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RECORD NO.

109301
SHAUGHNESSEY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 6-23-87 OUT 11-12-87

FILE OR REG. NO 352-485

PETITION OR EXP. NO.

DATE OF SUBMISSION 5-6-87

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RD ACTION CODE/TYPE OF REVIEW 330

TYPE PRODUCT(S) : I, D, H, F, N, R, S Insecticide

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. G. LaRocca (15)

PRODUCT NAME(S) Pydrin

COMPANY NAME Du Pont

SUBMISSION PURPOSE Lable amendment to add use on caneberries

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
109301	Fenvalerate	24

EEB Review

Pesticide Name: Fenvalerate (Pydrin)

100.0 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

Du Pont requests an added use pattern of Pydrin Insecticide for use in caneberries (blackberries, raspberries, boysenberries, dewberries, loganberries, youngberries) for control of certain insects.

100.2 Formulation Information

ACTIVE INGREDIENT:
Cyano (3-phenoxphenyl) methyl-4-chloro-alpha-(1-methylethyl) benzeneacetate.....24%
Inert Ingredients.....76%
Total 100%

100.3 Application Methods, Director, Dates

Apply sprays with ground equipment only. Apply as needed to maintain control using 0.1-0.2 lb ai/acre (5 1/3 - 10 2/3 fl oz Pydrin®/acre)

100.4 Target Organisms

Oblique-banded leafroller
Orange tortrix
Aphids

100.5 Precautionary Labeling

This pesticide is extremely toxic to fish. Use with care when applying in areas adjacent to any body of water. Do not apply directly to water. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water by cleaning of equipment or disposal of wastes. Apply this product only as specified on this label.

2

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area. Additional information may be obtained by consulting your Cooperative Extension Service.

101.0 Hazard Assessment

101.1 Discussion

Pydrin, a second generation pyrethroid, is relatively persistent and extremely toxic to aquatic organisms. Under anaerobic conditions, pydrin degradation proceeds at a slow rate with a halflife of about 6 months. Although hydrolysis results after 24 days at ph 7.2, pydrin is strongly sorbed from aqueous solutions onto soil (soil water partition coefficient was found to be greater than 15,000 and desorption is slowly reversible).

Pydrin 2.4 EC is currently registered on cotton, field corn, peanuts, soybeans, apples, peaches, pecans filburts, cabbage, cauliflower, cucumber, melons, pumpkins, beans, potatoes and sweet corn.

There are less thatn 50,000 acres of caneberries grown in the U.S.

101.2 Likelihood of Adverse Efects on Nontarget Organisms

Pydrin is relatively nontoxic to birds (bobwhite quail LC50 = 10,000 ppm). However, it is highly toxic to aquatic organisms, with LC50 values of 1.6 ppb for Daphnia, 6.2 ppb for rainbow trout, and 0.42 ppb for bluegill sunfish. The MATC for fry survival and egg production in fathead minnows was between 0.09 and 0.21 ppb.

Residues

Aquatic

The use of Pydrin as foliar spray could result in possible hazard from runoff of treated areas. The estimated environmental concentration (EEC) for foliar application at the maximun application

rate is 1.2 ppb (see Attachment A). This EEC hits the bluegill and aquatic invertebrates triggers for hazard. However, there are several mitigating factors considered in this registration. First, there are less than 50,000 acres of caneberries grown in the U.S. Second, the crops are grown in non-contiguous areas about 5 acres per farm. These facts combined with dilution of the product via runoff lead EEB to believe the additional use of Pydrin on caneberries will not significantly increase the hazard to aquatic organisms over existing uses already on the label.

Terrestrial

Following the maximum applicatin rate of 0.2 lb/ai/Ac, the following residues (in ppm) are expected:

Short Grass	Long Grass	Leafy Crops	Forage Alfalfa	Insects	Seed Pods	Fruit
48	22	25	12	12	2	1

These values are well below the avian and mammal toxicity values.

EEB does not believe the additional use of Pydrin on caneberries will significantly incrase hazard to terrestrial organisms over existing uses.

101.3 Endangered Species

The aquatic endangered species concern level (1/20 the LC50) is exceeded for aquatic invertebrates and fish species. [1/20 X LC50 Daphnia = 0.08 ppb. 1/20 x LC50 Bluegill = 0.021 ppb, EEC = 1.2 ppb]. However, it is anticipated that little, if any exposure to listed species will occur with the addition of the minor use covered in this submission. There are several reasons EEB feels there is little chance for exposure of pydrin to aquatic invertebrates and fish via this use. First, there are less than 50,000 acres of caneberries grown in more than 30 states in the U.S. Second, the growing areas for these crops are small (5 to 10 acre) non-contiguous patches per farm. Third, the state with the most acreage (Maine 18,000 acres) has no aquatic endangered species. These factors combined with a very low water solubility on a minor crop use mitigate the endangered species concerns.

4

101.4 Adequacy of Toxicity Data

The registrant should be reminded that data from three tests, as outlined in the October 25, 1985 Data Call-In Notice for Fenvalerate, are still required. They are the Freshwater invertebrate life cycle test (72-4); Estuarine invertebrate life cycle text (72.4); and Simulated and/or actual aquatic field study.

101.5 Adequacy of Precautionary Labeling

The labeling should be changed to include the following:
This pesticide is extremely toxic to fish.
"Do not apply directly to water or wetlands (swamps, bogs, marches, and potholes). Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water by cleaning of equipment or disposal of wastes."

102. Conclusions

EEB has completed an incremental risk assessment (3(c)(7) finding) of a proposed registration of Pydrin on caneberries. Based on the available data, EEB concludes the proposed use provides for no significant incrase in exposure or acute risk to nontarget organisms, including endangered species.

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Attachment A

Pydrin EEC CALCULATION SHEET

I. For foliar application

A. Runoff

0.2 lbs x (0.01 (1 % runoff)) x 10 (A) (from 10 A. dranage basin) = 0.02 lb (tot. runoff)

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

Therefore, EEC = 61 ppb x 0.02 (lb) = 1.2 ppb

II. For aereal application

A. Runoff

_____ lbs x 0.6 (appl. efficiency) x 0.0 (__ % run-off) x 10 (A) (10 A. d. basin) = _____ lbs (tot. runoff)

B. Drift

_____ lbs x 0.05 (5 % drift) = _____ lb (tot. drift)

Tot. loading = _____ lb + _____ lb = _____ lbs

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

6