D171748
DP BARCODE (RECORD)

113501
SHAUGHNESSEY NO.

REVIEW NUMBER

ECOLOGICAL EFFECTS BRANCH REVIEW

DATE: IN 12-4-91 OUT 9/30/92

CASE #: 047624 REREG CASE #: LIST A, B, C, D
SUBMISSION #: S407591 ID #: 100-607

DATE OF SUBMISSION 9-18-91

DATE RECEIVED BY EFED 12-3-91

SRRD/RD REQUESTED COMPLETION DATE 3-26-92

EEB ESTIMATED COMPLETION DATE 3-26-92

SRRD/RD ACTION CODE/TYOE OF REVIEW 33=NEW FFOD USE AMEND.

MRID #(S)

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DP TYPE 001 SUBMISSION RELATED DATA PACKAGE

PRODUCT MANAGER, NO. SUSAN LEWIS, 21

PRODUCT NAME(S) RIDOMIL-2E

TYPE PRODUCT: I, D, H, F, N, R, S FUNGICIDE

COMPANY NAME CIBA-GEIGY

SUBMISSION PURPOSE ADD USE ON GINSENG

INCLUDE USE(S)

COMMON CHEMICAL NAME METALAXYL
Chemical: Ridomil 2E

Submission Purpose and Label Information

Submission Purpose and Pesticide Use
Ciba-Geigy Corporation has requested an amendment to the label of Metalaxyl: Ridomil 2E to include the use of, and the directions for application to, Ginseng.

Formulation Information (taken from label):

Active Ingredient: Metalaxyl: N-((2,6-dimethylphenyl)N-(methoxyacetyl) alanine methyl ester ............. 25.1%

Inert Ingredients: ..................................... 74.9%

Application Rate, Method, Directions

Application Rate and Directions

Ridomil 2E is usually used in conjunction, and supplemented, with Ridomil 5G. The application method is as follows: Apply Ridomil 2E at 3 pts per acre as a drench in 100-400 gallons of water uniformly to the soil surface in the spring before the plants begin growing. Apply metalaxyl 2E or 5G at .75 lb. a.i./A. Make additional applications of metalaxyl 5G only at monthly intervals at .5 lb a.i./A. Up to four supplemental applications may be made. The last application of metalaxyl 5G may be made at .75 lb. a.i./A. Note: to avoid illegal residues, (1) do not apply more than a total of three lbs. a.i. of metalaxyl 2E or 5G per acre of ginseng per growing season, and (2) do not harvest ginseng within nine days of a metalaxyl application. (3) Do not use metalaxyl 2E for any of the supplemental applications.

Application Method

Ridomil 2E is applied to the soil before early spring growth followed by applications of Ridomil 5G.

Target Organism: Ridomil 2E is applied to control Phytophthora root rot in ginseng caused by Phytophthora cactorum.

Precautionary Labeling

"Hazards to Humans and Domestic Animals.

Do not apply directly to water or wetlands (swamps, bogs,
marshes, and potholes). Apply only as specified on this label. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment wash waters."

101 Hazard Assessment

101.1 Discussion

Ridomil 2E is a liquid systemic fungicide that is currently registered for the control of Phytophthora and Pythium diseases of avocados, citrus, cotton, head lettuce, nonbearing deciduous fruits and nuts, peanuts, raspberries, soybeans, spinach, sugar beets and tomatoes. August 28, 1991 the EPA proposed a tolerance on ginseng at 3.0 ppm. Ciba-Geigy is now requesting amended registration of Ridomil 2E and 5G fungicides to add the use on ginseng.

Ginseng is grown mainly in Wisconsin; minor growth occurs in North Carolina and Virginia. The following counties in Wisconsin grow ginseng:

<table>
<thead>
<tr>
<th>Adams</th>
<th>Oconio</th>
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</thead>
<tbody>
<tr>
<td>Barron</td>
<td>Oneida</td>
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<tr>
<td>Buffalo</td>
<td>Outagamic</td>
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<tr>
<td>Chippewa</td>
<td>Pepin</td>
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<tr>
<td>Clark</td>
<td>Portage</td>
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<tr>
<td>Columbia</td>
<td>Price</td>
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<tr>
<td>Crawford</td>
<td>Racine</td>
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<tr>
<td>Duce</td>
<td>Rock</td>
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<td>Douglas</td>
<td>Rusk</td>
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<td>Dunn</td>
<td>St. Croix</td>
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<tr>
<td>Eau Claire</td>
<td>Sauk</td>
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<td>Fond du Lae</td>
<td>Sawyer</td>
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<tr>
<td>Forest</td>
<td>Shawano</td>
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<td>Green Lake</td>
<td>Sheboygan</td>
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<td>Iowa</td>
<td>Taylor</td>
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<td>Jackson</td>
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<td>Jefferson</td>
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<td>Juneau</td>
<td>Vilas</td>
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<td>La Fayette</td>
<td>Walworth</td>
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<td>Langlade</td>
<td>Washburn</td>
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<tr>
<td>Lincoln</td>
<td>Washington</td>
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<tr>
<td>Manitowic</td>
<td>Waukesha</td>
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<tr>
<td>Marathon</td>
<td>Waupaca</td>
</tr>
<tr>
<td>Marinette</td>
<td>Waushara</td>
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<tr>
<td>Marquette</td>
<td>Wood</td>
</tr>
<tr>
<td>Monroe</td>
<td></td>
</tr>
</tbody>
</table>
Likelihood of Adverse Effects to Non-target Organisms

The Estimated Environmental Concentrations (EEC) for Ridomil 2E at a rate of .75 lbs. a.i./A are as follows:

Un-incorporated ground application
6 foot water = .0046 ppm
6 inch water = .0551 ppm

Ridomil 5G and Ridomil 2E at a rate of .75 lbs. a.i./A each, applied together at initial application:

Un-incorporated ground application
6 foot water = .0092 ppm
6 inch water = .1101 ppm

Terrestrial

The following data was taken from previous EEB reviews:

- Mallard
  - LD50 = 1466 \text{mgkg}^{-1} \\
- Mallard
  - LC50 = >10,000 ppm \\
- Bobwhite
  - LC50 = >10,000 ppm \\
- Rat
  - LD50 = 669 \text{mgkg}^{-1} \\
- Rabbit Dermal
  - LD50 = >6000 ppm

Based on LD50, LC50 and EEC values it is not believed that non-target terrestrial organisms will be at risk due to the proposed use of Ridomil 2E on ginseng.

Aquatic

Data from previous EEB reviews found the following:

- Rainbow trout
  - LC50 = >100 ppm \\
- Bluegill sunfish
  - LC50 = >100 ppm \\
- Daphnia magna
  - LC50 = 28 ppm

Based on the LC50 and EEC values it is not believed that non-target aquatic organisms will be at risk due to the proposed use of Ridomil 2E on ginseng.

Endangered Species Considerations

The proposed use does not raise any endangered/threatened species concerns.

Adequacy of the Toxicity Data

The existing data was adequate to assess hazards to nontarget species for this proposed use.
Adequacy of Labeling

Wetlands environmental hazard statement must be included on the label: "Do not apply directly to water, areas where surface water is present or to intertidal areas below the mean high water mark."

Conclusions

EEB has reviewed the proposed use of Ridomil 2E on ginseng. Based on the data and label information, it is believed that there will be no unnecessary risk to non-target organisms due to the proposed use.

Dana Lateulere, Biologist  
EEB/EFED/OPP  
Date: 7/2/92

Ann Stavola, Section Head  
EEB/EFED/OPP  
Date: 9/25/92

Doug Urban, Acting Branch Chief  
EEB/EFED/OPP  
Date: 9/29/92
SECTION B

AMOUNT, TIMING AND FREQUENCY OF APPLICATION OF THE
PESTICIDE METALAXYL TO GINSENG

General Information
Metalaxyl is a systemic fungicide for use on selected crops to
control certain diseases caused by members of the Oomycete class
of fungi. Other fungicides must be used to control diseases
incited by other classes of fungi.

Ginseng
Metalaxyl applied to the soil before early spring growth
followed by additional applications at monthly intervals will
control Phytophthora root rot in ginseng caused by Phytophthora
cactorum.

Apply metalaxyl 2E or 5G at 0.75 lb. a.i./A uniformly to the
soil surface in the spring before the plants begin growing.
Make additional applications of metalaxyl 5G only at monthly
intervals at 0.5 lb. a.i./A. Up to four supplemental
applications may be made. The last application of metalaxyl 5G
may be made at 0.75 lb. a.i./A.

Notes: To avoid possible illegal residues, (1) Do not apply
more than a total of three lbs. a.i. of metalaxyl 2E or 5G/A of
ginseng/growing season, and (2) Do not harvest ginseng within
nine days of a metalaxyl application. (3) Do not use metalaxyl
2E for any of the supplemental applications.

Rotational Crops

<table>
<thead>
<tr>
<th>Rotation Crop</th>
<th>Planting Time From Metalaxyl Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ginseng</td>
<td>0 days</td>
</tr>
</tbody>
</table>

October 29, 1990
Revised March 8, 1991
EEC Calculation Sheet

I. Un-incorporated ground application.

Runoff

\[
\frac{150 \text{ lb(s)}}{\% \text{runoff}} \times 10 \text{A} = \frac{15 \text{ lb(s)}}{(\text{from } 10 \text{A drainage basin})}
\]

EEC of 1 lb. a.i. direct application to 1A pond 6-foot deep = 61 ppb,

Therefore, EEC = 61 ppb \times \frac{\text{15 lb}}{\% \text{lb} \text{ ppb}} = \frac{9.15 - 6}{734 \text{ppb} \times \frac{15 \text{ lb}}{\% \text{lb}}} = \frac{110.1 \text{ ppb}}{-6''}

II. For incorporated ground application

Runoff

\[
\frac{\text{lb(s)}}{\% \text{runoff}} \times 0.0 \times 10 \text{A} = \frac{\text{lb(s)}}{\text{incorp.}}
\]

Therefore, EEC = 61 ppb \times \frac{\text{lb(s)}}{\% \text{lb} \text{ ppb}}

III. For aerial application (or mist blower).

A. Runoff

\[
\frac{\text{lb(s)}}{\% \text{runoff}} \times 0.6 \times 0.0 \times 10 \text{ A} = \frac{\text{lb(s)}}{(\text{tot. runoff})}
\]

B. Drift

\[
\text{lb(s)} \times 0.05 = \frac{\text{lb(s)}}{\% \text{drift}}
\]

\[
\text{Tot. loading} = \frac{\text{lb(s)}}{(\text{total runoff})} + \frac{\text{lb(s)}}{(\text{total drift})} = \frac{\text{lb(s)}}{(\text{total})}
\]

Therefore, EEC = 61 ppb \times \frac{\text{lb(s)}}{\% \text{lb} \text{ ppb}} = \frac{\text{ppb}}{= \text{ppb}}
EEC Calculation Sheet

I. Un-incorporated ground application.

Runoff
\[ \frac{0.25 \text{ lb(s)}}{A} \times 0.01 \times 10A = 0.25 \text{ lb(s)} \]
(from 10A drainage basin)

EEC of 1 lb. a.i. direct application to 1A pond 6-foot deep = 61 ppb,

Therefore, EEC = 61 ppb \times \frac{0.75}{734 \text{ ppb}} = \frac{4.5}{5.5} \rightarrow 6^1 \text{ ppb} \rightarrow 6''

II. For incorporated ground application

Runoff
\[ \frac{\text{lb(s)}}{\text{incorp.}} \times 0.0 \times 10A = \text{lb(s)} \]

Therefore, EEC = 61 ppb \times \text{__lb(s)} = \text{ppb}

III. For aerial application (or mist blower).

A. Runoff

\[ \text{lb(s)} \times 0.6 \times 0.0 \times 10 \text{ A} = \text{lb(s)} \]
(appl. \text{($\%$ runoff) (basin) (tot. efficiency) (tot. runoff)}}

B. Drift

\[ \text{lb(s)} \times 0.05 = \text{lb(s) total drift} \]
(5% drift)

Tot. loading = \text{lb(s) + lb(s) = lb(s)}
(total (total runoff) (drift)

Therefore, EEC = 61 ppb \times \text{__lb(s)} = \text{ppb}