EEB files

DP Barcode : D205866
PC Code No : 109801
EEB Out : 9/8/94

To: Rebecca Cool
Product Manager 41
Registration Division (7505C)

From: Anthony F. Maciorowski, Chief
Ecological Effects Branch/EFED (7507C)

Attached, please find the EEB review of...

Reg./File # : 94GA0005
Chemical Name : Iprodione
Type Product : fungicide
Product Name : Rovral
Company Name :
Purpose : Review Sec. 18 request for use as seed treatment.

Action Code: 510 Date Due: 8/14/94
Reviewer: Dennis McLane

EEB Guideline/MRID Summary Table: The review in this package contains an evaluation of the following:

| NO | D NO | | N NO | D NO | | N NO | NO | T |
|---|---|---|---|---|---|---|---|---|
| 71-1(A) | | | 72-2(A) | | | 72-7(A) | | |
| 71-1(B) | | | 72-2(B) | | | 72-7(B) | | |
| 71-2(A) | | | 72-3(A) | | | 122-1(A) | | |
| 71-2(B) | | | 72-3(B) | | | 122-1(B) | | |
| 71-3 | | | 72-3(C) | | | 122-2 | | |
| 71-4(A) | | | 72-3(D) | | | 123-1(A) | | |
| 71-4(B) | | | 72-3(E) | | | 123-1(B) | | |
| 71-5(A) | | | 72-3(F) | | | 123-2 | | |
| 71-5(B) | | | 72-4(A) | | | 124-1 | | |
| 72-1(A) | | | 72-4(B) | | | 124-2 | | |
| 72-1(B) | | | 72-5 | | | 141-1 | | |
| 72-1(C) | | | 72-6 | | | 141-2 | | |
| 72-1(D) | | | | | | 141-5 | | |

Y=Acceptable (Study satisfied Guideline)/Concur
P=Partial (Study partially fulfilled Guideline but additional information is needed
S=Supplemental (Study provided useful information but Guideline was not satisfied)
N=Unacceptable (Study was rejected)/Nonconcur

DP BARCODE: D205866

CASE: 285868 DATA PACKAGE RECORD DATE: 07/25/94
SUBMISSION: S470225 BEAN SHEET Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: EMERGENCY EXEMP ACTION: 510 SEC18-OC F/F USE
RANKING : 75 POINTS (A)
CHEMICALS: 109801 Iprodione (ANSI) %

ID#: 94GA0005
COMPANY:
PRODUCT MANAGER: 41 REBECCA COOL 703-308-8417 ROOM: CS1
PM TEAM REVIEWER: LIBBY PEMBERTON 703-308-8326 ROOM: CS1
RECEIVED DATE: 07/20/94 DUE OUT DATE: 09/08/94

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 205866 EXPEDITE: N DATE SENT: 07/25/94 DATE RET.: / /
CHEMICAL: 109801 Iprodione (ANSI)
DP TYPE: 001 Submission Related Data Package
CSF: N LABEL: Y

| ASSIGNED TO | DATE IN | DATE OUT |
|---|---|---|
| DIV : EFED | 7/28/94 | / / |
| BRAN: EEB | 07/28/94 | / / |
| SECT: | / / | / / |
| REVR : | / / | / / |
| CONTR: | / / | / / |

ADMIN DUE DATE: 08/14/94
NEGOT DATE: / /
PROJ DATE: / /

* * * DATA REVIEW INSTRUCTIONS * * *

Does EEB have any concerns with this seed treatment?

* * * DATA PACKAGE EVALUATION * * *

No evaluation is written for this data package

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

| DP BC | BRANCH/SECTION | DATE OUT | DUE BACK | INS | CSF | LABEL |
|---|---|---|---|---|---|---|
| 205860 | BAB | 07/25/94 | 08/14/94 | Y | N | Y |
| 205861 | EAB | 07/25/94 | 08/14/94 | Y | N | Y |
| 205862 | TSCB | 07/25/94 | 08/14/94 | Y | N | Y |
| 205863 | TB-2 | 07/25/94 | 08/14/94 | Y | N | Y |
| 205865 | OREB | 07/25/94 | 08/14/94 | Y | N | Y |

EEB Review

Chemical: Iprodione
Products: Rovral 4 and Rovral 50WP

100.0 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

Section 18 exemption petition for the use of Rovral 4 and Rovral 50WP (iprodione) for control of *Alternaria brassicola)* on canola seed. The amount of seed to be treated will be used on approximately 35,000 acres. 3,500 50 lb. bags of seed will be treated. Total of 536 lbs. of active ingredient (1,052 of product).

100.2 Formulation Information
(Excerpted from the label)

Rovral 50
Active ingredient:
Iprodione: 3-(3,5-dichlorophenyl)-N-(1-methylethyl)-2,4-dioxo-1-imidazolidinecarboxamide.....50.0%
Inert Ingredients:.....50.0%

100.3 Application Methods, Directions, Rates
(Excerpted from the Section 18 Application)

"DESCRIPTION OF CONTROL PROGRAM

"A single application of iprodione would be applied at a rate of 3.0 grams of active ingredient per kilogram of seed. the application would be made with standard seed treatment equipment.

"Enough material is requested un the terms of this exemption to treat 3,500 bags of seed. Each bag of seed weighs 50 lbs. Total quantity requested is 526 pounds of active ingredient."

100.4 Precautionary Statements
(Section 18 Label)

| | |
|---|---|
| Product: | ROVAL® 50WP, EPA REG. NO.264-453 |
| Location: | Georgia |
| Crop/Site/Commodity: | Canola Seed (Rape) |
| Target Pest/Problem: | Alternaria spp. |
| Dosage: | 6.0 gram/Kg seed (3.0grams AI/Kg seed) |
| Method of Application: | Thoroughly mix ROVAL® 50WP into the required volume of water for slurry treatment equipment and dilution rate used. Thorough and uniform seed coverage is required. |
| Frequency/Timing of Application: | Single application prior to planting |
| Use Restrictions: | Do not use treated seed for feed, food or oil processing. Do not apply directly to water or wetlands. Do not contaminate water when disposing of equipment. |

(Rovral 50WP label)

**ENVIRONMENTAL HAZARDS**

This pesticide is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high waster mark. Do not contaminate water when disposing of equipment washwaters. Drift or run-off from treated areas are hazardous to aquatic invertebrates in neighboring areas.

101.0 Hazard Assessment

101.1 Discussion

This is a Section 18 application for Rovral 50WP to control in canola seed. Georgia's Department of Agriculture has requested the use of this product to treat canola seed to prevent *Alternaria brassicicola*. *Alternaria* spp.is a seed-borne fungal pathogen which when the seed germinates infects the growing cotyledon. "The infection may take as long a 7-10 days before the

seedling displays significant infection and/or death" (Amer-can correspondence dated 9/11/91).

101.2 Likelihood of Adverse Effects on Nontarget Organisms

Terrestrial Organism Toxicity

The following is a listing of the iprodione terrestrial toxicity data:

Table 1. Avian Toxicity Data

| $LD_{50}$ mg/kg | $LC_{50}$ ppm | Avian Reproduction(ppm) |
|---|---|---|
| Bobwhite Quail 930<br>Mallard 10,400 | Bobwhite 9200<br>Mallard Duck >20,000 | Bobwhite>114<br>Bobwhite>300<br>Mallard >300 |
| Rat 1170 | | |

Terrestrial Risk Quotients

Because this is a seed treatment the risk to birds is much like the risk from granular pesticides the most appropriate risk quotient is the number of $LD_{50}$ per square foot. The following is the method for calculating this quotient:

Assumptions and Information:

1. 35,000 acres to treat
2. 526 lbs. of active ingredient to be applied
3. 43,560 $ft^2/A$
4. 453,590 mg/lb
5. 526 lbs/35,000 A = 0.015 lbs/A or application rate
6. Lowest $LD_{50}$ is 930 ppm

$LD_{50}/ft^2$

Active ingredient (mg)/$ft^2$ = 0.156

= 0.015 lbs. a.i. A x 453590 mg/lb/43560 $ft^2/A$.

Exposed active ingredient/$ft^2$ = 0.00156 mg/$ft^2$

= 0.156 mg/$ft^2$ x 1% (Unincorporated)

$LD_{50}/ft^2$ = 0.000095

= 0.00156 mg/$ft^2$ / (930 mg/kg $LD_{50}$ x 0.178 kg weight of bird)

Aquatic Organism Toxicity

$LC_{50}$'s, MATC's, and Risk Quotients

The following table reports the toxic values for aquatic organisms and acute risk quotients:

Table 3. Aquatic Toxicity Data and Risk Quotients

| Fresh-water (Species/ $LC_{50}$ppb) | Risk Quotient EEC/½$LC_{50}$ | | Marine $LC_{50}$ (ppb) | Risk Quotient EEC/½$LC_{50}$ | | Chronic MATC (ppm) |
|---|---|---|---|---|---|---|
| | 6' pond | 6" pond | | 6' pond | 6" pond | |
| Channel Catfish 2630 | 0.00 | 0.00 | Oyster 2300 | 0.00 | 0.01 | Fathead minnow life cycle >0.26 & <0.55 |
| Rainbow Trout 4200 | 0.00 | 0.01 | Mysid 680 | 0.00 | 0.03 | Daphnia magna life cycle >0.17 & <0.33 |
| Channel Catfish 3100 | 0.00 | 0.01 | Sheep-head Minnow $LC_{50}$ 7700 | 0.00 | 0.00 | Mysid life cycle >0.0035 & <0.0075 |
| Daphnia magna 430 | 0.00 | 0.05 | | | | |
| Crayfish (juvenile) 4400 | 0.00 | 0.01 | | | | |

EEC Calculations:

Assumption and Information

1. Pond size = 1 A. surface
2. Pond drainage basin = 10 A.
3. 1 pound direct application = 61 ppb in 6" pond
4. Application rate: 0.015 lbs/A

Ground Application

Runoff only

0.015 lb a.i./A * 0.02 * 10A = 0.0.10 lb
(Application Rate) (2% Runoff) (Drainage Basin)

Therefore, EEC runoff = 61 ppb in 6' pond * 0.015 lb = **0.183** ppb a.i.

EEC direct application 734 ppb in 6" pond * 0.015 lb = **11.01** ppb a.i.

Aquatic Plant Toxicity and Risk Quotients

Table 4. Plant Toxicity

| Species | Results | Risk Quotient (EEC/½$EC_{50}$)/ (EEC/1/20$^{th}LC_{50}$) |
|---|---|---|
| *Skeletonema costatum* | 120 hour $EC_{50}$ 0.226 mg a.i./L | 6' deep pond 0.001619 & 0.016 |
| | | 6" deep pond 0.097 & 0.97 |
| *Selenastrum capricornutum* | $EC_{50}$ >0.13 mg a.i./L | |
| *Anabena flos-aquae* | Invalid | |
| *Lemma gibba* | Growth & Reproduction Minimal Effects 1.01 mg a.i./L | |
| *Navicula pelliculosa* | Invalid | |

101.3 Hazard Assessment

Terrestrial Organisms

Birds and Mammals

Minimal risk is expected for birds and mammals. The risk quotients in Table 2. above indicate that iprodione is not expected to exceed the criteria 1/5 the $LC_{50}$ for restricted. Also the avian reproduction study showed no effects up to 300 ppm and at the highest application rate only 120 ppm is expected. Based on this minimal risk is expected to avian species.

Mammals $LC_{50}$ is 1170 mg/kg. The estimated is 1915 ppm. Based on the following formula:

$$LC_{50} = \frac{LD_{50} \times \text{Animal Weight}}{\text{Food Consumption/Day}}$$

$$LC_{50} = \frac{1170 \text{ mg/kg} \times \text{Meadow Vole 46 grams}}{28.1 \text{ grams/day}}$$

$$LC_{50} = 1915 \text{ ppm}$$

$$1/5^{th}\ LC_{50} = 383 \text{ ppm}$$

$$1/20^{th} LC_{50} = 95.75 \text{ ppm}$$

This value is significantly lower than the 9200 ppm value for the bobwhite quail. Hence, $EEC/1/5^{th} LC_{50}$ is 0.26 and the $EEC/1/20^{th}$ $LC_{50}$ is (short range grass concentration is 120 ppm @ ½lb/A - 120 ppm/95.75) 1.25.

Based on the these risk ratios minimal hazard is expected for birds.

Aquatic Species

Minimal acute risk is expected for aquatic organisms. The risk quotients in Table 3. above indicate that iprodione is not expected to exceed $\frac{1}{2}LC_{50}$ of any of the indicator species in the 6 foot deep pond scenario. Based on this acute risk is expected to be minimal for aquatic species.

Chronic risk is not expected for freshwater or salt water species. The two freshwater species tested the fathead minnow and *Daphnia magna* provide MATC's of >260 - <550 ppb and >170 - <330 ppb, respectively. The mysid 28 day lifecycle MATC is >3.5 - <7.5 ppb. The expected initial concentration of 11.01 ppb for the 6" pond. However, due to type of application direct application to a 6" deep saltwater pond is not likely.

Aquatic Plants

Based on the above (Table 4.) calculations iprodione does not exceed the risk quotient (>1) which indicates that both

exposure and toxicity are not sufficient to cause adverse effects. The lowest toxicity value is the *Selenastrum capricornutum* $EC_{50}$ >.13 mg/kg. The highest concentration expected is 0.01101 mg/L. Therefore, adverse effects are not expected to plant species.

101.4 Endangered Species Considerations

Iprodione does not exceeds the endangered species screening criteria of 1/10th LD50 for avian or mammalian species and 1/20th the LC50 for aquatic species in the 6 foot pond scenario. Direct application to ponds is expected in the seed planting process.

101.5 Adequacy of Toxicity Data

The available toxic was sufficient for this situation.

104 Conclusions

EEB has reviewed the proposed Section 18 for use on canola seed to prevent *Alternaria brassicicola* fungal infection in the state of Georgia. Minimal risk is expected to all nontarget organisms including endangered species.

Dennis J. McLane, Wildlife Biologist Date: 8-30-94
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Les Touart, Section Chief Date: 9-2-94
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Anthony F. Maciorowski, Chief Date: 9/6/94
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)