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EEB REVIEW

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DATA ACCESSION NO(S). _____

PRODUCT MANAGER NO. _____ L. Rossi (21) _____

PRODUCT NAME(S) _____ Metalaxyl Products _____

COMPANY NAME _____ CIBA-GEIGY _____

SUBMISSION PURPOSE _Proposed registration of use on alfalfa_

_____

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_____

SHAUGHNESSEY NO.	CHEMICAL AND FORMULATION	% A.I.
	Metalaxyl	

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ECOLOGICAL EFFECTS BRANCH REVIEW

100.1 SUBMISSION PURPOSE AND PESTICIDE USE

CIBA-GEIGY requests a Section 3 registration for the use of Ridomil (metalaxyl) on alfalfa.

100.2 FORMULATION INFORMATION (excerpted from label)

CIBA-GEIGY Corporation Ridomil 2E Fungicide (EPA Reg. No. 100-607)

> Metalaxyl [N-(2.6-dimethylphenyl)-N-(methoxyacetyl) alanine methyl ester 25.1%
>
> Inerts 74.9%

100.3 APPLICATION METHODS, DIRECTIONS, RATES (excerpted from submission request)

Ridomil 2E will be applied as a broadcast spray at the time during planting at a maximum rate of one lb. (four pints formulated product) /A. If alfalfa seed was previously treated with metalaxyl as a seed dressing, an application of Ridomil 2E at one pint/A is recommended at the time of planting. Otherwise, a rate of two to four pints/A is recommended. The higher rates should be used in areas where disease pressure is expected to be heavy.

100.4 TARGET ORGANISMS

Damping-off (Phthium spp.)
Root rots (Phytophthora spp.)

101.0 HAZARD ASSESSMENT

101.1 TERRESTRIAL SPECIES

Acute toxicity studies have shown that metalaxyl is, at most, only slightly toxic to mammals (rat LD50 = 669 mg/kg) and birds (mallard duck LD50= 1,466 mg/kg). Avian subacute dietary studies have shown that the LC50 exceeds 10,000 mg/kg for both mallard ducks and bobwhite quail.

For terrestrial wildlife species, the following residues may be expected on a variety of dietary matter immediately after one application of 1 lb. ai/A:

short grass	240 ppm
long grass	110 ppm
leafy crops	125 ppm
forage, small insects	58 ppm
large insects	12 ppm

However, because Ridomil 2E would be applied at the time of seeding, it would be more realistic to assess residue levels in

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alfalfa forage. CIBA-GEIGY conducted field residue trials in seven states. Alfalfa was treated at the proposed rate of 1.0 lb. ai/A of metalaxyl at seeding. Samples were collected at intervals ranging from 59 to 141 days preharvest and were analyzed for metalaxyl residues. The maximum residues detected in alfalfa forage were 5.1 ppm. These reports have not been verified by EPA but, if valid, they suggest very low levels of metalaxyl in alfalfa tissues.

The subacute dietary LC50s are much greater than the residues expected from the proposed application rate and no adverse effects to avian or mammalian species are expected. In addition, there is little concern for adverse chronic effects because the half-life of metalaxyl under field conditions is short (approximately two weeks.)

101.2   AQUATIC SPECIES

Available studies suggest that technical grade metalaxyl is practically non-toxic to freshwater fish. The 96 hour LC50 for rainbow trout and bluegill sunfish ranged from 130 to 150 ppm. The formulated product was slightly toxic with 96 hour EC50s of 18.4 and 27 ppm for rainbow trout and bluegill sunfish respectively.

Three studies of the acute toxicity of technical grade metalaxyl to Daphnia magna yielded LC50s of 28 to 121 ppm. One study using the formulated product reported an acute toxicity of 12.5 ppm. Thus, metalaxyl is only slightly toxic to this species.

To date there has only been one study of the chronic toxicity of technical grade metalaxyl to Daphnia magna. LeBlanc (1980) reported a minimum threshold concentration between 1.2 mg/l and 2.7 mg/l. These data indicate that metalaxyl may be chronically toxic to freshwater invertebrates at concentrations greater than 1.2 ppm.

Direct application of the pesticide to a pond or other water body exemplifies a "worst case" situation for exposure to aquatic species. Assuming an application rate of one lb. ai/A applied directly to a one acre pond, the resulting concentration would range from 122 ppb in a three-foot deep water body to 61 ppb in a six-foot deep pond. These concentrations are considerably less than the LC50 for aquatic organisms with either technical grade metalaxyl or formulated product and thus would not be expected to adversely affect those species.

Metalaxyl shows no evidence of significant bioaccumulation and would not be expected to present a long-term risk in the aquatic environment.

101.3   ENDANGERED SPECIES CONSIDERATION

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The proposed use of Ridomil 2E on alfalfa does not represent a hazard to endangered terrestrial or aquatic species. Estimated environmental concentrations are significantly below the LC50 of the most sensitive species tested. The threatened/endangered species triggers have not been exceeded.

101.4 ADEQUACY OF THE TOXICITY DATA

The available toxicity database was adequate to conduct a hazard assessment of this registration request.

101.5 ADEQUACY OF LABELING

EEB is providing the following statements for possible incorporation into supplemental labeling:

"
Do not apply directly to water or wetlands (swamps, bogs, marshes and potholes). Do not contaminate water when disposing of equipment washwater or rinsate."

102 CONCLUSIONS

EEB has evaluated this proposed Section 3 registration for the use of Ridomil 2E on alfalfa. It is expected that this use will not adversely affect non-target species.

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