EEB CYs

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

JAN 26 1993

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT:

FROM: Anthony F. Maciorowski, Chief
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

TO: Kathryn Davis, Product Manager Team Reviewer,
Team 51
Special Review and Reregistration Division (H7508W)

This portion of the phase 5 process for iprodione includes 7 study summaries, one of these was previously reviewed MRID No. 404892-04. The review for these 7 studies have been completed (see attached Data Evaluation Reviews). Based on the evaluations the following data gaps still exist:

72-1
- a Acute Fish/Bluegill
- b Acute Fish/Bluegill (TEP)
- c Acute Fish/Rainbow/Trout

72-2
- a Acute Aquatic Invertebrate

72-3
- a Acute Estuarine/Marine Fish
- b Acute Estuarine/Marine Mollusk

Please contact Dennis McLane of EEB if any further information is needed.(305-5096).

L-50 P JAN 26 1993 EEB
2335 IPRODIONE
D. McLane

DP BARCODE: D157154

CASE: 816345
SUBMISSION: S384432

DATA PACKAGE RECORD
BEAN SHEET

DATE: 10/22/90

Phase IV

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: REREGISTRATION ACTION: 603 PHASE 3 INITIAL SUB
CHEMICAL: 109801 3-(3,5-Dichlorophenyl)-N-(1-methylethyl)-2,4-dioxo-1-imidaz
ID#: 109801-000264
COMPANY: 000264 RHONE-POULENC AG COMPANY
PRODUCT MANAGER: 50 JAY ELLENBERGER 703-308-8085 ROOM: CST 4J1
PM TEAM REVIEWER: KATHY DAVIS 703-308-8068 ROOM: CST 4N3
RECEIVED DATE: 05/30/90 DUE OUT DATE: / /

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 157154 EXPEDITE: N DATE SENT: 10/22/90 DATE RET.: / /
DP TYPE: 101 Phase IV Review
ADMIN DUE DATE: 12/31/90 CSF: N LABEL: N

ASSIGNED TO	DATE IN	ASSIGNED TO	DATE IN
DIV : EFED	10/31/90	REVR :	/ /
BRAN: EEB	/ /	CONTR:	/ /
SECT:	/ /		

* * * DATA PACKAGE REVIEW INSTRUCTIONS * * *

For the attached reregistration case, please identify all applicable data requirements and note those for which adaquate data have not been submitted to the Agency.

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH	DATE OUT	DUE BACK	INS	CSF	LABEL
157155	EFGB	10/22/90	12/31/90	Y	N	N
157156	DEB	10/22/90	12/31/90	Y	N	N
157157	TB-HFAS	10/22/90	12/31/90	Y	N	N
157158	NDEB	10/22/90	12/31/90	Y	N	N

Due 4/1/91

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* ECOLOGICAL EFFECTS BRANCH DATA REQUIREMENTS *
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Case No.: 816345 Date: 1-15-93

Biologist Name: Dennis J. McLane Telephone No.: 305-5096

Chemical: Iprodione Chemical No: 109801

Use Patterns: Terrestrial, food crops and Aquatic, food crop

GUIDELINES NO./STUDY TYPE (NR-not required; Y/N; I-in review)	DATA REQUIREMENT FULFILLED	MRIDs/DATES
71-1(a) Acute Avian Oral, Quail/Duck	Y	41604101 1990
71-1(b) Acute Avian Oral, Quail/Duck (TEP)	NR	
71-2(a) Acute Avian Diet/Quail	Y	41604102 1990
71-2(b) Acute Avian Diet/Duck	Y	41604103 1990
71-3 Wild Mammal Toxicity	NR	
71-4(a) Avian Reproduction/Quail	Y	00099126 1981
71-4(b) Avian Reproduction/Duck	Y	00086840 1981
71-5(a) Simulated Terrestrial Field	NR	
71-5(b) Actual Terrestrial Field	NR	
72-1(a) Acute Fish/Bluegill	N	41604104 1990
72-1(b) Acute Fish/Bluegill (TEP)	N[1]	40489203 1987
72-1(c) Acute Fish/Rainbow Trout	N	41604105 1990
72-1(d) Acute Fish/Rainbow Trout(TEP)	NR	

[1] These studies are required for the rice use.

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GUIDELINES NO./STUDY TYPE (NR-not required; Y/N;	DATA REQUIREMENT FULFILLED I-in review)	MRIDs/DATES
72-2(a) Acute Aquatic Invertebrate	N	41642001 1990
72-2(b) Acute Aquatic Invertebrate(TEP)	Y[1]	40489206 1987
72-3(a) Acute Estu/Mari Fish	N[1]	40489205 1987
72-3(b) Acute Estu/Mari Mollusk	N[1]	40489202 1987
72-3(c) Acute Estu/Mari Shrimp	Y[1]	40489204 1987
72-3(d) Acute Estu/Mari Fish(TEP)		
72-3(e) Acute Estu/Mari Mollusk(TEP)		
72-3(f) Acute Estu/Mari Shrimp(TEP)		
72-4(a) Early Life-Stage Fish	Y[1]	40550801 1988
72-4(b) Life-Cycle Aquatic Invertebrate	Y[1]	40832201 1988
72-5 Life-Cycle Fish		
72-6 Aquatic Org. Accumulation		
72-7(a) Simulated Aquatic Field Study		
72-7(b) Actual Aquatic Field Study (Aquatic Residue Monitoring Study)	I	41983601 1991
122-1(a) Seed Germ./Seedling Emerg.		
122-1(b) Vegetative Vigor		
122-2 Aquatic Plant Growth	Y	41604108 1990
123-1(a) Seed Germ./Seedling Emerg.		
123-1(b) Vegetative Vigor		
123-2 Aquatic Growth	Y Y	41604109 1990 41604107 1990
124-1 Terrestrial Field		
124-2 Aquatic Plant Growth		

GUIDELINES NO./STUDY TYPE (NR-not required; Y/N; I-in review)		DATA REQUIREMENT FULFILLED	MRIDs/DATES
141-1	Honey Bee Acute Contact		
141-2	Honey Bee Residue on Foliage		
141-5	Field Test for Pollinators		

[1] These studies are required for the rice use.

DATA EVALUATION RECORD

1. CHEMICAL: Iprodione

2. TEST MATERIAL: Rovral® 50WP to Daphnids

3. STUDY TYPE: 48-hour EC_{50} with *Daphnia magna* under flow-through conditions

4. CITATION:
Study Director: Surprenant, D. C.
Date: January 7, 1988
Title: Acute Toxicity of ROVRAL 50 WP to Daphnids (*Daphnia magna* Under Flow-through Conditions
Laboratory: Springborn Life Sciences, Inc., Wareham, Massachusetts 02571
Report No.: 87-12-2597, SLS #10566.1087.6112.115
Sponsor: Rhone-Poulenc AG Company, P.O. Box 12014, 2 T.W. Alexander Drive, Research Triangle Park, North Carolina, MRID No. 404892-06

5. REVIEWED BY:

Dennis J. McLane, Biologist Dennis McLane 1-14-93
Ecological Effects Branch
Environmental Fate and Effects Division (H7507 C)

6. APPROVED BY:

Les Touart, Section Chief L. Touart 1/22/93
Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507 C)

7. CONCLUSION:

This study fulfills the guidelines. The 48hr EC_{50} is 0.36 (0.34-0.390)mg a.i./L, based on the measured concentration of active ingredient. The NOEC is 0.13 mg a.i./L, based on the measured concentration of active ingredient.

8. MATERIALS AND METHODS:

A. Test Organisms:

Species-*Daphnia magna*

Supplier-Springborn Life Sciences, Wareham, MA.

Age-First instar daphnids (≤ 24 hours old)

Acclimation period-aprox. 3 hours

B. Test System:

Source of dilution water- well water

Water temperature- 20±1°C.

pH- 8.3

Dissolved oxygen- >60%;water was not aerated during the exposure period.

Total hardness- 30-50 mg/l as $CaCO_3$

Total Alkalinity- 20-40 mg/l as $CaCO_3$

Specific conductance- experimental 130 µmhos/cm
- controls 190 µmhos/cm

Total organic carbon-no reported

Test aquaria- 2 L glass battery jars

Type of dilution system- An intermittent-flow serial diluter (Mount and Brungs, 1962)

Flow rate- Approximately 6 volume replacements per vessels every 24 hours

Biomass loading rate-not reported

Photoperiod-16 hours of light and 8 hours of dark
Light Intensity- 22 to 80 footcandles

C. Test Design:

Range finding test-yes

Definitive test

Nominal concentrations- 1.8, 1.1, 0.65, 0.39, 0.23

Measured concentrations- 1.6, 0.9, 0.58, 0.34, 0.13

Controls- One control level no mention was made of a vehicle control

Number of test organisms-80/dose

Biological observations-test initiation, 24, and 48 hours

Water parameter measurements-
See attached Table 1

9. REPORTED RESULTS:

Mean measured concentrations-yes; see attached Table 4

Recovery of chemical-See attached Table 1

Mortality and observations-yes; see attached Table 3

10. STUDY AUTHORS'S CONCLUSIONS / QUALITY ASSURANCE MEASURES:

The 48-hour EC_{50} for *Daphnia* exposed to Rovral® 50WP was 0.36 mg a.i./L with a 95% confidence interval of 0.34-0.39 mg a.i./L. Table 2 summarizes the EC_{50} data. The no observed effect level was 0.13 mg/L.

11. REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:

A. Test Procedure:The following items did not meet the guideline requirements:

1. Dilution factor was 0.5 instead of 0.6.
2. Light intensity was 22-80 not 30-100 footcandles.
3. Water temperature was maintained by a water bath not a temperature controlled room
4. Water quality parameters were measured in one vessel in each test concentration and control not just test concentrations.
5. Total organic carbon was not reported.
6. Biomass loading rate
7. Control specific conductance was 190 µmhos versus the treatment specific conductance which was 130 µmhos.

B. Statistical Analysis:

The EC_{50} was calculated using probit analysis by a computer program (Stephan, Charles. 1977)
The EEB computer program provided the same results when the mean percent data were used. When the actual cumulative number of immobilized organisms is used the EC_{50} changes slightly from 0.36 to 0.37. Based on this the statistical portion of the test is adequate.

C. Discussion/Results:

The items mentioned in A. above are not expected to significantly change the result of the study.

D. Adequacy of the Study:

1. Classification:Core for this formulation of Iprodione

2. Rationale: The intent of the guidelines have been met.

3. Repairability: N/A

12. COMPLETION OF ONE-LINER FOR STUDY:
YES 1-13-93

NOTE: THERE WAS CONTROL MORTALITY, BUT AT LEAST ONE
OF THE LOWER CONCENTRATIONS HAD ZERO MORTALITY.
THEREFORE, ABBOTT'S CORRECTION IS NOT APPLICABLE.

MCLANE IPRODIONE DAPHNIA EC50

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
1.6	100	100	100	0
.9	100	100	100	0
.58	100	98	98	0
.34	100	39	39	0
.13	100	0	0	0

BECAUSE THE NUMBER OF ORGANISMS USED WAS SO LARGE, THE 95 PERCENT CONFIDENCE INTERVALS CALCULATED FROM THE BINOMIAL PROBABILITY ARE UNRELIABLE. USE THE INTERVALS CALCULATED BY THE OTHER TESTS.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS .3681184

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
2	1.027635E-02	.334203	.3129547	.3575589

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
7	6.911413E-02	1	.9999303

SLOPE = 10.07039

95 PERCENT CONFIDENCE LIMITS = 7.42293 AND 12.71785

LC50 = .3624449

95 PERCENT CONFIDENCE LIMITS = .3426595 AND .3820711

LC10 = .2711001

95 PERCENT CONFIDENCE LIMITS = .2387815 AND .2938024

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NOTE: THERE WAS CONTROL MORTALITY, BUT AT LEAST ONE
OF THE LOWER CONCENTRATIONS HAD ZERO MORTALITY.
THEREFORE, ABBOTT'S CORRECTION IS NOT APPLICABLE.

MCLANE IPRODIONE DAPHNIA EC50

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
1.6	80	80	100	0
.9	80	80	100	0
.58	80	78	97.5	0
.34	80	28	35	0
.13	80	0	0	0

BECAUSE THE NUMBER OF ORGANISMS USED WAS SO LARGE, THE 95 PERCENT CONFIDENCE INTERVALS CALCULATED FROM THE BINOMIAL PROBABILITY ARE UNRELIABLE. USE THE INTERVALS CALCULATED BY THE OTHER TESTS.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS .3779032

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
2	.0133004	.3436414	.3188608	.3715227

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
7	7.525406E-02	1	.9999292

SLOPE = 10.12451
95 PERCENT CONFIDENCE LIMITS = 7.347104 AND 12.90191

LC50 = .3711663
95 PERCENT CONFIDENCE LIMITS = .3490812 AND .3937789

LC10 = .2780548
95 PERCENT CONFIDENCE LIMITS = .2435277 AND .3022305

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