

US EPA ARCHIVE DOCUMENT

2/23/93

DP Barcode : D187994
 PC Code No : 113201
 EEB Out :

To: Rebecca Cool
 Product Manager 41
 Registration Division (H7505C)

From: Anthony F. Maciorowski, Chief
 Ecological Effects Branch/EFED (H7507C)

Attached, please find the EEB review of...

Reg./File # : 93PA0001
 Chemical Name : Vinclozolin
 Type Product : Fungicide
 Product Name : Ronilan DF
 Company Name : Pennsylvania Department of Agriculture
 Purpose : Proposed Section 18 for use on snap beans.
Also, see questions on counties from PM.

Action Code : 510 Date Due : 03/02/93
 Reviewer : A. Vaughan Date In : 02/11/93

EEB Guideline/MRID Summary Table: The review in this package contains an evaluation of the following:

| GDLN NO | MRID NO | CAT | GDLN NO | MRID NO | CAT | GDLN NO | MRID NO | CAT |
|---------|---------|-----|---------|---------|-----|----------|---------|-----|
| 71-1(A) | | | 72-2(A) | | | 72-7(A) | | |
| 71-1(B) | | | 72-2(B) | | | 72-7(B) | | |
| 71-2(A) | | | 72-3(A) | | | 122-1(A) | | |
| 71-2(B) | | | 72-3(B) | | | 122-1(B) | | |
| 71-3 | | | 72-3(C) | | | 122-2 | | |
| 71-4(A) | | | 72-3(D) | | | 123-1(A) | | |
| 71-4(B) | | | 72-3(E) | | | 123-1(B) | | |
| 71-5(A) | | | 72-3(F) | | | 123-2 | | |
| 71-5(B) | | | 72-4(A) | | | 124-1 | | |
| 72-1(A) | | | 72-4(B) | | | 124-2 | | |
| 72-1(B) | | | 72-5 | | | 141-1 | | |
| 72-1(C) | | | 72-6 | | | 141-2 | | |
| 72-1(D) | | | | | | 141-5 | | |

Y=Acceptable (Study satisfied Guideline)/Concur
 P=Partial (Study partially fulfilled Guideline but additional information is needed)
 S=Supplemental (Study provided useful information but Guideline was not satisfied)
 N=Unacceptable (Study was rejected)/Nonconcur

DP BARCODE: D187994

CASE: 284341
SUBMISSION: S434285

DATA PACKAGE RECORD
BEAN SHEET

DATE: 02/10/93
Page 1 of 1

*** CASE/SUBMISSION INFORMATION ***

CASE TYPE: EMERGENCY EXEMP ACTION: 510 SEC18-OC F/F USE
CHEMICALS: 113201 Vinclozolin

ID#: 93PA0001

COMPANY:

PRODUCT MANAGER: 41 REBECCA COOL 703-305-7717 ROOM: CM2 720
PM TEAM REVIEWER: LIBBY PEMBERTON 703-305-5309 ROOM: CM2 716A
RECEIVED DATE: 01/27/93 DUE OUT DATE: 03/18/93

*** DATA PACKAGE INFORMATION ***

DP BARCODE: 187994 EXPEDITE: N DATE SENT: 02/10/93 DATE RET.: / /

CHEMICAL: 113201 Vinclozolin

DP TYPE: 001 Submission Related Data Package

ADMIN DUE DATE: 03/02/93

CSF: N

LABEL: Y

| ASSIGNED TO | DATE IN | DATE OUT |
|-------------|----------|----------|
| DIV : EFED | 02/11/93 | / / |
| BRAN: EEB | 02/11/93 | / / |
| SECT: | / / | / / |
| REVR : | / / | / / |
| CONTR: | / / | / / |

*** DATA REVIEW INSTRUCTIONS ***

While EEB did not favorably review this 18 in 1991; several 18's for this use have been favorably reviewed (see attached review for 92-WA-15). We issued PA this 18 in the past based on the other favorable reviews and the lack of affected endangered species in the counties previously authorized. Now PA is adding Montour, Northumberland and Snyder counties. Are there any concerns for these additional counties?

*** ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION ***

| DP BC | BRANCH/SECTION | DATE OUT | DUE BACK | INS | CSF | LABEL |
|--------|----------------|----------|----------|-----|-----|-------|
| 187995 | TSCB | 02/10/93 | 03/02/93 | Y | N | Y |
| 187996 | OREB | 02/10/93 | 03/02/93 | Y | N | Y |
| 187997 | TB-2 | 02/10/93 | 03/02/93 | Y | N | Y |

EEB REVIEW

Chemical: Ronilan (Vinclozolin)

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

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

100.2 Formulation Information

Active Ingredient (Ronilan 50DF):

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

Inert Ingredients 50%

100.3 Application Methods, Directions, Rates

Application rate is 1.0 to 1.5 lb Ronilan 50DF (0.5 to 0.75 lb ai) per acre, maximum of two applications. Product may be applied by air or ground.

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 Pennsylvania 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 0.75 lb ai per acre, with two applications allowed. Total acreage to be treated is 3,000 acres in Centre, Columbia, Lycoming, Montour, Northumberland, Snyder, Union, and York Counties.

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 or less.

Data from an acute contact study with honey bees indicate that vinclozolin is practically nontoxic to bees. No hazard is anticipated from the proposed use.

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

Following an initial application at 0.75 lb ai/acre, estimated residues on avian food items would range from 5.25 ppm on fruit to 180 ppm on short grass. Although these residues are well below acute toxicity triggers for birds, they exceed reproductive effect levels. At 0.5 lb ai/acre, residues would range from 3.5 to 120 ppm, exceeding reproductive effect levels on most 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 exemptions 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 3,000 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 > 3.4 mg/L; rainbow trout LC50 > 2.84 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 25.62 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.

Nontarget Plants

Data from tests with 5 aquatic plant species indicated less than a 50% detrimental effect, as compared to controls, for all test species. Use under the proposed exemption is not expected to

adversely affect nontarget plants.

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 the bald eagle as the only endangered bird species listed for the subject counties in Pennsylvania. Hazard to this species should be negligible, as use on snap beans represents a minimal exposure situation for this species.

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 adequate to assess hazards to nontargets under the proposed exemption, except for reproductive hazard to birds. Chronic hazard to birds cannot be assessed until the avian reproduction testing is completed.

103 Conclusions

EEB has reviewed the proposed emergency exemption for the use of Ronilan (vinclozolin) on snap beans. 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 Pennsylvania that will be adversely affected by the proposed use.

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FEB 23 1993

EEC CALCULATION SHEETI. For un-incorporated ground application

A. Runoff

$$\underline{\quad} \text{ lb(s)} \times \frac{0.0}{(\% \text{ runoff})} \times 10 \text{ (A)} = \underline{\quad} \text{ lb(s)} \text{ (tot. runoff)} \\ \text{drainage basin)}$$

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

$$\text{Therefore, EEC} = 61 \text{ ppb} \times \underline{\quad} \text{ (lb)} = \underline{\quad} \text{ ppb}$$

II. For incorporated ground application

A. Runoff

$$\underline{\quad} \text{ lb(s)} \div \frac{\underline{\quad} \text{ (cm)}}{(\text{depth of incorporation})} \times \frac{0.0}{(\% \text{ runoff})} \times 10 \text{ (A)} = \underline{\quad} \text{ lb(s)} \text{ (tot. runoff)} \\ \text{d. basin)}$$

$$\text{Therefore, EEC} = 61 \text{ ppb} \times \underline{\quad} \text{ (lbs)} = \underline{\quad} \text{ ppb}$$

III. For aerial application (or mist blower)

A. Runoff

$$\underline{0.75} \text{ lb(s)} \times \frac{0.6}{(\text{appl. efficiency})} \times \frac{0.01}{(\% \text{ runoff})} \times 10 \text{ (A)} = \underline{0.045} \text{ lb(s)} \text{ (tot. runoff)} \\ \text{d. basin)}$$

B. Drift

$$\underline{0.5} \text{ lb(s)} \times 0.05 = \underline{0.025} \text{ lb(s)} \text{ (tot. drift)} \\ \text{(5 \% drift)}$$

$$\text{Tot. loading} = \underline{0.045} \text{ lb(s)} \text{ (tot. runoff)} + \underline{0.025} \text{ lb(s)} \text{ (tot. drift)} = \underline{0.07} \text{ lb(s)}$$

$$\text{Therefore, EEC} = 61 \text{ ppb} \times \underline{0.07} \text{ (lbs)} = \underline{4.27} \text{ ppb}$$

$$\times 6 = 25.62 \text{ ppb} \\ \text{(1' pond)}$$