

US EPA ARCHIVE DOCUMENT

251711

RECORD NO.

129011

SHAUGHNESSEY NO

2

REVIEW NO.

EEB REVIEW

DATE: IN 9-25-89 OUT 12-27-89

FILE OR REG. NO. 707-EUP-RELL

PETITION OR EXP. NO. _____

DATE OF SUBMISSION 8-29-89

DATE RECEIVED BY EFED 9-20-89

RD REQUESTED COMPLETION DATE 12-18-89

EEB ESTIMATED COMPLETION DATE 12-18-89

RD ACTION CODE/TYPE OF REVIEW 710

TYPE PRODUCT(S) Fungicide

DATA ACCESSION NO(S) _____

PRODUCT MANAGER, NO. S. Lewis (21)

PRODUCT NAME(S) RH-7592 2F

COMPANY NAME Rohm & Haas Company

SUBMISSION PURPOSE Proposed EUP for use on almonds

SHAUGHNESSEY NO.

CHEMICAL

% A.I.

129011

Fenethanil

24%

EEB Review

RH-7592

100.0 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

Proposed experimental use permit (EUP) for RH-7592 Fungicide use on almonds.

100.2 Formulation Information

Active Ingredient:

Fenethanil (2-cyano-2-phenyl-2-(B-p-chlorophenethyl)-ethyl-1H-1,2,4-triazole).....24%
Inert Ingredients.....76%

100.3 Application Methods, Directions, Rates

Refer to attached label

100.4 Target Organisms

Blossom Blight (Monilinia spp.)

100.5 Precautionary labeling

Environmental Hazards

Do not apply directly to water or wetlands. Do not contaminate water by cleaning of equipment or disposal of wastes. Do not apply when weather conditions favor drift or runoff from areas treated.

101.0 Hazard Assessment

101.1 Discussion

The objectives of the proposed program as described by the registrant is to:

1. To confirm product performance when applied in standard grower spray schedules and equipment.
2. To define optimum use rates, application timings and number of applications required for disease control and maximum nut quality and marketable yield.
3. Generate field residue data to support a Section 3 registration.
4. To provide opportunities to define and demonstrate

product performance characteristics for Rohm and Haas Company Sales and Marketing personnel, agricultural chemical dealers and distributors, University and Cooperative Extension Service personnel.

The EUP has been requested for a 24-month period on 250 acres in western California using 125 lbs. of active ingredient per year for 50 trials.

101.2

Likelihood of Adverse Effects to Nontarget Organisms

Environmental Fate Data

The following data was obtained from the Environmental Fate and Groundwater Branch review of EUP to test RH-7592 on stone fruit, submitted by Clinton Fletcher, Chemist, Review Section 1, EFGWD/EFED:

- . RH-7592 will be stable to hydrolysis at pH levels found in the environment.
- . RH-7592 will degrade in soil under aerobic conditions with a half-life of 285 and 367 days in Lawrenceville silty clay loam and Pasquotank sandy loam soils, respectively.
- . RH-7592 will degrade in soil under anaerobic conditions with a half-life of 451 and 655 days in the Lawrenceville silty clay loam and the Pasquotank sandy loam soils, respectively.
- . RH-7592 will be only slightly mobile to immobile in soils. Adsorption appears to be associated with percent organic matter present. RH-7592 will be slightly mobile in soils containing a low percent organic material (1%) and relatively immobile in soils with higher levels of organic material.
- . RH-7592 residues have only a slight potential to leach in the soil environment.
- . RH-7592 will not bioaccumulate in fish and any residues that are taken up will be depurated when fish are no longer exposed to RH-7592 residues.

The above data indicate that RH-7592 is quite stable and may be persistent in the environment (under aerobic conditions up to 367 days and under anaerobic conditions up to 655 days).

Terrestrial Hazard

RH-7592 may be characterized as practically non-toxic

on an acute basis to avian species (Bobwhite quail Colinus virginianus, LD₅₀>2150 mg a.i./kg).

RH-7592 may be characterized as slightly toxic on a subacute basis to avian species (Mallard duck Anas platyrhynchos, LC₅₀ of 2013 ppm, and Bobwhite quail Colinus virginianus, LC₅₀ of 4050 ppm).

RH-7592 may be characterized as relatively non-toxic to nontarget insects (Honey bee Apis mellifera, LD₅₀>292.18 ug a.i./bee).

RH-7592 may be characterized as practically non-toxic to nontarget mammals (Rat LD₅₀>2000 mg a.i./kg)

At a maximum application rate of 16 oz/A RH-7592 (equivalent to 0.25 lbs a.i./A) the maximum residue expected on such food items as insects and forage would be 3.0 ppm and 14.5 ppm respectively. These levels are significantly below the LC₅₀ values for Bobwhite Quail and Mallard Ducks with respect to RH-7592.

When the maximum residue levels are converted to equivalent LD₅₀ values and compared to the LD₅₀ value for the rat, they are found to be significantly less than the rat LD₅₀.

On the basis of these data, the proposed EUP does not pose a significant threat to birds, mammals, or insects.

Aquatic Hazard

Rh-7592, with a 96-hour LC₅₀ of 1.5 mg a.i./L for Rainbow trout Salmo gairdneri, is considered moderately toxic to coldwater fish. Data for the Bluegill sunfish (Lepomis macrochirus), 96-hour LC₅₀ of 0.68 mg a.i./L, indicate that RH-7592 is highly toxic to warmwater fish.

The 48-hour EC₅₀ for Daphnia magna of 2.3 mg a.i./L indicates that RH-7592 is moderately toxic to freshwater invertebrates.

Assuming a direct application to a pond 6 ft. deep and a maximum application rate of 0.25 lbs a.i./A, the resulting residue level in the water would be approximately 15.3 ppb. This concentration is less than one-tenth the LC₅₀ values for coldwater fish, warmwater fish and freshwater invertebrates. As such, RH-7592 does not pose a significant hazard to aquatic organisms as a result of single applications. However, according to the label instructions the potential

exists for multiple applications of RH-7592. Subsequently, the EPA Pesticide Residue Fate Simulation computer program was used to estimate the maximum and average residues expected from drift and runoff from a 10 acre treated area into a 1 acre pond, 6 ft. deep as a result of multiple applications of RH-7592. A maximum EEC of 5.2 ppb was calculated which is less than 0.01 LC₅₀ of warmwater fish (6.8 ppb). Based on this data the proposed EUP for use of RH-7592 on almonds should not pose a significant hazard to fish or aquatic invertebrates on a chronic basis.

Plant Hazard

Due to the low water solubility of RH-7592 (3.8 ppm) the hazard to aquatic plants should be minimal and aquatic plant growth testing on the freshwater green alga Selenastrum capricornutum will not be required at this time.

101.3 Endangered Species Consideration

RH-7592 Fungicide will be tested in 1 state on approximately 250 acres (see section 101.1). Because of the limited acreage treated and the low application rates proposed, this EUP does not pose a significant hazard to endangered species.

101.4 Adequacy of Toxicity Data

There were no new data or studies submitted to EEB to support the proposed EUP. However, through review of Data Evaluation Records for studies submitted earlier certain data gaps were discovered. Prior to section 3 registration the following data will be required:

- . Avian reproduction (preferably Mallard and Bobwhite)

Following review of required EEB data, submission of additional toxicity data may be necessary.

101.5 Adequacy of Labeling

The following statements should appear on the product label:

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Drift or runoff from treated areas may be

hazardous to aquatic organisms in adjacent aquatic sites. Do not contaminate water when disposing of equipment washwaters and rinsate.

The present and previous submissions of data used different systems of nomenclature by which to identify the active ingredient on the label. It is suggested that a single system of nomenclature be utilized for all future submissions.

102.0

Classification

Not classified

103.0

Conclusions

EEB has reviewed the proposed EUP for RH-7592 Fungicide on stone fruits. Environmental fate data indicate that RH-7592 is quite stable and may be persistent in the environment (under aerobic conditions up to 367 days and under anaerobic conditions up to 655 days).

Based on data available, the proposed EUP will not pose significant adverse effects to avian, mammal, insect, and fish or invertebrate species.


Due to the low water solubility of RH-7592, the proposed EUP will not pose significant adverse effects to aquatic plants.

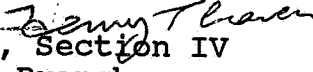
In light of the apparent persistence of RH-7592 and the label use recommendations the following acute and chronic study data will be required prior to section 3 registration:

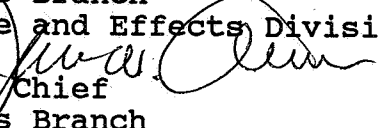
- . Avian reproduction (preferably Mallard and Bobwhite)

Following review of required EEB data, submission of additional toxicity data may be necessary.

Attachment

Harry A. Winnik  12-19-89
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Henry Craven, Head, Section IV  12/19/89
Ecological Effects Branch
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James W. Akerman, Chief  12/22/89
Ecological Effects Branch
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RUN 3477-95

EEB FENETHANIL REVIEW

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Pages _____ through _____ are not included.

The material not included contains the following type of information:

- Identity of product inert ingredients.
- Identity of product impurities.
- Description of the product manufacturing process.
- Description of quality control procedures.
- Identity of the source of product ingredients.
- Sales or other commercial/financial information.
- A draft product label:
- The product confidential statement of formula.
- Information about a pending registration action.
- FIFRA registration data.
- The document is a duplicate of page(s) _____.
- The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.