4/15/92

ECOLOGICAL EFFECTS BRANCH

Chemical Name: Metalaxyl; Ridomil

100.0 Purpose of Submission

The State of New Jersey Department of Environmental Protection and Energy (NJDEPE) has submitted a request for a Section 18 Specific Exemption for the emergency use of Ridomil 2E (EPA Reg. No. 100-607) and Ridomil 5G (Epa Reg. No. 100-628) to control the fungal pathogen Phytophthora cinnamomi in cranberries.

100.1 Application Rates/ Directions/ Methods

Ridomil 2E can be applied at a maximum rate of 0.875 gal. of product/acre (1.75 lbs. ai/Acre) while Ridomil 5G can be applied at a maximum rate of 35 lbs. of product/acre. No more than 3 applications per acre per season can be made with either product.

Use directions call for the product to be applied as a broadcast treatment by sprinkler, ground equipment or helicopter. The first application can be made in late April or early May, the second 60-90 days later and the third soon after harvest in the fall.

100.2 Scope of Program

The NJDEPE estimates that 280 acres in Burlington county and 20 acres Ocean county will require treatment (See attached Map).

101.0 Toxicity

101.1 Avian Species

The acute oral LD50 of metalaxyl to the mallard duck is 1,466 mg/kg. while the subacute dietary LC50 value to the mallard and bobwhite quail are greater than 10,000 ppm. Based upon these data, Metalaxyl has been characterized as being practically non-toxic to avian species.

101.2 Aquatic Invertebrates

The 48-hour LC50 for Metalaxyl to Daphnia magna is 28 ppm while the 48-hr LC50 for the formulated product (Ridomil 2-5G) is 12.5 ppm. Based on these data Metalaxyl can be characterized as being slightly toxic to freshwater aquatic invertebrates.

101.3 Freshwater Fish

The lowest 96-hour LC50 values for the bluegill sunfish

and rainbow trout are 139 and 130 ppm, respectively. Based on these data, Metalaxyl can be characterized as being practically non-toxic to freshwater fish.

The 96-hour EC50 values of Ridomil 2E-G (27.9% a.i.) to the bluegill sunfish and rainbow trout are 27 and 18.4 ppm, respectively. Based on these data, the formulated product can be characterized as being slightly toxic to freshwater fish.

The chronic value of Metalaxyl for a fathead minnow early life stage test was found to be greater than 9.1 ppm.

101.4 Mammals

The lowest acute oral LD50 value for the rat is 669 mg/kg.

101.5 Plants

Phytotoxicity studies on green alga and duckweed indicate no detrimental effect on aquatic plant species.

102.0 Estimated Environmental Concentrations

102.1 Aquatic Exposure

Direct application - 6" layer of water

The EEC in a 6 inch layer of water from the direct application of Ridomil 2E at 1.75 lbs. a.i./Acre is 1,280 ppb (Dewitt Nomograph).

Drift - 6" layer of water

The EEC in a 6 inch layer of water from spray drift (Ridomil 2E formulation) is calculated to be 1.75 lbs. a.i./a X 0.05 (% drift) = 0.0875 lbs. a.i./A = 64.2 ppb (Dewitt Nomograph).

Runoff- 6" layer of water

The EEC in a 6 inch layer of water from runoff of Ridomil 2E is calculated to be 1.75 lbs. a.i./A X 0.6 X 0.02 (% runoff) X 10 acre drainage = 0.21 lbs. a.i.= 153.6 ppb (Dewitt Nomograph).

Total Loading

The total loading from drift and runoff to a 1 acre pond with an average depth of 6 feet equals: 0.0875 lbs. a.i/A (drift) + 0.21 lbs. a.i./A (runoff) = 0.298 lbs. a.i./A (total loading) = 18.2 ppb (Dewitt Nomograph).

102.0 Terrestrial Exposure

102.1 Ridomil 2E

Foliage

The maximum residues (ppms) expected to occur on vegetation immediately following one application of 1.75 lbs. a.i. Ridomil 2E/A are as follows:

Short rangegrass.....420
Long Grass.....192
Leaves and leafy crops.....227
Forage)alfalfa, clover).....105
Pods containing seeds.....21
Fruits.....12

Soil Surface

Direct application of 1.75 lbs. ai/A will result in an EEC on the soil surface (0.1 inch) of 38.5 ppm (Dewitt Nomograph).

102.2 Ridomil 5G

The maximum residues per square foot from the broadcast application of Ridomil 5G at 1.75 lbs. a.i./acre/43,560 sq. ft. /A = 0.00004 lbs. ai/sq. ft. X 454,000 mg/lb.= 18.2 mg/sq. ft.

103.0 Hazard Assessment

103.1 Terrestrial

Ridomil 2E

Under the worst case exposure scenario the EECs on short rangegrass (i.e., 420 ppm) are less than 1/5 of the dietary LC50 value for the bobwhite quail and mallard duck (> 10,000 ppm). Therefore, the proposed program does not pose any unacceptable risk to terrestrial wildlife.

Ridomil 5G

The maximum amount of toxicant per square foot from the proposed program is calculated to be 18.2 mg. This is equivalent to 0.012 LD50s/ sq. ft. for the mallard duck (18.2/1466=0.012) and 0.027 LD50s for the rat (18.2/669=0.027) and will not pose any unacceptable risk to terrestrial wildlife.

104.0 Aquatic

The highest EEC expected to occur (1,280 ppb or 1.28 ppm) is from the direct application of Ridomil 2E in a 6 inch layer of water. Because this value is less than 1/2 the lowest LC50 value for a fish species (130/2 = 65 ppm) and an aquatic invertebrate (12.5 ppm/2 = 6.25 ppm) the program will not pose any unacceptable risk to aquatic species provided all label restrictions and precautions are strictly followed.

105.0 Endangered Species

The proposed program will not result in a "take" for any endangered species in Burlington or Ocean counties.

106.0 Adequacy of Labeling

A supplemental label was not provided with the submission. However, the package did specify that all label directions/restrictions/precautions that currently apply to other registered uses of Ridomil 2E and 5G will be incorporated into this program. As such, the EEB believes that the labeling is adequate to insure that no unacceptable risks will occur to the environment from the proposed program.

107.0 Conclusions

The EEB has completed a hazard assessment for the proposed Section 18 Specific Exemption for the emergency use of Ridomil 2E and 5G to control vine rot in cranberries in New Jersey. Based upon the available toxicity data and EECs, the EEB concludes that the proposed program will not cause any unacceptable risk to terrestrial or aquatic organisms provided all label directions/restrictions/ and precautions are strictly followed.

4/15/92
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Figure 1. **State Map**