0	0 0.0		0 0.0	0 0.0	0 0.0	14 14				
49873	50075	6/28/79	9 100.0	0 0.0		0 0.0	0 0.0	0 0.0	10 9				
49874	50025	6/28/79	14 100.0	0 0.0		0 0.0	0 0.0	0 0.0	15 15				
49874	50026	6/28/79	14 100.0	0 0.0		0 0.0	0 0.0	0 0.0	14 14				
49875	50077	6/28/79	8 80.0	0 0.0	1 10.0	1 10.0	2 20.0	2 20.0	12 12				
49875	50027	6/28/79	13 100.0	0 0.0		0 0.0	0 0.0	0 0.0	9 9				
49876	50018	6/28/79	7 100.0	0 0.0		0 0.0	0 0.0	0 0.0	13 13				
49876	50028	6/28/79	12 100.0	0 0.0		0 0.0	0 0.0	0 0.0	17 17				
49879	50079	6/28/79	12 85.7	0 0.0	0 0.0	1 14.3	2 14.3	2 14.3	14 14				
49877	50029	6/28/79	14 100.0	0 0.0		0 0.0	0 0.0	0 0.0	14 14				
49878	50080	6/28/79	11 84.6	0 0.0	2 15.4	0 0.0	2 15.4	2 15.4	13 13				
49878	50030	6/28/79	Non gravid										
49881	50081	6/28/79	13 100.0	0 0.0		0 0.0	0 0.0	0 0.0	14 14				
49879	50071	6/28/79	12 100.0	0 0.0		0 0.0	0 0.0	0 0.0	12 12				
49880	50081	6/28/79	Mongravid										
49880	50012	6/28/79	13 81.3	0 0.0	3 18.8	3 18.8	3 18.8	3 18.8	19 19				
49881	50083	6/28/79	13 100.0	0 0.0		0 0.0	0 0.0	0 0.0	14 14				
49881	50033	6/28/79	10 90.9	0 0.0	1 9.1	1 9.1	1 9.1	1 9.1	11 11				
49884	50084	6/28/79	Mongravid										
Total	-	-	189 -	0 -	13 -	-	18 -	-	224 -				
Mean	-	-	11.1 -	0.0 -	0.2 -	-	1.1 -	-	11.2 -				
S.D.	-	-	3.3 -	0.00 -	0.53 -	-	1.01 -	-	2.30 -				

Not applicable
B.D. = Standard deviation

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Technical Glyphosate:

TABLE 4. Cont. Individual and Group Mean Maternal Observations at Uterine Examination

Doseage Level, Hole Number	Female Number	Date of Sacrifice and Uterine Examination	Hatching Week 3			Resorptions			Postimplan- tation Loss			Total Implantations No.			Corpora Lutea No.		
			Pertuses		Late No.	Early No.		Total No.	Postimplan- tation Loss No.		Total Implantations No.						
			Viable No.	Nonviable No.		%	%		%	%							
Group / No. (Vehicle Control):																	
49872	50130	7/5/79	14	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	16		
	50182	7/5/79	10	90.9	0	0.0	1	9.1	0	0.0	1	2.1	1	1	11		
49873	50131	7/5/79	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	12		
	50183	7/5/79	13	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	13		
49874	50132	7/5/79	10	66.7	0	0.0	9	0.0	2	13.3	2	13.3	2	13.3	15		
	50184	7/5/79	11	34.6	0	0.0	9	0.0	2	15.4	2	15.4	1	14	14		
49875	50133	7/5/79	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	11		
	50185	7/5/79	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	12		
49876	50134	7/5/79	11	91.7	0	0.0	0	0.0	1	8.3	1	8.3	1	8.3	12		
	50186	7/5/79	11	91.7	0	0.0	0	0.0	1	8.3	1	8.3	1	8.3	13		
49877	50135	7/5/79	13	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	14		
	50187	7/5/79	12	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	13		
49878	50136	7/5/79	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	13		
	50188	7/5/79	12	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	13		
49879	50137	7/5/79	11	91.7	0	0.0	0	0.0	1	8.3	1	8.3	1	8.3	12		
	50189	7/5/79	11	91.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	11		
49880	50138	7/5/79	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	13		
	50190	7/5/79	14	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	14		
49881	50139	7/5/79	-	-	168	-	0	-	1	-	5	-	176	186			
	50191	7/5/79	-	-	-	-	12.0	-	0.0	-	0.5	-	0.6	-	12.6		
			-	-	-	-	1.30	-	0.00	-	0.11	-	0.16	-	1.38		

- Not applicable
S.D. - Standard deviation

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Technical Glyphosate

Dominant Lethal Study in Mice

TABLE 4. Cont.

Individual and Group Mean Maternal Observations at Uterine Examination

Doseage Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination No.	Holding Week 4			Postimplan- tation Loss No.	Total Implantations No.	Corporate Lutes No.			
			Reproductive Features								
			No.	%	No.						
0 mg/kg (Vehicle Control):											
49872	50233	7/13/79	11	100.0	0	0.0	0	11			
		7/12/79	12	100.0	0	0.0	0	12			
49873	50234	7/12/79	16	91.3	0	0.0	0	15			
		7/13/79	8	100.0	0	0.0	0	8			
49874	50235	7/12/79	12	100.0	0	0.0	0	12			
		7/13/79	11	91.7	0	0.0	0	11			
49875	50236	7/12/79	12	100.0	0	0.0	0	12			
		7/13/79	10	90.9	0	0.0	0	10			
49876	50237	7/12/79	4	50.0	0	0.0	4	50.0			
		7/13/79	12	92.3	1	7.7	1	13			
49877	50238	7/12/79	6	75.0	0	0.0	2	75.0			
		7/13/79	13	100.0	0	0.0	0	13			
49878	50239	7/12/79	16	100.0	0	0.0	0	16			
		7/13/79	16	100.0	0	0.0	0	16			
49879	50240	7/12/79	16	100.0	0	0.0	0	16			
		7/13/79	12	91.3	0	0.0	1	12			
49880	50241	7/12/79	9	90.0	0	0.0	1	10.0			
		7/13/79	9	60.0	0	0.0	6	60.0			
49881	50242	7/12/79	0	0.0	0	0.0	0	0			
		7/13/79	11	91.3	0	0.0	1	91.3			
49882	50243	7/12/79	16	100.0	0	0.0	0	16			
		7/13/79	-	-	16	-	16	16			
Total	-	-	191	-	0	0	33	210			
Mean	-	-	10.4	-	0.0	-	1.7	12.1			
S.D.	-	-	3.16	-	0.00	-	2.11	2.61			

- Not Applicable
S.D. = Standard deviation

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Technical Glyphosate:

TABLE 4. Gent.

Dominant Lethal Study in Mice

Individual and Group Mean Maternal Observations at Uterine Examination

Mating Week 5

Doseage Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Pullets		Reptiles		Birds		Post Implantation Lat. No.		Total Implantation No.	
			No.	X	No.	X	No.	X	No.	X	No.	X
0 mg/kg Vehicle Control:												
49872	50139	7/19/79	14	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49873	50389	7/19/79	10	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49874	50340	7/19/79	11	91.7	0	0.0	0	0.0	1	6.3	1	6.3
49874	50391	7/19/79	12	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49874	50341	7/19/79	13	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49874	50392	7/19/79	13	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49875	50362	7/19/79	0	0.0	0	0.0	16	100.0	0	0.0	16	100.0
49875	50393	7/19/79	12	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49876	50143	7/19/79	15	93.8	0	0.0	9	0.0	-1	6.3	1	6.3
49876	50194	7/19/79	14	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49877	50344	7/19/79	13	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49877	50395	7/19/79	12	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49878	50145	7/19/79	13	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49878	50196	7/19/79	7	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49879	50196	7/19/79	12	100.0	0	0.0	1	6.7	2	13.3	2	20.0
49879	50397	7/19/79	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49880	50361	7/19/79	13	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49881	50398	7/19/79	12	80.0	0	0.0	0	0.0	3	20.0	3	20.0
49881	50148	7/19/79	14	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49881	50399	7/19/79	10	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	-	-	215	-	0	-	19	-	21	-	237	151
Mean	-	-	11.3	-	0.0	-	0.9	-	1.2	-	12.5	11.3
S. D.	-	-	3.17	-	0.00	-	1.31	-	0.83	-	3.15	2.11

Not applicable
S.D. = Standard deviation

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Technical Glyphosate:

Dominant Lethal Study in Mice

TABLE 4. Coat. Individual and Group Mean Maternal Observations at Uterine Examination

Dose/age Level, Mice Number	Female Number	Date of Sacculitis and Uterine Examination No.	Matting Week 6				Corpora lutea No.		
			Features		Receptions				
			Viable No.	Nonviable No.	Late No.	Early No.			
0 mg/kg (Vehicle Control):									
49872	50460	7/16/79	11	91.7	0	0.0	1	6.3	12
	50469	7/16/79	11	100.0	0	0.0	0	0.0	5
49873	50461	7/16/79	11	92.3	0	0.0	1	7.7	13
	50490	7/16/79	NonGravid						
49874	50462	7/16/79	11	100.0	0	0.0	0	0.0	12
	50491	7/16/79	11	100.0	0	0.0	0	0.0	11
49875	50463	7/16/79	10	66.7	0	0.0	5	11.1	13
	50492	7/16/79	13	92.9	0	0.0	1	7.1	15
49876	50464	7/16/79	11	84.6	0	0.0	2	15.4	14
	50493	7/16/79	14	100.0	0	0.0	0	0.0	13
49877	50465	7/16/79	15	93.8	0	0.0	1	6.3	16
	50494	7/16/79	12	100.0	0	0.0	0	0.0	12
49878	50466	7/16/79	13	100.0	0	0.0	0	0.0	12
	50495	7/16/79	10	63.3	0	0.0	2	16.7	12
49879	50467	7/16/79	14	100.0	0	0.0	0	0.0	14
	50496	7/16/79	NonGravid						15
49880	50468	7/16/79	11	100.0	0	0.0	0	0.0	11
	50497	7/16/79	9	66.7	0	0.0	5	33.3	14
49881	50469	7/16/79	14	100.0	0	0.0	0	0.0	15
	50498	7/16/79	15	100.0	0	0.0	0	0.0	15
Total	-	-	213	-	0	-	4	-	211
Mean	-	-	11.8	-	0.0	-	0.2	-	12.6
S.D.	-	-	2.43	-	0.00	-	0.55	-	2.16

Not applicable
S.D. = Standard deviation

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Technical Glyphosate:

TABLE 4. Cont.

Dominant Lethal Study In Mice

Individual and Group Mean Maternal Observations at Uterine Examination

Dosage Level, Held Number	Parsite Number	Date of Sacrifical and Uterine Examination	Matning Week 7												Corporate Lot No.	
			Fetuses			Resorptions			Post Implan- tation Loss			Implantations				
			Visible No.	Nonvisible No.	Total No.	Late No.	Early No.	Total No.	No.	%	No.	%	No.	%		
0 mg/kg (Vehicle Control)																
49877	50539	8/2/79	9	81.0	9	0	0	0	0	0	2	16.2	2	16.2	11	
	50568	8/2/79	12	92.3	9	0	0	0	0	1	7.7	1	7.7	13		
49873	50540	8/2/79	15	97.8	9	0	0	0	0	1	6.3	1	6.3	16		
	50589	8/2/79	13	92.9	9	0	0	0	0	1	7.1	1	7.1	17		
49874	50541	8/2/79	10	100.0	10	0	0	0	0	0	0	0	0	0	14	
	50590	8/2/79	13	100.0	10	0	0	0	0	0	0	0	0	0	17	
49875	50542	8/2/79	13	76.5	9	0	0	1	5.9	3	17.6	4	71.5	17		
	50591	8/2/79	11	84.6	9	0	0	0	0	2	15.4	2	15.4	13		
49876	50543	8/2/79	11	76.6	9	0	2	14.3	1	7.1	3	21.4	14	14		
	50592	8/2/79	7	53.8	5	0	0	0	0	0	6	46.2	6	46.2	10	
49877	50544	8/2/79	12	92.3	9	0	0	0	0	1	7.7	1	7.7	13		
	50591	8/2/79	12	92.3	9	0	0	0	0	1	7.7	1	7.7	13		
49878	50545	8/2/79	13	92.9	9	0	0	0	0	1	7.1	1	7.1	14		
	50594	8/2/79	12	100.0	10	0	0	0	0	0	0	0	0	0	12	
49879	50566	8/2/79	13	100.0	10	0	0	0	0	0	0	0	0	0	13	
	50595	8/2/79	13	100.0	10	0	0	0	0	0	0	0	0	0	13	
49880	50543	8/2/79	Nongravid	0.0	0.0	0	0	0	0	0	0	0	0	0	251	
	50596	8/2/79	11	84.6	9	0	0	0	2	15.4	2	15.4	13	13		
49881	50546	8/2/79	9	90.0	9	0	0	0	1	10.0	1	10.0	10	10		
	50597	8/2/79	12	92.3	9	0	0	0	1	7.7	1	7.7	13	13		
Total	-	-	224	-	0	3	-	24	-	-	-	-	-	251		
Mean	-	-	11.8	-	0.0	-	0.1	-	1.3	-	1.4	-	1.4	11.5		
S.D.	-	-	1.84	-	0.00	-	0.50	-	1.61	-	1.51	-	1.86			

- Not applicable
S.D. - Standard deviation

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Technical Glyphosate:

Dominant Lethal Study in Mice

TABLE 4. Cont.

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This document is not individual and Group Mean Maternal Observations at Sterility Examination

Mating Week 8

Maternal Mortality

Postimplantation Loss

Implantations No.

Corporation No.

Dose Level, Male Number	Female Number	Date of Breeding and Uterine Examination No.	Puppies		Maternal Mortality		Total No.	Implantations No.	Corporation No.
			Viable No.	Nonviable No.	Total No.	Early No.			
0 mg/kg (Vehicle Control):									
49872	50637	8/9/79	11	91.7	0	0.0	0	0.0	1
	50636	8/9/79	11	99.0	0	0.0	0	0.0	11
49873	50638	8/9/79	11	100.0	0	0.0	0	0.0	12
	50687	8/9/79	11	99.0	0	0.0	0	0.0	13
49874	50639	8/9/79	11	100.0	0	0.0	0	0.0	11
	50688	8/9/79	10	71.4	0	0.0	4	28.6	14
49875	50640	8/9/79	11	100.0	0	0.0	0	0.0	11
	50689	8/9/79	11	91.7	0	1	7.7	7.7	13
49876	50641	8/9/79	12	100.0	0	0.0	0	0.0	12
	50690	8/9/79	13	100.0	0	0.0	0	0.0	13
49877	50642	8/9/79	16	100.0	0	0.0	0	0.0	16
	50691	8/9/79	9	83.3	0	0.0	0	0.0	6
49878	50543	8/9/79	12	92.3	0	0.0	1	7.7	13
	50642	8/9/79	12	100.0	0	0.0	0	0.0	12
49879	50644	8/9/79	13	100.0	0	0.0	0	0.0	13
	50693	8/9/79	10	100.0	0	0.0	0	0.0	10
49880	50543	8/9/79	11	91.7	0	0.0	1	8.3	12
	50694	8/9/79	9	90.0	0	0.0	1	10.0	10
49881	50646	8/9/79	12	100.0	0	0.0	0	0.0	13
	50695	8/9/79	11	92.3	0	1.7	1.7	1.7	14
Total	-	-	205	-	0	0	11	-	216
Hesn	-	-	11.4	-	0.0	-	0.5	-	12.0
S.D.	-	-	2.10	-	0.00	-	0.39	-	2.45

- Not applicable

S.D. - Standard deviation

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Technical Glyphosate:

TABLE 4. Cont.

Dominant Lethal Study in Mice

Individual and Group Mean Maternal Observations at Uterine Examination

Dosage Level, Male Number	Female Number	Matting Week 1											
		Date of Sacrifice and Uterine Examination		Fetuses				Resorptions				Postimplan- tation Loss	
		Viable No.	NonViable No.	Late No.	Total No.	Early No.	Total No.	Implanta- tion No.	Total No.				
240 mg/kg (Positive Control):													
49382	49932	6/21/79	1	14.3	0	0.0	0	0.0	6	85.7	7	9	
	49963	6/21/79	2	33.3	0	0.0	0	0.0	4	66.7	6	16	
49681	49933	6/21/79	0	0.0	0	0.0	1	25.0	3	75.0	4	14	
	49984	6/21/79	1	70.0	0	0.0	0	0.0	3	10.0	3	10	
49884	49934	6/21/79	Nongravid										
	49985	6/21/79	Nongravid	1	10.0	0	0.0	0	0.0	9	90.0	10	
49881	49931	6/21/79		2	27.3	0	0.0	0	0.0	8	72.7	11	
	49986	6/21/79		3	76.5	0	0.0	0	0.0	3	23.1	3	
49886	49916	6/21/79		4	36.4	0	0.0	1	9.1	6	56.5	7	
	49987	49937		5	76.9	0	0.0	0	0.0	1	23.1	13	
49887	49988	6/21/79		6	76.9	0	0.0	0	0.0	1	23.1	11	
	49918	6/21/79		7	76.9	0	0.0	0	0.0	1	23.1	12	
49888	49919	6/21/79		8	81.8	0	0.0	0	0.0	7	100.0	10	
	49939	6/21/79		9	81.8	0	0.0	0	0.0	2	18.2	11	
49889	49950	6/21/79		10	81.8	0	0.0	0	0.0	6	100.0	6	
	49930	6/21/79		11	66.1	0	0.0	0	0.0	1	31.4	10	
49890	49951	6/21/79		12	53.6	0	0.0	0	0.0	6	46.2	13	
	49991	6/21/79		13	16.7	0	0.0	0	0.0	5	83.3	6	
49891	49961	6/21/79	Nongravid										
	49992	6/21/79	Nongravid										
Total	-	-	-	61	-	0	-	76	-	137	177		
Mean	-	-	-	4.1**	-	0.0	-	5.1**	-	9.1	11.5		
S.D.	-	-	-	3.77	-	0.00	-	2.12	-	2.95	2.89		

Not applicable

S.D. = Standard deviation
**Significantly different from control group, P<0.01

Technical Glyphosate:

Dominant Lethal Study in Mice

TABLE 4. Cont.

Individual and Group Mean Maternal Observations at Uterine Examination

Dose Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Puppies		Receptus		Postimplan- tation Loss		Total Implantations No.	Corpora lutea No.
			Viable No.	Nonviable No.	No.	Early No.	Late No.	Total No.		
240 mg/kg (Positive Control):										
49882	50014	6/28/79	9	75.0	0	0.0	0	0.0	3	25.0
	50066	6/28/79	6	0.0	0	0.0	0	0.0	5	100.0
49883	50031	6/28/79	4	66.7	0	0.0	0	0.0	2	33.3
49884	50037	6/28/79	4	44.4	0	0.0	0	0.0	5	55.5
	50036	6/28/79	0	0.0	0	0.0	0	0.0	3	100.0
49885	50080	6/28/79	6	0.0	0	0.0	0	0.0	3	0.0
	50037	6/28/79	Non gravid							
49885	50089	6/28/79	6	60.0	0	0.0	0	0.0	4	40.0
	50038	6/28/79	5	50.0	0	0.0	0	0.0	5	50.0
49886	50090	6/28/79	8	72.7	0	0.0	0	0.0	3	27.3
	50039	6/28/79	1	33.3	0	0.0	0	0.0	2	66.7
49887	50091	6/28/79	2	22.2	0	0.0	0	0.0	1	77.8
	50092	6/28/79	0	0.0	0	0.0	0	0.0	1	100.0
49888	50040	6/28/79	0	0.0	0	0.0	0	0.0	5	100.0
	50041	6/28/79	Non gravid							
49889	50094	6/28/79	8	80.0	0	0.0	2	20.0	1	70.0
	50042	6/28/79	6	60.0	0	0.0	4	40.0	4	40.0
49890	50095	6/28/79	0	0.0	0	0.0	0	0.0	3	100.0
	50043	6/28/79	0	0.0	0	0.0	0	0.0	3	100.0
49891	50096	6/28/79	Non gravid							
		-	53	-	0	-	66	-	119	16.6
			3.34*	-	0.0	-	4.12*	-	7.4	9.1**
			3.34	-	0.00	-	1.89	-	3.16	3.64
Total	-	-	-	-	-	-	-	-	-	-
Mean	-	-	-	-	-	-	-	-	-	-
S.D.	-	-	-	-	-	-	-	-	-	-

Not applicable

S.D. = Standard deviation
*Significantly different from control group, p<0.01CONTAINS TRADE SECRET OF
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Technical Glyphosate:

TABLE 4. Cont.

Dominant Lethal Study in Mice

Individual and Group Mean Maternal Observations at Uterine Examination

Dosage Level, Male Number	Female Number	Matting Week 3												Corporate Route No.	
		Date of Sacrifice and Sterile Examination			Pups			Resorptions			Post Implan- tation loss				
		No.	%	No.	No.	%	No.	%	No.	%	No.	%	No.		
240 mg/kg (Positive Control):															
49882	50160	7/5/79	1	30.0	0	0.0	0	0.0	7	70.0	7	70.0	10	12	
	50192	7/5/79	1	10.0	0	0.0	0	0.0	9	90.0	9	90.0	10	12	
49883	50161	7/5/79	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	9	
	50193	7/5/79	6	72.7	0	0.0	1	9.1	2	18.2	3	27.3	11	11	
49884	50162	Mongavid	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	5	
	50195	7/5/79	5	38.5	0	0.0	0	0.0	8	61.5	8	61.5	13	13	
49885	50163	Mongavid	6	60.0	0	0.0	6	60.0	2	20.0	10	100.0	10	12	
	50196	7/5/79	5	45.5	0	0.0	0	0.0	6	54.5	6	54.5	11	12	
49886	50164	Mongavid	3	37.5	0	0.0	0	0.0	5	62.5	5	62.5	6	9	
	50197	7/5/79	6	60.0	0	0.0	0	0.0	4	40.0	4	40.0	10	12	
49887	50165	Mongavid	10	90.9	0	0.0	0	0.0	1	9.1	1	9.1	11	12	
	50198	7/5/79	5	45.5	0	0.0	0	0.0	6	54.5	6	54.5	11	12	
49888	50166	Mongavid	3	37.5	0	0.0	0	0.0	5	62.5	5	62.5	6	9	
	50199	7/5/79	3	30.0	0	0.0	0	0.0	7	70.0	7	70.0	10	10	
49889	50167	Mongavid	2	16.7	0	0.0	0	0.0	10	83.3	10	83.3	12	14	
	50200	7/5/79	10	76.9	0	0.0	0	0.0	3	23.1	3	23.1	13	13	
49890	50168	Mongavid	5	55.6	0	0.0	0	0.0	4	44.4	4	44.4	9	9	
	50201	7/5/79	7	77.8	0	0.0	0	0.0	2	22.2	2	22.2	9	9	
49891	50169	Mongavid	7	77.8	0	0.0	0	0.0	-	-	-	-	-	-	
	50202	7/5/79	7	77.8	0	0.0	0	0.0	-	-	-	-	-	-	
Total	-	-	77	0	-	-	19	-	-	-	156	174	-	-	
Mean	-	-	-	4.344	-	0.0	-	4.444	-	-	9.8	10.944	-	-	
S.D.	-	-	-	3.17	-	0.00	-	2.00	-	-	3.16	3.17	1.25	1.25	

- Not applicable

S.D. = Standard Deviation
Significantly different from control group, p<0.01

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Technical Glyphosate: Dominant Lethal Study in Mice

TABLE 4. Cont.

Individual and Group Mean Maternal Observations at Sterile Examination

Dose Level, Male Number	Female Number	Date of Sacrifice and Sterile Examination	Matings Week 4			Postimplan- tation Loss No. %	Total Implantations No.	Corporate Index No.		
			Puppies		Receptions					
			Viable No. %	Nonviable No. %	No.					
240 mg/kg (Positive Control):										
49882	50246	7/12/79	92.9	0	0.0	0	0.0	1		
	50235	7/12/79	100.0	0	0.0	0	0.0	0		
49883	50245	7/12/79	76.9	0	0.0	0	0.0	3		
	50246	7/12/79	100.0	0	0.0	0	0.0	23.1		
49884	50246	7/12/79	0	0.0	0	0.0	0	0		
	50247	7/12/79	100.0	0	0.0	0	0.0	0		
49885	50247	7/12/79	100.0	0	0.0	0	0.0	0		
	50248	7/12/79	45.5	0	0.0	0	0.0	56.5		
49886	50248	7/12/79	0	0.0	0	0.0	0	0		
	50249	7/12/79	100.0	0	0.0	2	15.4	13		
49887	50249	7/12/79	84.6	0	0.0	0	0.0	0		
	50250	7/12/79	100.0	0	0.0	0	0.0	0		
49888	50251	7/12/79	100.0	0	0.0	0	0.0	0		
	50301	7/12/79	100.0	0	0.0	0	0.0	0		
49889	50252	7/12/79	34.3	0	0.0	1	9.1	3		
	50302	7/12/79	100.0	0	0.0	0	0.0	0		
49890	50253	7/12/79	60.0	0	0.0	2	13.3	6		
	50303	7/12/79	100.0	0	0.0	0	0.0	0		
49891	50254	7/12/79	100.0	0	0.0	0	0.0	0		
	50304	7/12/79	100.0	0	0.0	0	0.0	0		
Total	-	-	152	-	-	-	23	-		
Mean	-	-	10.9	-	0.0	-	1.5	-		
S.D.	-	-	2.07	-	0.00	-	0.60	-		
							2.42	-		
							1.46	1.05		

- Not applicable
 S.D. - Standard deviation

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Technical Glyphosate:

Dominant Lethal Study In Mice

TABLE 4. Cont.

Individual and Group Mean Maternal Observations at Uterine Examination

Hatching Week 5

Dose/age Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Parturition		Resorptions		Postpartum Litter loss No.	Total Implantations No.	Corporate Label No.
			Viable No.	Nonviable No.	Late No.	Early No.			
240 mg/kg (Positive Control):									
49882	50349	7/19/79	13	92.9	0	0.0	1	1.1	14
	50400	7/19/79	11	91.7	0	0.0	1	6.3	12
49883	50150	7/19/79	Mongeavid					8.3	11
	50601	7/19/79							
49884	50351	7/19/79							
	50602	7/19/79	Mongeavid						
49885	50352	7/19/79	Mongeavid						
	50403	7/19/79	Mongeavid						
49886	50353	7/19/79	12	92.3	0	0.0	1	7.7	13
	50404	7/19/79	12	100.0	0	0.0	0	0.0	12
49887	50354	7/19/79	Mongeavid						
	50405	7/19/79	9	90.0	0	0.0	1	10.0	10
49888	50355	7/19/79	Mongeavid						
	50606	7/19/79	Mongeavid						
49889	50356	7/19/79	15	100.0	0	0.0	0	0.0	15
	50407	7/19/79	13	100.0	0	0.0	0	0.0	13
49890	50357	7/19/79	12	92.3	0	0.0	1	7.7	13
	50408	7/19/79	12	100.0	0	0.0	0	0.0	12
49891	50358	7/19/79	11	91.7	0	0.0	1	6.3	12
	50409	7/19/79	7	100.0	0	0.0	0	0.0	7
Total	-	-	140	-	0	-	7	-	157
Mean	-	-	11.7	-	0.0	-	0.6	-	13.1
S.D.	-	-	2.06	-	0.00	-	0.19	-	2.09
							0.51	-	1.64

Not applicable

S.D. = Standard deviation

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Technical Glyphosate:

Dominant Lethal Study in Mice

TABLE 4. Cont. Individual and Group Mean Maternal Observations at Uterine Examination

Dose Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Matting Week 6				Postimplan- tation Loss No.	Total Implanted No.	Corpora lutea No.			
			Fetuses		Resorptions							
			Viable No.	Nonviable No.	Late No.	Early No.						
250 mg/kg (Positive Control):												
49862	50450	7/16/79	11	92.3	0	0.0	0	0.0	1	7.7		
	50599	7/26/79	11	91.7	0	0.0	1	8.3	0	6.3		
49863	50451	7/26/79	13	100.0	0	0.0	0	0.0	1	12		
	50500	7/26/79	10	90.9	0	0.0	0	0.0	1	11		
49864	50452	7/26/79	10	90.9	0	0.0	1	9.1	1	11		
	50501	7/26/79	10	90.9	0	0.0	1	9.1	1	11		
49865	50453	7/26/79	10	90.9	0	0.0	1	9.1	1	11		
	50502	7/26/79	10	90.9	0	0.0	1	9.1	1	11		
49866	50454	7/26/79	10	83.3	0	0.0	0	0.0	2	16.7		
	50503	7/26/79	12	92.3	0	0.0	0	0.0	1	7.7		
49867	50455	7/26/79	12	85.7	0	0.0	2	14.3	0	14.3		
	50504	7/26/79	10	53.1	0	0.0	0	0.0	1	46.7		
49868	50456	7/26/79	12	100.0	0	0.0	0	0.0	1	12		
	50505	7/26/79	13	92.3	0	0.0	1	7.7	1	13		
49869	50457	7/26/79	16	100.0	0	0.0	0	0.0	1	16		
	50506	7/26/79	11	100.0	0	0.0	0	0.0	1	11		
49870	50458	7/26/79	12	92.3	0	0.0	0	0.0	1	12		
	50507	7/26/79	10	71.4	0	0.0	0	0.0	1	16		
49891	50459	7/26/79	10	71.4	0	0.0	4	28.6	5	18.6		
	50508	-	-	-	-	-	-	-	-	-		
Total	-	-	162	-	0	-	17	-	163	187		
Mean	-	-	11.6	-	0.0	-	1.2	-	13.1	17.4		
S.D.	-	-	1.87	-	0.00	-	0.35	-	1.46	1.50		

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Not applicable
S.D. - Standard deviation

Technical Glyphosate: TABLE 4. Cont.	Dominant Lethal Study in Mice									
	Individual and Group Mean Maternal Observations at Uterine Examination									
	Matting Week 7									
Dosage Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Viable No.	Pellets No.	Nonviable No.	Receptions Late No.	Receptions Early No.	Postimplan- tation Late No.	Postimplan- tation Early No.	Total No.
260 mg/kg (Positive Control):										
498862	50549	6/7/79	49	31.3	0	0.0	1	0.3	1	16.7
	50598	6/2/79	61	100.0	0	0.0	0	0.0	0	11
498831	50550	6/2/79	59	80.9	0	0.0	1	9.1	0	11
498844	50599	6/2/79	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	17
	50551	6/2/79	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	17
498855	50600	6/2/79	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	17
	50552	6/2/79	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	17
498866	50553	6/2/79	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	16
	50602	6/2/79	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	16
498877	50554	6/2/79	8	80.0	0	0.0	0	20.0	2	10
	50603	6/2/79	8	65.7	0	0.0	0	33.3	4	12
498888	50555	6/2/79	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	17
	50604	6/2/79	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	NonGray	17
498899	50556	6/2/79	11	84.6	0	0.0	0	15.4	2	15.4
	50605	6/2/79	3	75.0	0	0.0	0	25.0	1	5
498900	50557	6/2/79	11	100.0	0	0.0	0	0.0	0	11
	50606	6/2/79	12	92.3	0	0.0	0	7.7	1	13
498911	50558	6/2/79	19	100.0	0	0.0	0	0.0	0	14
	50607	6/2/79	10	100.0	0	0.0	0	0.0	0	10
Total	-	-	123	-	6	-	12	-	16	152
Mean	-	-	10.3	-	0.0	-	1.0	-	1.2	11.8
S.D.	-	-	3.08	-	0.00	-	0.39	-	1.19	2.91
										2.64

— Not Applicable
S.D. = Standard deviation

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Technical Glyphosate:

Dominant Lethal Study In Mice

TABLE 4. Cont. Individual and Group Mean Maternal Observations at Uterine Examination

Dosage Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Matting Week 3											
			Puppies			Resorptions			Post Implan- tation Loss			Total Implantations No.		
			Viable No.	NonViable No.	%	Late No.	Early No.	%	No.	%	No.	No.	%	%
<u>240 mg/kg (Positive Control):</u>														
49882	50647	8/9/79	13	100	0	0	0	0	0	0	0	0	0	0
	50696	8/9/79	10	90	9	0	0	0	0	1	9.1	1	9.1	11
49883	50644	8/9/79	14	100	0	0	0	0	0	0	0	0	0	0
	50691	8/9/79	0	0	0	0	0	0	0	0	0	0	0	0
49884	50649	8/9/79	14	100	0	0	0	0	0	0	0	0	0	0
	50650	8/9/79	11	100	0	0	0	0	0	0	0	0	0	0
49885	50698	8/9/79	11	100	0	0	0	0	0	0	0	0	0	0
	50699	8/9/79	15	100	0	0	0	0	0	0	0	0	0	0
49886	50651	8/9/79	14	100	0	0	0	0	0	0	0	0	0	0
	50700	8/9/79	11	100	0	0	0	0	0	0	0	0	0	0
49887	50652	8/9/79	11	100	0	0	0	0	0	0	0	0	0	0
	50701	8/9/79	11	100	0	0	0	0	0	0	0	0	0	0
49888	50653	8/9/79	13	100	0	0	0	0	0	0	0	0	0	0
	50702	8/9/79	14	93	3	0	0	0	1	6.7	1	6.7	15	15
49889	50654	8/9/79	13	92	0	0	0	0	1	7.1	1	7.1	14	17
	50703	8/9/79	13	92	0	0	0	0	0	0	0	0	0	0
49890	50655	8/9/79	12	100	0	0	0	0	0	0	0	0	0	12
	50704	8/9/79	7	53	0	0	0	0	6	46.2	6	46.2	13	13
49891	50656	8/9/79	13	100	0	0	0	0	0	0	0	0	0	0
	50705	8/9/79	-	-	-	-	-	-	-	-	-	-	-	17
Total	-	-	160	-	-	-	-	-	10	-	17	-	17	189
Mean	-	-	11.4	-	-	0.0	-	0.0	-	0.7	-	1.2	-	13.5
S.D.	-	-	3.81	-	-	0.00	-	0.0	-	1.59	-	1.52	-	1.87

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Not applicable
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Technical Glyphosate:

TABLE 4. Cont. Individual and Group Mean Mortal Observations at Uterine Examination

Doseage Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Hatching Week t				Corpora lutea No.	
			Pullets		Receptors			
			Viable No.	Nonviable No.	Late No.	Early No.		
100 mg/kg:								
49992	49942	6/21/79	100.0	0	0.0	0	0	
49991	49941	6/21/79	91.1	0	1	6.7	5	
49991	49941	6/21/79	0	0	0	0.0	9	
49994	49944	6/21/79	91.7	0	0	0.0	19	
49994	49944	6/21/79	0	0	0	0.0	6	
49994	49944	6/21/79	92.3	0	0	0.0	5	
49994	49944	6/21/79	11	90.7	0	0.0	12	
49995	49945	6/21/79	0	0	0	0.0	12	
49995	49945	6/21/79	100.0	0	0	0.0	14	
49996	49946	6/21/79	Monogram	0	0	0.0	9	
49996	49946	6/21/79	12	100.0	0	0.0	12	
49996	49946	6/21/79	92.3	0	0	0.0	12	
49997	49947	6/21/79	0	0	1	7.7	13	
49997	49947	6/21/79	Monogram	0	0.0	7.7	13	
49998	49948	6/21/79	Monogram	0	0	0.0	12	
49998	49948	6/21/79	13	100.0	0	0.0	12	
49998	49948	6/21/79	100.0	0	0	0.0	12	
49999	49949	6/21/79	Monogram	0	0	0.0	12	
49999	49949	6/21/79	11	100.0	0	0.0	12	
50000	50000	6/21/79	12	100.0	0	0.0	12	
49950	49950	6/21/79	10	100.0	0	0.0	12	
50001	50001	6/21/79	12	97.3	0	0.0	12	
49951	49951	6/21/79	Monogram	0	0	0.0	12	
50002	50002	6/21/79	137	-	7	-	11	
Total	-	-	137	-	7	-	11	
Mean	-	-	10.5	-	0.1	-	1.0	
S.D.	-	-	3.50	-	0.00	-	1.16	
					1.34	-	1.17	
					1.52	-	1.17	

- Not applicable
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 %Varies cycling

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Technical Glyphosate:

Dominant Lethal Study in Mice

TABLE 4. Cont.

Individual and Group Mean Maternal Observations at Uterine Examination

Dosage Level, Male Number	Female Number	Date of Sacculifice and Uterine Examination	Matting Week 2				Corpora lutea No.	Total Implanta- tions No.	Portion of Impla- tation Loss No.			
			Features		Resorptions	Late No.						
			Viable No.	Nonviable No.								
<u>100 mg/kg:</u>												
49892	50104	6/28/79	11	84.6	0	0	2	15.4	19			
	50097	6/28/79	12	100.0	0	0	0	0.0	12			
49893	50065	6/28/79	13	100.0	0	0	0	0.0	16			
	50098	6/28/79	13	100.0	0	0	0	0.0	13			
49894	50046	6/28/79	14	100.0	0	0	0	0.0	15			
	50099	6/28/79	10	100.0	0	0	0	0.0	10			
49895	50047	6/28/79	13	92.9	0	0	1	7.1	16			
	50100	6/28/79	7	87.5	0	0	1	12.5	10			
49896	50048	6/28/79	11	84.6	0	0	2	15.4	13			
	50101	6/28/79	13	100.0	0	0	0	0.0	11			
49897	50049	6/28/79	11	91.7	0	0	1	8.3	12			
50102	6/28/79	Nongravid		May fall under the protection of intellectual property rights such as giving full effect to a patent or other rights which may be granted under the laws of the United States or other countries.								
49898	50050	6/28/79	11	91.7	0	0	1	8.3	12			
50103	6/28/79	8	72.7	0	0	3	27.3	11	17			
49899	50051	6/28/79	12	92.3	0	0	1	7.7	13			
50104	6/28/79	Mongravid		May fall under the protection of intellectual property rights such as giving full effect to a patent or other rights which may be granted under the laws of the United States or other countries.								
50052	6/28/79	9	64.3	0	0	5	35.7	14	16			
50105	6/28/79	16	100.0	0	0	0	0.0	0	16			
50053	6/28/79	Mongravid		May fall under the protection of intellectual property rights such as giving full effect to a patent or other rights which may be granted under the laws of the United States or other countries.								
50106	6/28/79	Mongravid		May fall under the protection of intellectual property rights such as giving full effect to a patent or other rights which may be granted under the laws of the United States or other countries.								
Total	-	1083	-	0	1	16	-	17	215			
Mean	-	-	-	-11.4	0.0	-	0.1	-	13.4			
S.D.	-	-	-	-	2.31	-	0.00	1.39	1.55			

- Not applicable
S.D. - Standard deviationCONTAINS TRADE SECRET OR
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Technical Glyphosate:

Dominant Lethal Study in Mice

Table 4. Cont.

Individual and Group Mean Maternal Observations at Uterine Examination

Dose Level, Hole Number	Female Number	Date of Sacrifice and Uterine Examination	Mat in Week 3			Corpora Lutea No.	
			Pertuses		Late No.		
			Viable No.	Nonviable No.			
200 mg/kg:							
49992	50150	7/5/79	13 92.9	0 0.0	1 7.1	0 0.0	
	50201	7/5/79	14 93.3	0 0.0	0 0.0	1 6.7	
49993	50151	6/25/79	Died - gravid		1 6.7	1 6.7	
	50204	7/5/79	Monogloid				
49994	50152	7/5/79	15 100.0	0 0.0	0 0.0	0 0.0	
	50205	7/5/79	15 66.7	0 0.0	0 0.0	3 33.3	
49995	50153	7/5/79	15 100.0	0 0.0	0 0.0	0 0.0	
	50206	7/5/79	Monogloid				
49996	50154	7/5/79	10 71.4	0 0.0	0 0.0	4 28.6	
	50207	7/5/79	12 100.0	0 0.0	0 0.0	4 20.0	
49997	50155	7/5/79	11 78.6	0 0.0	0 0.0	3 21.4	
	50208	7/5/79	10 90.9	0 0.0	0 0.0	1 9.1	
49998	50156	7/5/79	16 93.3	0 0.0	0 0.0	1 6.7	
	50209	7/5/79	13 100.0	0 0.0	0 0.0	0 0.0	
49999	50157	7/5/79	11 91.7	0 0.0	1 8.3	1 6.3	
	50210	7/5/79	13 92.9	0 0.0	1 7.1	1 7.1	
49990	50158	7/5/79	7 63.6	0 0.0	4 36.4	4 16.4	
	50211	7/5/79	15 100.0	0 0.0	0 0.0	0 0.0	
49991	50159	7/5/79	10 83.3	0 0.0	2 16.7	1 16.7	
	50212	7/5/79	13 100.0	0 0.0	0 0.0	0 0.0	
Total	-	-	204	0 -	1 21	-	
Mean	-	-	12.0	0.0	1.3	1.4	
S.D.	-	-	2.62	0.00	1.53	1.50	

*date of death
- Not applicable
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2.67

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Technical Glyphosate:

TABLE 4, Cont.

Individual and Group Mean Maternal Observations at Uterine Examination

Dose Level, Male Number	Female Number	Meeting Week 4												Corpora Litaria No.	
		Date of Sacrifice and Uterine Examination			Pectus Visible No.			Resorptions Late No.			Postimplan- tation Loss No.				
		No.	%	%	No.	%	%	No.	%	%	No.	%	%		
200 mg/kg															
49882	50255	7/12/79	10	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	11	
	50105	7/12/79	10	30.0	0	0.0	1	9.1	0	0.0	1	9.1	11	12	
49883	50256	7/12/79	14	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	14	
	50306	7/12/79	10	53.3	0	0.0	1	8.3	1	8.3	2	16.7	12	12	
49884	50257	7/12/79	Non gravid												
	50307	7/12/79	9	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	9	
49885	50258	7/12/79	9	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	9	
	50308	7/12/79	13	81.3	0	0.0	0	0.0	3	18.8	3	18.8	16	16	
49886	50259	7/12/79	11	91.7	0	0.0	0	0.0	1	8.3	1	8.3	12	15	
	50309	7/12/79	13	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	13	
49887	50260	7/12/79	13	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	13	
	50310	7/12/79	Non gravid												
49888	50261	7/12/79	13	92.9	0	0.0	1	7.1	0	0.0	1	7.1	14	14	
	50312	7/12/79	10	90.9	0	0.0	0	0.0	1	9.1	1	9.1	11	11	
49889	50262	7/12/79	12	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	12	
	50313	7/12/79	12	92.3	0	0.0	0	0.0	1	7.7	1	7.7	13	13	
49890	50263	7/12/79	14	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	14	
	50313	7/12/79	13	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	13	
49901	50264	7/12/79	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	11	
	50317	7/12/79	0	0.0	0	0.0	0	0.0	3	100.0	3	100.0	3	3	
Total	-	-	184	-	0	-	3	-	10	-	11	-	197	203	
Mean	-	-	10.8	-	0.0	-	0.2	-	0.6	-	0.8	-	11.6	11.9	
S.D.	-	-	3.74	-	0.00	-	0.39	-	1.00	-	1.03	-	2.95	2.95	

- Not applicable

S.D. - Standard deviation

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Technical Glyphosate:

TABLE 4. Cont. Individual and Group Mean Maternal Observations at Uterine Examination

Dosage Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Fetuses		Reproductive Rate		Postimplan- tation Loss		Implantations		Corporate Ident. No.
			Viable No.	Nonviable No.	late No.	early No.	late No.	early No.	late No.	early No.	
100 mg/kg:											
49892	50359	7/19/79	91.7	0	0.0	1	0.3	0	0.0	1	0.1
	50410	7/19/79	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49893	50160	7/19/79	90.0	0	0.0	0	0.0	1	0.0	1	0.0
	50611	7/19/79	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49894	50361	7/19/79	78.6	0	0.0	2	14.3	1	7.1	3	21.4
	50412	7/19/79	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49895	50462	7/19/79	Montgray 14								12
	50413	7/19/79	Montgray 14								12
49896	50463	7/19/79	85.7	0	0.0	0	0.0	2	14.3	2	14.3
	50414	7/19/79	91.7	0	0.0	0	0.0	1	8.3	1	8.3
49897	50464	7/19/79	Montgray 14								12
	50415	7/19/79	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49898	50465	7/19/79	90.0	0	0.0	1	9.1	0	0.0	1	9.1
	50416	7/19/79	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49899	50466	7/19/79	100.0	0	0.0	0	0.0	0	0.0	0	0.0
	50417	7/19/79	90.0	0	0.0	1	9.1	0	0.0	1	9.1
49900	50467	7/19/79	100.0	0	0.0	0	0.0	0	0.0	0	0.0
	50418	7/19/79	83.3	without regulatory problem	0.0	0	0.0	2	6.7	2	6.7
49901	50368	7/19/79	93.3	0.0	0.0	0	0.0	1	6.7	1	6.7
	50619	7/19/79	92.9	0.0	0.0	1	7.1	1	7.1	1	7.1
Total	-	-	183	-	-	5	-	9	-	14	-
Mean	-	-	10.8	-	0.0	-	0.2	0.5	-	0.8	-
S.D.	-	-	1.95	-	0.00	-	0.59	0.73	-	0.86	-

- Not applicable
S.D. - Standard deviation

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Technical Glyphosate:

TABLE 4. Cont.
Individual and Group Mean Maternal Observations at Uterine Examination
Dominant Lethal Study in Mice

Dosage Level, Male Number	Female Number	Date of Sacrifice and Necropsy Examination	Matting Week 6			Resorptions No.	Post Implan- tation Loss No.	Total Implantations No.	Corpora Lutea No.				
			Fetus		No. Viable No.								
			No. Nonviable No.	No. Early No.									
<u>200 mg/kg:</u>													
49892	50460	7/16/79	12	92.3	0	0.0	0	0.0	1				
	50509	7/20/79	13	91.9	0	0.0	0	0.0	1				
49893	50461	7/20/79	13	100.0	0	0.0	0	0.0	0				
	50510	7/20/79	13	100.0	0	0.0	0	0.0	0				
49894	50462	7/20/79	10	83.3	0	0.0	0	0.0	2				
	50511	7/20/79	19	100.0	0	0.0	0	0.0	0				
49895	50463	7/20/79	12	100.0	0	0.0	0	0.0	0				
	50512	7/26/79	12	100.0	0	0.0	0	0.0	0				
49896	50464	7/26/79	11	78.6	0	0.0	1	1.1	2				
	50513	7/26/79	13	81.3	0	0.0	1	14.3	3				
49897	50465	7/26/79	Non record	0	0	0.0	1	12.3	1				
	50514	7/26/79	14	100.0	0	0.0	0	0.0	0				
49898	50466	7/26/79	13	100.0	0	0.0	0	0.0	0				
	50515	7/26/79	13	100.0	0	0.0	0	0.0	0				
49899	50467	7/26/79	13	92.3	0	0.0	0	0.0	0				
	50516	7/26/79	11	91.7	0	0.0	0	0.0	0				
49900	50468	7/26/79	13	92.3	0	0.0	0	0.0	0				
	50517	7/26/79	15	100.0	0	0.0	0	0.0	0				
49901	50469	7/26/79	13	92.3	0	0.0	0	0.0	0				
	50518	7/26/79	14	100.0	0	0.0	0	0.0	0				
Total	-	-	240	-	0	0	14	-	16				
Mean	-	-	17.6	-	0.0	-	0.6	-	1.0				
S.D.	-	-	1.42	-	0.00	-	0.31	-	1.19				
									1.20				

- Not applicable
S.D. - Standard deviation

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Technical Glyphonate:

Dominant Lethal Study In Mice

TABLE A. Cont.

Individual and Group Mean Maternal Observations at Uterine Examination

Dosage Level, Male Number	Female Number	Date of Gestifice and Iteration Examination	Matting Week 7				Postimplan- tation Loss No.	Total Implantations No.	Corpora Lutea No.			
			Pretuses		Late No.	Early No.						
			Viable No.	Nonviable No.								
200 mg/kg:												
50159	50159	8/2/79	13	100.0	0	0.0	0	0.0	0			
		8/2/79	12	100.0	0	0.0	0	0.0	0			
50160	50160	8/2/79	15	100.0	0	0.0	0	0.0	0			
		8/2/79	10	100.0	0	0.0	0	0.0	0			
501609	501609	8/2/79	10	100.0	0	0.0	0	0.0	0			
		8/2/79	10	16.9	0	0.0	1	21.0	1			
501611	501611	8/2/79	11	100.0	0	0.0	0	0.0	0			
		8/2/79	14	100.0	0	0.0	0	0.0	0			
501610	501610	8/2/79	11	100.0	0	0.0	0	0.0	0			
		8/2/79	14	100.0	0	0.0	0	0.0	0			
501612	501612	8/2/79	13	100.0	0	0.0	0	0.0	0			
		8/2/79	14	100.0	0	0.0	0	0.0	0			
501614	501614	8/2/79	8	80.0	0	0.0	0	0.0	0			
		8/2/79	10	100.0	0	0.0	0	0.0	0			
501613	501613	8/2/79	14	91.1	0	0.0	1	6.7	1			
		8/2/79	13	75.0	0	0.0	1	25.0	4			
501615	501615	8/2/79	12	92.3	0	0.0	1	7.7	1			
		8/2/79	10	81.3	0	0.0	2	16.7	2			
501617	501617	8/2/79	12	100.0	1	0.0	0	0.0	0			
		8/2/79	11	91.1	0	0.0	1	8.3	1			
501616	501616	8/2/79	10	100.0	0	0.0	0	0.0	0			
		8/2/79	14	93.3	0	0.0	1	6.7	1			
501618	501618	8/2/79	-	-	1	-	-	229	253			
501617	501617	8/2/79	217	-	0	-	12	-	-			
Total	-	-	11.4	-	0.0	-	0.6	-	12.1			
Mean	-	-	2.16	-	0.00	-	0.14	-	3.18			
S.D.	-	-	-	-	-	-	0.90	-	2.55			

- Not applicable
S.D. - Standard deviation

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Technical Glyphosate:

TABLE 4. Count, Individual and Group Mean Maternal Observations at Uterine Examination
Dominant Lethal Study in Mice

Dosage Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Matting Week 8			Receptions No.	Postimplan- tation loss No.	Total Implantations No.	Corpora lutea No.				
			Pettus		Nonviable No.								
			Viable No.	No.									
<u>200 mg/kg:</u>													
49892	50657	8/9/79	4	57.1	0	0.0	1	14.3	2				
	50706	8/9/79	13	100.0	0	0.0	0	0.0	0				
49893	50658	8/9/79	8	66.7	0	0.0	4	33.3	4				
	50301	8/9/79	5	83.3	0	0.0	0	16.7	1				
49894	50659	8/9/79	14	82.4	0	0.0	3	17.6	1				
	50108	8/9/79	12	100.0	0	0.0	0	0.0	0				
49895	50660	8/9/79	12	92.3	0	0.0	1	7.7	1				
	50309	8/9/79	Nongravid	0	0.0	0.0	1	3.7	1				
49896	50661	8/9/79	15	100.0	0	0.0	0	0.0	0				
	50710	8/9/79	11	84.6	0	0.0	1	7.7	1				
49897	50662	8/9/79	Monovaginal	0	0.0	0.0	1	5.4	2				
	50711	8/9/79	11	11.1	0	0.0	0	0.0	0				
49898	50663	8/9/79	17	100.0	0	0.0	0	0.0	0				
	50712	8/9/79	13	100.0	0	0.0	0	0.0	0				
49899	50664	8/9/79	12	10.0	0	0.0	0	0.0	0				
	50713	8/9/79	9	15.0	0	0.0	3	20.0	3				
49900	50665	8/9/79	0	0.0	0.0	0.0	3	25.0	12				
	50714	8/9/79	10	83.3	0	0.0	15	100.0	15				
49901	50666	8/9/79	15	93.3	0	0.0	2	16.7	12				
	50715	8/9/79	12	100.0	0	0.0	0	0.0	0				
Total	-	-	193	-	0	-	16	-	232				
Mean	-	-	10.7	-	0.0	-	1.3	-	12.9				
S.D.	-	-	4.25	-	0.00	-	1.3	-	3.47				
							3.56	-	2.91				
							1.03	-	1.88				

Applicable
standard deviation

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Technical Glyphosate:

TABLE 4. Cont. Dominant Lethal Study in Mice
Individual and Group Mean Maternal Observations at Uterine Examination

Doseage Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Mating Week 1			Postimplan- tation Loss No.	Total Implantations No.	Corporate Lot No.			
			Fetus		Resorptions No.						
			Viable No.	Nonviable No.							
49902	49952	6/21/79	11	91.7	0	0.0	0	12			
	50003	6/21/79	8	80.0	0	0.0	2	10			
49903	49953	6/21/79	12	92.3	0	0.0	1	13			
	50004	6/21/79	12	100.0	0	0.0	0	12			
49904	49954	6/21/79	10	100.0	0	0.0	0	10			
	50005	6/21/79	10	100.0	0	0.0	0	10			
49905	49955	6/21/79	Monogram	Monogram	Monogram	Monogram	0	10			
	50006	6/21/79	9	25.0	0	1	16.7	12			
49906	49956	6/21/79	8	85.7	0	0.0	1	11.1			
	50007	6/21/79	11	91.7	0	0.0	1	9			
49907	49957	6/21/79	7	77.8	0	0.0	1	12			
	50008	6/21/79	11	73.3	0	0.0	1	17			
49908	49958	6/21/79	12	92.3	0	0.0	1	13			
	50009	6/21/79	11	84.6	0	0.0	2	15.4			
49909	49959	6/21/79	10	100.0	0	0.0	0	11			
	50010	6/21/79	7	77.8	0	0.0	2	10			
49910	49960	6/21/79	11	73.3	0	0.0	4	9			
	50011	6/21/79	14	100.0	0	0.0	4	15			
49911	49961	6/21/79	Monogram	Monogram	Monogram	Monogram	0	14			
	50012	6/21/79	12	100.0	0	0.0	0	12			
Total	-	-	168	-	5	-	18	186			
Mean	-	-	10.5*	-	0.0	-	1.1	11.6			
S.D.	-	-	1.83	-	0.00	-	1.20	1.78			

- Not applicable

S.D. - Standard deviation

*Significantly different from control group, p<0.05

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Technical Glyphosate:

Dominant Lethal Study In Mice

TABLE 4. Cont.

Individual and Group Mean Maternal Observations at Uterine Examination

Dosage Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Matting Week 2			Post Implan- tation Loss No.	Total Implantations No.	Corporate Index No.			
			Resorptions								
			Late No.	Early No.	No.						
800 mg/kg:											
49902	50054	6/28/79	3	87.5	0	0.0	1	12.5			
	50107	6/28/79	10	83.3	0	0.0	2	16.7			
49903	50055	6/28/79	14	100.0	0	0.0	0	13			
	50108	6/28/79	11	100.0	0	0.0	0	17			
49904	50056	6/28/79	11	91.7	0	0.0	0	14			
	50110	6/28/79	9	60.0	0	0.0	0	11			
49905	50058	6/28/79	12	100.0	0	0.0	6	16			
	50112	6/28/79	5	31.4	0	0.0	6	12			
49906	50059	6/28/79	12	100.0	0	0.0	1	12			
	50113	6/28/79	10	90.9	0	0.0	1	16			
49907	50060	6/28/79	10	100.0	0	0.0	1	11			
	50114	6/28/79	11	100.0	0	0.0	0	16			
49908	50061	6/28/79	11	100.0	0	0.0	0	10			
	50115	6/28/79	11	91.7	0	0.0	0	11			
49909	50062	6/28/79	12	100.0	0	0.0	1	12			
	50116	6/28/79	11	100.0	0	0.0	0	12			
49910	50063	6/28/79	11	100.0	0	0.0	0	16			
	50117	6/28/79	11	100.0	0	0.0	0	13			
49911	50064	6/28/79	12	100.0	0	0.0	0	12			
	50119	6/28/79	6	0.0	0	0.0	1	13			
Total	-	-	161	-	0	-	22	236			
Mean	-	-	10.1	-	0.0	-	1.3	11.6			
S.D.	-	-	3.16	-	0.09	-	3.72	1.89			
					1.46	-	1.46	1.49			

It applicable
- Standard deviation

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Technical Glyphosate:

Dominant Lethal Study In Mice
TABLE 4. Cont.
Individual and Group Mean Maternal Observations at Uterine Examination

Dose Level, Mice Number	Female Number	Date of Sacrifice and Uterine Examination	Matrig Week 3		Matrig Week 4		Matrig Week 5		Matrig Week 6		Matrig Week 7	
			Postimplan- tation Loss		Postimplan- tation Loss		Postimplan- tation Loss		Postimplan- tation Loss		Postimplan- tation Loss	
			No.	%	No.	%	No.	%	No.	%	No.	%
800 mg/kg:												
49902	50160	7/5/79	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49903	50113	7/5/79	13	100.0	0	0.0	0	0.0	0	0.0	0	0.0
	50161	7/5/79	14	93.3	0	0.0	0	0.0	1	6.7	1	6.7
	50214	7/5/79	14	100.0	0	0.0	0	0.0	0	0.0	0	0.0
49904	50162	7/5/79	14	100.0	0	0.0	0	0.0	0	0.0	0	0.0
	50215	7/5/79	9	81.6	0	0.0	0	0.0	2	16.7	2	16.7
	50164	7/5/79	12	100.0	0	0.0	0	0.0	0	0.0	0	0.0
	50216	7/5/79	11	91.7	0	0.0	1	8.3	0	0.0	1	8.3
	50165	7/5/79	10	76.9	0	0.0	0	0.0	3	23.1	1	11.1
	50117	7/5/79	9	75.0	0	0.0	0	0.0	3	25.0	3	12.5
	50166	7/5/79	10	90.9	0	0.0	0	0.0	1	9.1	1	9.1
	50218	7/5/79	10	90.9	0	0.0	0	0.0	1	9.1	1	9.1
	50167	7/5/79	10	90.9	0	0.0	0	0.0	1	9.1	1	9.1
	50219	7/5/79	11	91.7	0	0.0	0	0.0	1	8.3	1	8.3
	50168	7/5/79	12	100.0	0	0.0	0	0.0	0	0.0	0	0.0
	50220	7/5/79	7	87.5	0	0.0	0	0.0	1	12.5	1	12.5
	50169	7/5/79	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0
	50221	7/5/79	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0
	50110	7/5/79	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0
	50222	7/5/79	14	93.3	0	0.0	0	0.0	1	6.7	1	6.7
			205	-	0	-	14	-	15	-	270	-
	Total											
	Heart				11.4	-	0.0	-	0.6	-	12.2	-
	S.D.				2.15	-	0.00	-	0.6	-	1.81	-
									0.99	-	1.51	-

— Not applicable
S.D. = Standard Deviation

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Technical Glyphosate:

TABLE 4. Cont. Individual and Group Maternal Observations at Uterine Examination

Dosage Level, Hale Number	Female Number	Date of sacrifice and Uterine Examination	Matting Week 4			Corpora lutea No.	
			Resorptions		Postimplan- tation loss No.		
			Late No.	Early No.			
800 mg/kg:							
49902	50265	7/12/79	Hongray 14	0	0.0	0	
49903	50318	7/12/79	94.1	0	0.0	1	
49904	50266	7/12/79	Hongray 14	13	100.0	0	
49905	50319	7/12/79	10	11.4	0	0	
49906	50267	7/12/79	12	100.0	0	0	
49907	50320	7/12/79	16	63.3	0	0	
49908	50268	7/12/79	14	100.0	0	0	
49909	50321	7/12/79	7	58.3	0	0	
49910	50269	7/12/79	10	90.0	0	0	
49911	50322	7/12/79	16	100.0	0	0	
49912	50323	7/12/79	10	100.0	0	0	
49913	50324	7/12/79	14	100.0	0	0	
49914	50272	7/12/79	4	66.7	0	0	
49915	50325	7/12/79	14	100.0	0	0	
49916	50273	7/12/79	9	63.2	0	0	
49917	50126	7/12/79	11	100.0	0	0	
49918	50274	7/12/79	11	100.0	0	0	
49919	50327	7/12/79	14	91.7	0	0	
Total	-	-	192	-	0	-	
Mean	-	-	14.3	-	0.0	-	
S.D.	-	-	3.10	-	0.00	-	

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Technical Glyphosate:

Dominant Lethal Study in Mice

TABLE 4. Cont.

Individual and Group Mean Maternal Observations at Litterine Examination

Dosage Level, Male Number	Female Number	Date of Sacculi- lation and Gestational Examination	Matting Week 5											
			Pertuses			Receptions			Post Implan- tation Loss			Total Implantations		
			Viable No. I	NonViable No. I	No. II	No. I	No. II	No. III	No. I	No. II	No. III	No. I	No. II	No. III
49902	50369	7/19/79	15	100.0	0	0.0	0	0.0	0	0.0	0.0	0	0.0	0.0
49903	50420	7/19/79	12	100.0	0	0.0	0	0.0	0	0.0	0.0	0	0.0	0.0
49904	50370	7/19/79	12	100.0	0	0.0	0	0.0	0	0.0	0.0	0	0.0	0.0
49905	50421	7/19/79	10	81.3	0	0.0	0	0.0	0	0.0	2	16.7	2	17
49906	50371	7/19/79	13	100.0	0	0.0	0	0.0	0	0.0	0.0	0	0.0	0.0
49907	50422	7/19/79	12	92.3	0	0.0	0	0.0	1	7.7	1	7.7	1	13
49908	50372	7/19/79	12	100.0	0	0.0	0	0.0	0	0.0	0.0	0	0.0	0.0
49909	50423	7/19/79	12	100.0	0	0.0	0	0.0	0	0.0	0.0	0	0.0	0.0
49910	50373	7/19/79	2	11.1	0	0.0	1	16.7	3	50.0	4	66.7	6	7
49911	50424	7/19/79	11	100.0	0	0.0	0	0.0	0	0.0	0.0	0	0.0	0.0
49912	50374	7/19/79	16	100.0	0	0.0	0	0.0	0	0.0	0.0	0	0.0	0.0
49913	50425	7/19/79*	Died - Bravida											
49914	50375	7/19/79	16	100.0	0	0.0	0	0.0	14	100.0	14	100.0	14	14
49915	50426	7/19/79	12	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
49916	50376	7/19/79	8	88.9	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
49917	50427	7/19/79	8	66.7	0	0.0	0	0.0	1	11.1	1	11.1	9	9
49918	50377	7/19/79	8	66.7	0	0.0	1	8.3	3	25.0	4	33.3	7	11
49919	50428	7/19/79	12	92.3	0	0.0	0	0.0	1	11.1	1	11.1	11	11
49920	50378	7/19/79	10	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
Total	-	-	177	-	0	-	2	-	25	-	27	-	106	201
Mean	-	-	10.4	-	0.0	-	0.1	-	1.5	-	1.6	-	12.9	17.2
S.D.	-	-	-	-	4.09	-	0.00	-	3.39	-	3.47	-	2.26	2.11

a Date of death

b Not applicable

c Standard deviation

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Technical Glyphosate:

TABLE 4. Cont.

Individual and Group Mean Maternal Observations at Uterine Examination

Biosentient Lethal Study in Rats

Dose Level, Male Number	Female Number	Date of Sacrifice and Uterine Examination	Matting Week 6		Postimplan- tation Loss No. %		Corporate Letter No.	
			Fetuses		Resorptions			
			Viable No. %	Nonviable No. %	Late No. %	Early No. %		
B00 mg/kg:								
49902	50670	7/26/79	13 100.0	0 0.0	0 0.0	0 0.0	13 0.0	
	50519	7/26/79	11 84.6	0 0.0	0 0.0	2 15.4	11 15.4	
49903	50471	7/26/79	9 100.0	0 0.0	0 0.0	0 0.0	9 0.0	
	50520	7/26/79	Nonresorpt.	0 0.0	0 0.0	0 0.0	0 0.0	
49904	50672	7/26/79	11 91.7	0 0.0	0 0.0	1 8.3	12 8.3	
	50521	7/26/79	9 100.0	0 0.0	0 0.0	0 0.0	9 0.0	
49905	50473	7/26/79	Nonresorpt.	0 0.0	0 0.0	0 0.0	0 0.0	
	50522	7/26/79	16 94.1	0 0.0	1 5.9	0 0.0	1 5.9	
49906	50674	7/26/79	11 91.7	0 0.0	0 0.0	1 8.3	12 8.3	
	50523	7/26/79	10 89.3	0 0.0	0 0.0	2 16.7	12 16.7	
49907	50675	7/26/79	10 98.9	0 0.0	0 0.0	1 9.1	11 9.1	
	50524	7/26/79	14 100.0	0 0.0	0 0.0	0 0.0	14 0.0	
49908	50476	7/26/79	13 92.3	0 0.0	0 0.0	1 7.7	12 7.7	
	50525	7/26/79	11 100.0	0 0.0	0 0.0	0 0.0	13 0.0	
49909	50477	7/26/79	12 100.0	0 0.0	0 0.0	0 0.0	12 0.0	
	50526	7/26/79	10 100.0	0 0.0	0 0.0	0 0.0	10 0.0	
49910	50478	7/26/79	Nonresorpt.	0 0.0	0 0.0	0 0.0	0 0.0	
	50527	7/26/79	11 84.6	0 0.0	0 0.0	2 15.4	12 15.4	
49911	50673	7/26/79	14 93.3	0 0.0	1 6.7	0 0.0	13 6.7	
	50528	7/26/79	8 88.9	0 0.0	0 0.0	1 11.1	9 11.1	
Total	-	-	195 -	0 0.0	2 -	-	207 0.0	
Mean	-	-	11.4 -	0.0	0.1 -	0.4 -	12.2 0.4	
S.D.	-	-	2.09 -	0.00 -	0.33 -	0.79 -	2.16 0.75	

- Not applicable

S.D. - Standard deviation

401-064

CONTAINS TRADE SECRET &
OTHERWISE CONFIDENTIAL
INFORMATION OF MONSANTO