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113201
SHAUGHNESSEY NO.

REVIEW NO.

EEB REVIEW

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PETITION OR EXP. NO.

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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 WP (Vinclozolin)

COMPANY NAME State of Florida

SUBMISSION PURPOSE Proposed Sec. 18 for use on blueberries in Florida

SHAUGHNESSEY NO.	CHEMICAL AND FORMULATION	% AI
113201	Vinclozolin	50%

EEB REVIEW

Chemical: Ronilan (Vinclozolin)

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The State of Florida is requesting an emergency exemption (Section 18) for the use of Ronilan fungicide to control *Botrytis cinerea* (grey mold) on blueberries in Florida. No new data were submitted with this request.

100.2 Formulation Information

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

100.3 Application Methods, Directions, Rates

RATES: 1 to 2 lb (0.5 to 1.0 lb ai) material per acre per application. Apply no more than 8 lb material (4 lb ai) per acre per season.

INTERVALS: First spray at 10% bloom with an application every 7 to 10 days and immediate reapplication after frost protection or heavy fogs and rains. Schedule to continue through bloom to fruit set. Last application to be made 21 days prior to harvest.

USE PERIOD: Mid-January through mid-June, depending on the maturity period of the variety to be treated.

APPLICATION: By ground equipment in 100 gallons of water per acre for thorough coverage; by air equipment in 20 gallons of water per acre for thorough coverage.

100.4 Target Organism

Target organism is grey mold, *Botrytis cinerea*.

101 Hazard Assessment

101.1 Discussion

The State of Florida is requesting an emergency exemption for the use of Ronilan (vinclozolin) to control grey mold in blueberries. Maximum application rate is 1.0 lb ai per acre, with 8 applications

allowed. Total acreage to be treated is 1500 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 1.0 lb ai/acre.

A number of partial reports and data tables were submitted concerning the toxicity of vinclozolin to honey bees. Although none of the reports were 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 1.0 lb ai/acre, estimated residues on avian food items would range from 7 ppm on fruit to 240 ppm on short grass. Although these residues are well below acute toxicity triggers for birds, they exceed reproductive effect levels. Further, as many as 8 applications can be made under this exemption, which will likely increase the residue levels on avian food items.

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) Basic use period under the proposed exemption encompasses the breeding season for many bird species in Florida.

3) By way of mitigating the impact, maximum acreage to be treated under the exemption is 1500 acres. According to the submission package, this acreage is concentrated mostly in small farms of a few acres.

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 40.26 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 12 federally listed species of birds in Florida. Hazard to most of these will be negligible, as use on blueberries does not represent a potential exposure situation. However, two species, the Florida scrub jay and the red-cockaded woodpecker, are resident birds which could be subject to exposure under the proposed use on blueberries.

EEB consulted with the USFWS office in Jacksonville on this matter. FWS could not make an assessment due to lack of pertinent information in the submission package.

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.

103 Conclusions

EEB has reviewed the proposed emergency exemption for the use of Ronilan (vinclozolin) on blueberries in Florida. EEB concludes that the proposed use may represent a reproductive hazard to birds. Due to the lack of detailed information, the extent of this potential hazard cannot be assessed.

Information provided in the submission package is insufficient to allow assessment of hazard to endangered avian species, according to the USFWS in Jacksonville. To avoid a may-affect situation, the Florida Department of Agriculture and Consumer Services is advised to contact the office of the USFWS in Jacksonville (FTS 946-2580) prior to authorizing application of vinclozolin under the proposed exemption.

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Vinclozolin - blueberries

Attachment A

EEC CALCULATION SHEET

I. For un-incorporated ground application

A. Runoff

1 lb(s) x 0.01 (1% runoff) x 10 (A) (from 10 A. drainage basin) = 0.1 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 0.1 (lb) = 6.1 ppb (6' pond)

x 6 = 36.6 ppb (1' pond)

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

1 lb(s) x 0.6 (appl. efficiency) x 0.01 (1% runoff) x 10 (A) (10 A. d.basin) = 0.06 lb(s) (tot.runoff)

B. Drift

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

Tot. loading = 0.06 lb(s) (tot. runoff) + 0.05 lb(s) (tot. drift) = 0.11 lb(s)

Therefore, EEC = 61 ppb x 0.11 (lbs) = 6.71 ppb

x 6 = 40.26 ppb