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SHAUGHNESSEY NO.

REVIEW NO.

ECOLOGICAL EFFECTS BRANCH REVIEW

DATE: IN 5-03-88 OUT MAY 17 1988

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PETITION OR EXP. PERMIT NO.

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

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. D. Stubbs (41)

PRODUCT NAME(S) Avid 0.15 EC (Avermectin)

COMPANY NAME California Dept. of Food & Agriculture

SUBMISSION PURPOSE Proposed Sec. 18 for use on pears

| SHAUGHNESSEY NO. | CHEMICAL, & FORMULATION | % A.I. |
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Ecological Effects Branch Review

Pesticide Name

Avermectin

100.0 Submission Purpose and Label Information

The California Department of Agriculture is requesting a Section 18 emergency exemption for the use of Avid 0.15 EC (avermectin) to control two-spotted spider mite and European red mite on pears. The California pear industry is experiencing a serious economic emergency situation this season due to inability to control the two-spotted mites and the European red mites because of the resistance problem. Severe mite infestation affects the pear tree by causing defoliation. Subsequently, defoliation will cause the damage to the pear fruit by exposing it to the sun and result in fruit burn, misshapen fruit, undersized fruit, and fruit drop. Application will be restricted to Lake, Mendocino, Sacramento, Solano, El Dorado, Yuba, San Joaquin, Yolo, and Sutter Counties.

100.2 Formation Information

Avid 0.15 EC
Contains 0.15 lb. of avermectin ai per gallon.

100.3 Application Methods, Directions, Rates

Apply 10-20 ounces of product (0.012-0.024 lbs. ai) per acre using ground equipment.
Apply in 50-400 gallons of water per acre.
Apply when mite population reach an infestation level of 2 mites per leaf. Maximum of two application will be made per season. A toatal of 21,500 acres of pears may be treated and 0.005 ppm of total Avid residue on pear is expected. All applicable directions, restrictions, and precautions on the EPA registration label will be followed.

100.4 Target Organisms

Two-spotted spider mite, European red mite.

100.5 Precautionary Labeling

No precautionary labeling was provided.

101.0 Hazard Assessment

101.1 Discussion

Avermectin will be applied at 0.012-0.024 lbs. ai per acre. Maximum of two applications.

101.2 Likelihood of Adverse Effects to Nontarget Organisms (A summary of nontarget organism toxicity data and environmental fate information are outlined in previous EEB review by D. Rieder, 2/19/87.)

Terrestrial Organism

At proposed application rate of 0.024 lb. ai/acre, residues on terrestrial food items are expected in the range of 0.03 to 5.5 ppm. These levels are well below the lowest avian dietary LC50 of 383 ppm and the avian reproductive NOEL of 12 ppm. Thus, proposed use of avermectin on pear is unlikely to caused acute effects in wildlife. The short half-life will preclude chronic exposure, thus adverse chronic effects are not expected.

Aquatic Organisms

Exposure to aquatic and estuarine nontarget organisms is possible through drift. The application rate of 0.024 lb. ai/A will produce Estimated Environmental Concentration (EEC) of 0.07 ppb in one acre pond 6-feet deep.

0.02 lb. ai/A x 0.05 (5 % drift) x 61 ppb (EEC per lb. in 6 'deep pond) = 0.07 ppb

The EEC does not exceed acute effects levels for fish and aquatic invertebrate (Their LC50's are 3.2 ppb, 0.22-0.34 ppb, and 0.2 ppb for rainbow trout, Daphnia and shrimp, respectively). Therefore, the proposed use is not expected to adversely affect aquatic nontarget organisms.

101.3 Endangered Species Considerations

Based on EEB Federal Endangered Species files, there are no federally listed endangered aquatic species in California that will be adversely affected by this use.

103.0 Conclusions

EEB has reviewed this Section 18 emergency exemption requested by the State of California for use of avermectin to control mites on pears. Based upon the available data, EEB concludes that the proposed use will not pose significant adverse impacts to nontarget aquatic organisms.

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