

US EPA ARCHIVE DOCUMENT

128801
SHAUGHNESSEY NO.

REVIEW NO.

EEB REVIEW

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DATE OF SUBMISSION 7-31-85
DATE RECEIVED BY HED 8-5-85
RD REQUESTED COMPLETION DATE 11-13-85
EEB ESTIMATED COMPLETION DATE 11-5-85
RD ACTION CODE/TYPE OF REVIEW 121/New Chemical
TYPE PRODUCT(S) : I, D, H, F, N, R, S Insecticide
PRODUCT MANAGER NO. Adam Heyward (17)
PRODUCT NAME(S) Logic
COMPANY NAME MAAG Agrochemicals
SUBMISSION PURPOSE Submission of estuarine data to
support registration
SHAUGHNESSEY NO. CHEMICAL, & FORMULATION % A.I.
Fenoxycarb

EEB REVIEW

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

With this submission the registrant, MAAG Agrochemicals, provided required estuarine studies.

100.2 Formulation Information

RO 13-5223 is 1% a.i., fenoxycarb.

100.3 Application Methods, Directions, Rates

Apply broadcast or aerially at 1 to 1.5 lbs. per acre. This is 0.01 to 0.015 lbs. a.i. per acre.

100.4 Target Organisms

Fire ants in noncrop areas.

101 Hazard Assessment

101.1 Discussion

This hazard assessment will address the extuarine species and estuarine habitat only. The rest of the ecosystem has been previously discussed. See Reg Std. 4/16/85 and review dated 10/31/83.

The maximum use rate is 0.015 lbs. ai per acre. The label suggests retreatment at 3-4 months.

101.2 Likelihood of Adverse Effects to Non-Target Organisms

Based on fate data (EAB review dated 13 Dec 1983), fenoxycarb is stable to hydrolysis but will photolyze rapidly in water (t1/2=5.7 hrs.). It is rather persistent in soil (t1/2=2-3 months). It bioaccumulated to 95X in fish.

The maximum concentration that could occur in water would be from inadvertent direct application. The following residues could occur:

<u>DEPTH</u>			
<u>6"</u>	<u>1'</u>	<u>3'</u>	<u>6'</u>
11 ppb	5.5 ppb	1.8 ppb	0.9 ppb

The residues in 1' of water or deeper are less than 1/20th the oyster larvae EC50. The residues in 6" of water or deeper are less than 1/20th the fish and shrimp LC50's. The expected residues are not expected to have an acute effect on estuarine organisms. The residues in water are expected to photolyze before they can have an adverse chronic effect on estuarine organisms.

Based on an EEC from runoff, the residues in water would not exceed 1.1 ppb.

$$\begin{array}{r}
 10 \text{ acres treated} \\
 \times 0.015 \text{ lbs a.i. per acre} \\
 \hline
 0.15 \text{ lbs. applied} \\
 \times 0.01 \text{ (1\% runoff)} \\
 \hline
 0.0015 \text{ lbs. loading}
 \end{array}$$

<u>Residues (PPB) at Depths</u>			
<u>6"</u>	<u>1'</u>	<u>3'</u>	<u>6'</u>
1.1	0.6	0.2	0.1

These levels are less than 1/100th the LC50 for fish and shrimp and less than 1/100 th the EC50 for Oysters.

101.3 Endangered Species Consideration

No effect to endangered species is expected. See EEB review dated 10/31/83.

101.4 Adequacy of Data

The data are sufficient to assess the hazards to nontarget organisms.

One report was submitted with this data submission. The report covered three toxicity tests.

1. Estuarine Fish 96-hour LC50

Species: Menidia menidia

Category: Core

Results: LC50= 1.074 ppm (95% C.L. 0.94 to 1.18 ppm)

Discussion: The test protocol was acceptable, however, the report lacked some information. It did not indicate the hours pretest without food or the photoperiod. These deficiencies did not affect the category or the results of the test. This study shows that fenoxycarb is moderately toxic to estuarine fish.

2. Shrimp 96-hour LC50

Species: Palaemonetes pugio

Category: Core

Results: LC50= 2.2 ppm (95% C.L. 1.75 to 2.5 ppm)

Discussion: The test protocol was acceptable, however, the report failed to indicate the photoperiod. This deficiency does not affect the category of the test nor the outcome. This study shows that fenoxycarb is moderately toxic to shrimp.

3. Oyster Embryo-Larvae 48-hour EC50

Species: Crassostrea virginica

Category: Core

Results: EC50=0.15 ppm (95% C.L. 0.1 to 0.17)

Discussion: The test protocol was acceptable. This study shows that fenoxycarb is highly toxic to oyster larvae.

101.5 Adequacy of Labeling

See Registration Standard chapter by EEB (4/16/85) for labeling.

103 Conclusion

EEB has completed a full risk assessment (3(c)(5) finding of the proposed registration of fenoxycarb to control fire ants in noncrop areas. Based on available data and use information EEB concludes that the proposed use provides for minimal hazards to nontarget organisms.

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