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113201
SHAUGHNESSEY NO.

REVIEW NO.

EEB REVIEW

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PETITION OR EXP. NO.

DATE OF SUBMISSION 06-16-89

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RD ACTION CODE/TYPE OF REVIEW 510

TYPE PRODUCT(S) Fungicide

DATA ACCESSION NOS.

PRODUCT MANAGER NO. D. Stubbs (41)

PRODUCT NAME(S) Ronilan (Vinclozolin)

COMPANY NAME State of Washington

SUBMISSION PURPOSE Proposed Sec. 18 for use on snap beans

SHAUGHNESSEY NO.	CHEMICAL AND FORMULATION	% AI
113201	Vinclozolin	

EEB REVIEW

Chemical: Ronilan (Vinclozolin)

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The State of Washington is requesting an emergency exemption (Section 18) for the use of Ronilan fungicide to control Sclerotinia white mold and Botrytis gray mold on snap beans. No new data were submitted with this request.

100.2 Formulation Information

Active Ingredient (Ronilan 50W):
Vinclozolin: 3-(3,5-dichlorophenyl)-5-ethenyl-5-methyl-2,4-oxazolidinedione 50%
Inert Ingredients 50%

100.3 Application Methods, Directions, Rates

- Apply 0.5 lb of active ingredient per acre (1.0 lb Ronilan 50W).
- A maximum of two applications per season may be made. - Applications must be made approximately 7 days apart, and must take place when at least 20% of the plants have one bloom open, between June 15 and September 15.
- Applications may be made with ground application equipment using 40 to 100 gallons of water per acre, or by air using 5 gallons of water per acre.

100.4 Target Organisms

Target organisms are white mold, *Sclerotinia sclerotiorum*, and gray mold, *Botrytis cinerea*.

101 Hazard Assessment

101.1 Discussion

The State of Washington is requesting an emergency exemption for the use of Ronilan (vinclozolin) to control white mold and gray mold in snap beans. Maximum application rate is 0.5 lb ai per acre, with two applications allowed. Total acreage to be treated is 1,000 acres, statewide.

101.2 Likelihood of Adverse Effects on Nontarget Organisms

Terrestrial Organisms

Data previously reviewed in EEB indicate that vinclozolin is practically nontoxic to birds on both an acute oral basis and a dietary basis. The available data on rats suggest that the chemical also has a low mammalian acute toxicity. Thus, significant acute hazards to populations of nontarget terrestrial organisms are not anticipated from the proposed use at 0.75 lb ai/acre.

A number of partial reports and data tables have been submitted concerning the toxicity of vinclozolin to honey bees. Although none of the reports are sufficient to satisfy the data requirement, all the submitted data suggest that vinclozolin is no more than slightly toxic to honey bees.

Our major concern with vinclozolin is potential chronic hazard to avian species. Data on avian reproduction suggest that the chemical may affect egg fertility at a dietary concentration of 5 ppm.

Following an initial application at 0.5 lb ai/acre, estimated residues on avian food items would range from 3.5 ppm on fruit to 120 ppm on short grass. Although these residues are well below acute toxicity triggers for birds, they exceed reproductive effect levels on most avian food items.

Study has been submitted and is being reviewed, DOR 11-8-89

The registrant (BASF Wyandotte Corp.) is currently conducting a special avian reproduction study to more clearly assess chronic effects of vinclozolin in birds. Until this study is submitted and evaluated, EEB cannot assess avian reproduction hazard under the proposed exemption. However, the following points apply:

1) On the basis of information already reviewed, there is significant potential for vinclozolin to affect reproduction in birds exposed to the chemical via residues on food items. Use under the proposed exemption will result in residues which exceed the level at which effects on avian reproduction have been noted.

2) By way of mitigating the impact, maximum acreage to be treated under the exemption is 1,000 acres. Also, use on bean fields does not represent a high exposure situation for birds.

Aquatic Organisms

Data from previous EEB reviews indicate that vinclozolin is no more than moderately toxic to freshwater fish (bluegill LC50 = 47.3 mg/L; rainbow trout LC50 > 18 mg/L). LC50 for *Daphnia magna* was determined to be 3.65 mg/L, indicating moderate toxicity.

Rough calculation of an aquatic EEC (see attached) provides a value

of 20.13 ppb in a pond 1 foot deep, residues being derived from drift and runoff. This EEC value is well below any hazard triggers for freshwater organisms. Thus, use under the proposed exemption is not expected to adversely affect nontarget aquatic organisms.

101.3 Endangered Species Considerations

As noted above, the primary concern with vinclozolin relates to potential reproductive impairment in birds. EEB's Endangered Species files show 1 federally listed species in Washington, the peregrine falcon. Hazard to this species should be negligible, as use on snap beans represents a minimal exposure situation for the falcon.

On the basis of toxicity data and estimated EEC's, hazard to listed non-avian species is not anticipated.

101.4 Adequacy of Toxicity Data

The existing database is not adequate to assess hazards to nontargets under the proposed exemption. Chronic hazard to birds cannot be assessed until the special avian reproduction testing is completed.

103 Conclusions

EEB has reviewed the proposed emergency exemption for the use of Ronilan (vinclozolin) on snap beans in Washington. EEB concludes that the proposed use may represent a reproductive hazard to birds, although use on beans represents a low exposure situation. Hazard to other nontargets is not anticipated.

There are no federally listed endangered/threatened species in Washington that will be adversely affected by the proposed use.

Allen W. Vaughan 7.6.89
Allen W. Vaughan, Entomologist
Ecological Effects Branch
EFED (H7507C)

James W. Akerman
James W. Akerman, Chief
Ecological Effects Branch
EFED (H7507C)

Norman J. Cook 7.7.89
Norman J. Cook, Supervisory Biologist
Ecological Effects Branch
EFED (H7507C)

Attachment A

EEC CALCULATION SHEET

I. For un-incorporated ground application

A. Runoff

___lb(s) x 0.0_ (_% runoff) x 10 (A) (from 10 A. drainage basin) = _____lb(s) (tot.runoff)

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

Therefore, EEC = 61 ppb x ____(lb) = _____ ppb

II. For incorporated ground application

A. Runoff

___lb(s) ÷ _____ (cm) (depth of incorporation) x 0.0_ (_% runoff) x 10 (A) (10 A d.basin) = _____lb(s) (tot.runoff)

Therefore, EEC = 61 ppb x _____(lbs) = _____ppb

III. For aerial application (or mist blower)

A. Runoff

0.5 lb(s) x 0.6 (appl. efficiency) x 0.01 (1% runoff) x 10 (A) (10 A. d.basin) = 0.03 lb(s) (tot.runoff)

B. Drift

0.5 lb(s) x 0.05 (5 % drift) = 0.025 lb(s) (tot. drift)

Tot. loading = 0.03 lb(s) (tot. runoff) + 0.025 lb(s) (tot. drift) = 0.055 lb(s)

Therefore, EEC = 61 ppb x 0.055 (lbs) = 3.355 ppb

x 6 = 20.13 ppb (1' pond)