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Shaughnessy No: 100601

Date Out of EAB: MAY 10 1985

To: Donald Stubbs
Product Manager 41
Registration Division (TS-767)

From: Samuel M. Creeger, Chief
Environmental Chemistry Review Section 1
Exposure Assessment Branch
Hazard Evaluation Division TS-769c

Attached, please find the EAB review of:

Reg./File # : 85-CA-10

Chemical Name: Fenamiphos

Type Product : Nematicide/ Insecticide

Product Name : NEMACUR (Mobay)

Company Name : Department of Food and Agriculture, State of California

Purpose : Emergency exemption for use on Kiwis fruit in California.

Action Code : 510

Date Received : 3/15/85

Date Completed: 5/8/85

EAB #(s) : 5401

TAIS Code: 21

Reviewing Time: 0.3 days

Deferrals to:

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

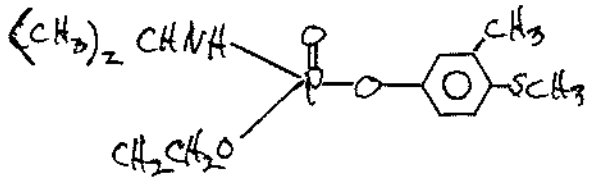
_____ Toxicology Branch

3 pages w/2 attachments

1. CHEMICAL: Fenamiphos, ethyl 3-methyl-4-(methylthio)phenyl-(1-methylethyl) phosphoramidate, nematicide/insecticide.

Trade Name- NEMACUR 3 (Mobay)

Chemical Structure-



2. TEST MATERIAL: Not applicable. No new data were submitted.

3. STUDY/ACTION TYPE: Request by the Department of Food and Agriculture of the State of California for an Emergency Exemption (Section 18) to use the insecticide NEMACUR 3 on Kiwi fruit to control nematodes. The proposed program will use about 495 lbs ai to treat 110 acres. Supporting information is attached.

4. STUDY IDENTIFICATION: Not applicable. No new data were submitted.

5. REVIEWED BY:

Herbert L. Manning, Ph.D.
Microbiologist
EAB/HED

Signature: Herbert L. Manning
Date: 10 May 1985

6. APPROVED BY:

Samuel M. Creeger
Chief, Section 1
EAB/HED

Signature: Samuel M Creeger
Date: MAY 10 1985

7. CONCLUSIONS:

There are currently no registered pesticides to control nematodes on bearing Kiwis in California. The proposed exemption is expected to greatly reduce the 76% crop loss that occurred in 1984.

Kiwis are a perennial vine crop and the data requirements for pesticide treatment would fall under an orchard crop. EAB files indicate the following studies have been satisfied for use of fenamiphos on an orchard crop:

- Hydrolysis
- Photodegradation- water
  " -soil

- Aerobic soil metabolism
- Leaching
- Field dissipation

8. RECOMMENDATION:

Almost all of the studies required for the orchard crop use of fenamiphos have been reviewed and found acceptable (see CONCLUSIONS). The one study that has not been satisfied is fish accumulation.

Without knowing the fate of fenamiphos in fish (Bluegill Sunfish, flow-though), the environmental fate under the proposed emergency exemption is not known.

Alternatively, if the registrant can show that fenamiphos, when used as proposed, will not impact on bodies of water, the fish accumulation study can be waived.

9. BACKGROUND:

A. Introduction

See Section 3 of this review and the attached information.

B. Directions for Use

See attached information.

10. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES:

A. Study Identification

Not applicable. No new data were submitted.

11. COMPLETION OF ONE-LINER:

No data were submitted.

12. CONFIDENTIAL APPENDIX:

There was no CBI in this submission.

DEPARTMENT OF FOOD AND AGRICULTURE
1220 N Street
Sacramento
95814

March 13, 1985

Mr. Donald Stubbs
Emergency Response Section, Room 716
Registration Division (TS-767C)
Environmental Protection Agency
Crystal Mall, Building 2
1921 Jefferson Davis Highway
Arlington, Virginia 22202

Dear Don

The California Department of Food and Agriculture requests a specific exemption to use Nemacur 3 on Kiwis for the control of nematodes. In addition, the Department requests an action level for Kiwi fruit treated with this product. This emergency exemption is not intended to circumvent the Section 3 registration requirements, but to alleviate a critical pest problem where registered alternatives are not effective. The justification for this emergency exemption request follows.

The Disease Problem

California growers of Kiwis are experiencing serious crop losses due to nematodes. The first confirmed case in Kiwis is located on 110 acres in Stanislaus County. Production has dropped 76% from the 1982 harvest when these vineyards were approaching their peak production years. Massive infestations of root knot nematodes and lesion nematodes have been diagnosed as the cause for these losses. There are no registered products for the control of nematodes on bearing Kiwis.

The Pests

The pests, root knot nematode, Meloidogyne species, and lesion nematodes, Prathylenchus vulna, feed on plant roots and root hairs. Their feeding causes a reduction of the plants' nutrient and water uptake which severely limits its growth. Kiwis are a shallow-rooted perennial vine crop that forms a dense root ball. This growing habit makes Kiwis very susceptable to nematode infestations, allowing damaging populations to build up in a short time.

The pest populations are visually detected by the presence of stunted growth and wilting during warm weather. Infestations are confirmed through microscopic examinations of roots and adjacent soil.

The Crop

Kiwi fruit (Chinese gooseberry) is a temperate zone fruit that is grown in both northern and southern hemispheres. Kiwis are grown on trellises, and

pruned back severely each winter. The fruit develops [illegible] and has a fleshy green texture with a citrus flavor. Fruit grown in California is picked in October, cold stored and sold until April when New Zealand imports begin. Presently, about 10,000 acres are planted in California, of which 6,000 acres are now bearing.

Alternative Control Measures

Generally, growers fumigate the soil to control nematodes before planting Kiwis. There are, however, no registered products for the control of nematodes in established Kiwi vineyards.

Economic Effects

The following chart provides an economic profile of the infested acreage in Stanislaus County.

	1984	1983	1982	1981
Crop Value ($ dollars)	93,224	147,770	449,148	210,693
Yield lb./A	214,724	314,405	895,297	405,161
Crop Loss	76%	65%	--	--

(1982 production figures used to determine crop losses. Bearing acreage was approaching years of prime production.)

It is estimated that at least 30 acres of the 110 acres infested with nematodes could sustain a total crop loss during the 1985 growing season. Nemacur treatments under the proposed program are projected to reduce these crop losses by 70-80%.

Proposed Program

The proposed program is outlined in the enclosed supplemental label. The label includes directions for use, precautions, and restrictions. Residue data are on file with EPA from Nemacur-treated peaches and cherries to support an action level for this use. In conjunction with the proposed program, samples can be taken from treated Kiwis to determine what residues, if any, are present.

An estimated 495 lbs. of active ingredient will be used on 110 acres to control nematodes under this exemption. Dr. James Beutel, Extension Pomologist, University of California at Davis, and Dr. Michael McKenry, Associate

Nematologist, Kearney Agriculture Center, Parlier, California 93648, may be contacted as knowledgeable experts. Dr. James Beutel can be contacted at (916) 752-0507, and Dr. Michael McKenry can be contacted at (209) 646-2794.

Thank you for your help with this exemption. If you have any questions, please contact David Haskell at (916) 322-5130.

Sincerely

Barry Cortez

Barry Cortez
Supervisor of Registration
Pesticide Registration
(916) 322-5130

DEPARTMENT OF FOOD AND AGRICULTURE
[illegible] N Street
Sacramento
95814

March 12, 1985

Proposed

CALIFORNIA AUTHORIZATION FOR [illegible] UNDER FIFRA SECTION 18
SPECIFIC EMERGENCY IN [illegible] DISTRICT [illegible] OF CROP WITHIN CALIFORNIA

Pursuant to authority granted under Section 18 of the Federal Insecticide, Fungicide and Rodenticide Act and 40 CFR, Part 166, approval is granted to use the pesticide shown below to control specified emergency.

Product: Nemacur 3 Reg. No. 3125-283
Location: Stanislaus County
Crop/Site/Commodity: Kiwis
Target Pest/Problem: Nematodes
Dosage: 1/2 gal. of product per acre (1.5 lbs. a.i.)
Dilution Rate: N A
Method of Application: Apply through drip irrigation system
Frequency/Timing of Application: Make 3 applications at 45-day intervals. Maximum of 4.5 lbs. a.i. applied per season. Start treatments when soil temperature in Spring reaches 58° F. (55° at 12" depth).
Worker Safety Reentry Interval: 48 hours unless [illegible] boots and gloves [illegible]
Preharvest Interval: 45 days
Effective Date: March 15, 1985
Expiration Date: August 30, 1985

Other Requirements: All applicable directions, restrictions, and precautions on the container label and this label must be followed. The Department shall be immediately informed of any adverse effects resulting from the use of this exemption.

a. Do not apply Nemacur 3 to newly established Kiwi vineyards which are less than one year old.

b. When this product is being applied through a drip irrigation system, at the entry point to the field, or if there are no obvious entry points, at every 600 feet there shall be signs posted that are readable at 25 feet that state (in English and Spanish): "DANGER! Pesticides are being applied in the water through the drip irrigation system. Do not drink water or walk on wet soil."

Instead of posting vineyards, the operator of the property may have a person present during the application period to keep bystanders, etc., from entering the application site

Please note that the EPA expects concerned growers or grower groups to work toward the registration of use patterns that may be needed on a continuing basis. It will therefore, be necessary to require applicants wishing to renew emergency exemptions to provide a residue tolerance and registration progress report along with requests for reissuance of an emergency exemption renewal. Without substantial progress

pursuing a tolerance and registration for this use in question, it will be difficult to obtain an emergency exemption from that agency. The pesticide manufacturer or Western Region IR-4 may be contacted regarding the initiation of a pesticide petition for residue tolerance.

A final report must be submitted to the county agricultural commissioner or Pesticide Registration, California Department of Food and Agriculture, within 15 days of the expiration date of this exemption. This report must include the following information:

a. Amount of product used.
b. Units (i.e., acres, trees, cattle) treated.
c. Number of applications.
d. Estimate of effectiveness.
e. Any adverse effects noted.

This labeling must be in the possession of the user at the time of pesticide application.

Prior to use under this exemption, a permit must be obtained from the county agricultural commissioner. The permit shall state the maximum number of acres to be treated, maximum amount of product that may be applied, and dealer from which the product may be purchased. Before sale or delivery of the product, the dealer must obtain a copy of the purchaser's permit or obtain a signed statement that he/she holds a valid permit to purchase, possess, and use the amount of the product purchased. The dealer shall maintain a record of each sale which shall be made available to representatives of the Department of Food and Agriculture or county agricultural commissioner upon request. Such records shall include the date of sale or delivery, permit number, identity and amount of product purchased, and the name of the purchaser. All applications of this material shall be made by or under the supervision of a certified applicator certified for this category of pest control. If this material is a liquid Category I pesticide, all applications will be made in accordance with California closed mixing system regulations. Applicators shall submit a pesticide use report to the county agricultural commissioner within seven days of each treatment. The county agricultural commissioner in cooperation with the Department of Food and Agriculture, will monitor the use of the product under this exemption and will prepare a written report describing any unusual or adverse effects attributable to this use.

This exemption does not constitute a recommendation of the Department of Food and Agriculture and will not prevent quarantine action if illegal residues are found in or on any crop. Neither the Department nor the county agricultural commissioner, manufacturer or formulator makes any warranty of merchantability, fitness of purpose, or otherwise, expressed or implied, concerning the use of a pesticide in accordance with these provisions. The user and/or grower acknowledges the preceding disclaimer and accepts liability for any possible damage or nonperformance resulting from this use.

Barry Cortez

Barry Cortez, Supervisor of Registration
Pesticide Registration
(916) 322-5130