

US EPA ARCHIVE DOCUMENT

107901

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REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 1-25-83 OUT 3-29-83

FILE OR REG. NO. 279-EUP-OA

PETITION OR EXP. PERMIT NO. _____

DATE OF SUBMISSION 1-18-83

DATE RECEIVED BY HED 1-24-83

RD REQUESTED COMPLETION DATE 4-21-82

EEB ESTIMATED COMPLETION DATE 4-14-83

RD ACTION CODE/TYPE OF REVIEW 710/EUP

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

DATA ACCESSION NO(S). _____

PRODUCT MANAGER NO. H. Jacoby (21)

PRODUCT NAME(S) Funginex 1.6 EC

COMPANY NAME FMC Corporation

SUBMISSION PURPOSE Proposed EUP for use on Almonds (California)

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
<u>107901</u>	<u>Triforine</u>	<u>18.2%</u>
_____	<u>Inert Ingredients</u>	<u>81.8%</u>
_____	_____	_____
_____	_____	_____

Funginex 1.6 EC

100.0 Pesticide Use

The proposed use is an EUP for use on almonds in California.

100.1 Application Methods/Directions

For full coverage spray only, mix 12 fl. oz. of Funginex 1.6 EC per 100 gallons and apply to run-off. For low volume sprayers, apply 36 to 48 oz. of undiluted Funginex per acre per application in sufficient water (50-200 gallons of water per acre) or a minimum of 20 gallons of water for aerial application.

Apply a maximum of 2 applications during the blossom period. Do not apply after petal fall.

100.2 Application Rates

Formulation: 36-48 oz/acre

Active ingredient: 7.2-9.6 oz/acre (0.45-0.6 lb ai/acre)

100.3 Precautionary Labeling

The following Environmental Hazards labeling appears on the proposed label:

"Do not apply directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes. Apply this product only as specified on this label."

100.4 Proposed EUP Program

100.4.1 Objectives

The registrant proposes that a maximum of 200 acres of almonds be treated in the state of California to determine the efficacy of Funginex 1.6 EC under commercial use conditions.

100.4.2 Duration/Date/Amount Shipped

This permit will cover two years, February 1983 through February 1985. The maximum amount of product required is 150 gallons (240 lb. active ingredient).

100.4.3 Application Procedures

Ground:

- 1) Dilute 12 fl. oz. of Funginex per 100 gallons apply to run-off.
- 2) Low volume, 36-48 oz. of undiluted Funginex per acre in 50-200 gallons of water.

Aerial:

- 1) 36-48 oz. of undiluted Funginex per acre in minimum 5 gallons of water.

100.4.4 Target Pests

Fungi: Monilinia laxa

100.4.5 Geographical Site Features

Almonds in the State of California

100.4.6 Restrictions

Two (2) applications per season.
Do not apply after petal fall.
Crop destruct almond hulls.

101 Chemical and Physical Properties

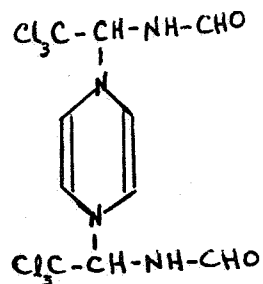
101.1 Chemical Name

(N,N'-[1,4-piperazinediyl-bis-(2,2,2-trichloroethylidene)]-bis-[formamide])

101.2 Common Name

Triforine

101.3 Structural Formula



101.4 Molecular Weight

435

101.5 Physical State

Colorless, odorless white solid material. Melting point 155°C.

101.6 Solubility

Water: 27-29 ppm at room temperature

Acetone: insoluble

Benzene: insoluble

102 Behavior in the Environment (From EEB review of 3/14/78).

102.1 Soil

Half-life about 2 weeks (slower in dry seasons). Degradation is probably chemical rather than biological. Parent compound may not leach; but metabolites appear to be fairly mobile in soil.

102.2 Water

Rapid degradation in water (2 days - 1 week)

102.3 Plant

Uptake by roots and transported to aerial portions of plant with half-life of 9-10 days (study done with 3-week old barley plants after a soil drench).

102.4 Animal

In a rat study, 96% of dose was excreted through urine and feces after 72 hours.

103.0 Toxicological Properties

<u>Study</u>	<u>Results</u>	<u>Category/Comment</u>
Rat 13-week dietary	NEL 500 ppm	Unknown (Craven 2/1/77)
Dog 13-week dietary	NEL 30,000 ppm	Unknown (Craven 2/1/77)
Bobwhite quail LD ₅₀	>5000 mg/kg	Core (upgraded from supplemental) (Laird 9/10/79) (Reider 12/10/81)
Bobwhite quail LC ₅₀	1849 ppm (1142-2994)	Core (Hitch 8/23/77)
Mallard duck LC ₅₀	>4640 ppm	Core (Hitch 8/23/77)
Daphnia LC ₅₀	28 ppm	Core (Craven 11/20/78)
Rainbow trout LC ₅₀	<u>reported</u> as 1000 ppm*	*These studies were originally validated as
Bluegill sunfish LC ₅₀	<u>reported</u> as 1000 ppm*	Core by Hitch (8/23/77) who later changed them to Supplemental, possibly after learning of solubility problems in the studies.

104 Hazard Assessment

The following maximum residues are expected after a single application of Funginex at the highest label rate (0.6 lb a.i./acre):

	<u>Residues (ppm)</u>
Short rangelgrass	144
long grass	66
leaves/leafy crops	75
forage/small insects	35
Pods, seeds/large insects	7
fruits	4
6" water	0.4

These residues are well below the reported toxicity values for avian and aquatic species. Given the expected residues and the reported toxicity values, no unreasonable hazards to non-target organisms are expected to result from the proposed use of Funginex.

104.1 Endangered Species Considerations

The following endangered species are known to occur in counties where almonds are reportedly grown.

<u>Species</u>	<u>County</u>
Desert slender salamander	Riverside
Santa Cruz long-toed salamander	Monterey, Santa Cruz
Mohave chub	Los Angeles, San Bernardino
Unarmored threespine stickleback	Los Angeles, Ventura
Lahontan cutthroat trout	Nevada, Placer
Little Kern golden trout	Tulare
Paiute cutthroat trout	Toulumne

The Registrant should ensure that no Federally listed endangered species is affected by the proposed experimental use program.

104.2 Adequacy of Toxicity Data

No additional fish and wildlife toxicity data were submitted with this request.

104.3 Additional Data Required

Prior to consideration for future conditional registrations the following data may be required:

- 1) 96-hour LC₅₀ to rainbow trout
- 2) 96-hour LC₅₀ to bluegill sunfish

105 Environmental Hazards Labeling

The environmental hazards labeling should be changed to read as follows:

"Do not apply directly to water or wetlands.
Do not contaminate water by cleaning of equipment
or disposal of wastes."

107 Conclusions

EEB has reviewed the proposed experimental use program for the use of Funginex 1.6 EC on almonds. Based upon the available data EEB concludes that the proposed EUP provides for no significant exposure or risk to nontarget organisms.

107.1 Special Notes

As pointed out in EFB's review of 1/4/82, the label directions pertaining to application rate are unclear. The registrant should clarify the actual use rate in lb. a.i./acre.

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