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214047
RECORD NO.

122804
SHAUGHNESSEY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 2-22-88 OUT 25 FEB 1988

FILE OR REG. NO 88-OR-06

PETITION OR EXP. NO.

DATE OF SUBMISSION 2-04-88

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RD REQUESTED COMPLETION DATE 3-02-88

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RD ACTION CODE/TYPE OF REVIEW 510

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

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. D. Stubbs (41)

PRODUCT NAME(S) Avermectin (Agrimec 0.15 EC)

COMPANY NAME Oregon Department of Agriculture

SUBMISSION PURPOSE Proposed Section 18 for use on pears in Oregon

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
122804	Avermectin	2%

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EEB REVIEW

Chemical: Avermectin

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The State of Oregon is requesting an emergency exemption (Section 18) for the use of avermectin to control mites on pears. No data were submitted with this request.

100.2 Formulation Information

Active ingredient:

Abamectin: Avermectin B_1 [A mixture of avermectins containing $\geq$ 80% avermectin A_1a, 5-0-dimethyl and $\leq$ 20% avermectin B_1a, 5-0-dimethyl-25-di(1-methyl-propyl)-25(1-methylethyl) 2.0%

Inert ingredients 98.0%

Contains 0.15 lb of active ingredient per gallon.

100.3 Application Methods, Directions, Rates

Application Information

Rate of application is to be 10-20 oz. of Agrimec 0.15 EC per acre. For dilute sprays, 2.5 t0 5.0 fl. oz. per 100 gal of water will be used. The rate of Agrimec per 100 gal is based on a standard volume of 400 gal per acre dilute spray. If less than 400 gal is applied, 10 fl. oz. per acre in the appropriate volume to obtain good coverage will be used. For concentrate sprays 10 fl. oz. per acre in sufficient water to obtain thorough coverage will be used. A maximum of 2 applications at 10 fl. oz. per acre each will be allowed. No more than 20 fl. oz. of Agrimec will be applied per acre in a growing season. Applications will be made with a minimum of 0.25% paraffinic oil in the dilute spray mixture and not less than 1.0 gal of paraffinic spray oil per acre in the final finished spray.

There will be a minimum seven-day preharvest interval. Agrimec EC will not be applied through any type of irrigation system. Applications will not be made when weather conditions favor drift from target areas. This pesticide is toxic to fish and wildlife. This product

is highly toxic to bees exposed to direct treatment or to residues on blooming crops or weeds. Applications will not be made or allowed to drift to blooming crops or weeds if bees are visiting the treatment area.

Applications will be made only to pear orchards where mite resistance to registered pesticides is known to occur. Treatment of pears will begin when field scouting reports indicate there is an average of two mites per leaf.

The use period is April 20 to September 1, 1988.

100.4 Target Organisms

Twospotted spider mite (Tetranychus urticae); Yellow spider mite (Eotetranychus carpini borealis); and McDaniel spider mite (T. mcdanieli).

100.5 Precautionary Labeling

Warnings on toxicity to fish and wildlife and to honey bees are outlined under 100.3, above. No labeling was provided with this submission.

101 Hazard Assessment

101.1 Discussion

The state of Oregon is requesting an emergency exemption for use on pears. Avermectin is currently registered for use only on ornamentals and in fire ant control. Proposed application rate is 10-20 oz. Agrimec EC (0.0125 to 0.025 lb ai) per acre, with a maximum of 20 oz. formulation per acre in a season. This request is for use on 8000 acres of pears in Jackson and Josephine Counties and 10,000 acres of pears in Hood River and Wasco Counties.

101.2 Likelihood of Adverse Effects on Nontarget Organisms (Nontarget organism toxicity data are outlined in EEB review by D. Rieder, out 2/19/87. The following discussion is excerpted, in part, from that review).

Terrestrial Organisms

At the proposed rate of application, 0.025 lb ai/acre, residues on terrestrial food items are expected in the range of 0.1 to 6.0 ppm. These levels are well below calculated or laboratory-determined LC_{50}'s for birds and mammals. Thus, proposed use of avermectin is not likely to cause acute effects in birds and mammals. The short half-life will preclude chronic exposure; thus, chronic effects are not expected.

Avermectin is highly toxic to honey bees. However, label warnings should mitigate the potential hazard to these pollinators.

Aquatic Organisms

In his review of 2/19/87, Rieder calculated the following aquatic EEC's for application at 0.025 lb ai/acre:

Water depth	EEC in ppb
6"	1.8
1'	0.9
3'	0.3
6'	0.15

On the basis of these figures, the proposed use of avermectin may cause adverse effects in local populations of aquatic invertebrates. Adverse effects would be minimized by the limited acreage involved (18,000 acres total) and by the rapid breakdown of avermectin in water. The proposed use is not expected to adversely affect freshwater fish and molluscs.

101.3 Endangered Species Considerations

On the basis of information in its Endangered Species files, EEB has determined that use on pears in Oregon will not result in exposure of endangered species.

103 Conclusions

EEB has reviewed the proposed emergency exemption for the use of avermectin in Oregon. Proposed use should not result in hazard to nontarget terrestrial organisms, due to low application rate. Also, although avermectin is highly toxic to honey bees, label warnings should provide adequate protection for these pollinators.

The proposed use does present a hazard to exposed populations of freshwater aquatic invertebrates, due to the very high toxicity of avermectin to these organisms. Extent of this hazard is mitigated by two factors. First, maximum acreage to be treated is 18,000 acres. Second, avermectin breaks down rapidly in the aquatic environment. Hazard to molluscs and freshwater fish is expected to be minimal.

There are no federally listed endangered species in Oregon that will be adversely affected by this use.

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