

US EPA ARCHIVE DOCUMENT

S/N - 1

AN

EE BRANCH REVIEW

DATE: IN 5/9/80 OUT 5/14/80

FILE OR REG. NO. Section 18

PETITION OR (EXP. PERMIT NO.) _____

DATE DIV. RECEIVED _____

DATE OF SUBMISSION _____

DATE SUBMISSION ACCEPTED _____

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

DATA ACCESSION NO(S). _____

PRODUCT MGR. NO. D. Stubbs

PRODUCT NAME(S) Nemacur 35C

COMPANY NAME New Jersey Dept. Environmental Protection

SUBMISSION PURPOSE Request by New Jersey for use on bearing peach and
nectarine trees

CHEMICAL & FORMULATION Ethyl 3-methyl-4-(methylthio) phenyl
(1-methylethyl)phosphoramidate...35%

100.0 Section 18-Emergency Exemption

100.1 Nature and Scope of the Emergency

The proposed use of Nematicur 35C under this Section 18 emergency exemption is for control of nematodes contributing to "Peach Decline". This is a loss of trees resulting from destruction of cambium. Freezing, resulting from destruction of the lower bark by winter feeding of nematodes, causes the destruction of cambium. Control of the nematode population has consistently provided 100% control of "Peach Decline".

The economic loss due to "Peach Decline" results from a 15% loss of trees in the 2-8 year blocks, and a 4-5% loss in blocks planted to older trees. The older trees are thought to be more susceptible due to repeat attacks over the years. These trees do not respond to "painting" techniques designed to protect them from nematodes.

With the cancellation of DBCP nematicides, no nematicides are available for fruit-bearing peach and nectarine trees, although both Furadan and Nematicur are registered for non-bearing peach and nectarine trees.

100.2 Target Organisms

Ring nematode
Dagger nematode
Lesion nematode

100.3 Application Methods, Directions, Rates

Nematicur 35C will be applied by herbicide sprayer in a band from the drip-line of the tree to the base of the tree. It will be used at 3 1/3 gal/broadcast acre (43,560 sq.ft.). It will be slightly soil incorporated as it will be applied together with herbicides, necessitating "scratching" of the soil to about a 1 inch depth. Certified Applicator/Growers will perform the work. It will be used once, before December 1980. The program will be supervised by Dr. John Springer (609-455-3100) of Rutgers University, and the New Jersey Agricultural Experiment Station, who has previous experience with Nematicur and Peach Decline.

100.4 Environmental Hazards Statement

Toxic to fish and wildlife. Keep out of lakes, streams, or ponds. Birds feeding on treated areas may be killed.

100.45 Treatment Areas

Southern New Jersey counties.

101.0 Chemical and Physical Properties

See related reviews L. Touart (12/28/79) and By T. F. O'Brien, amended by Turner, for NemaCur on citrus (11/25/77) and non-bearing fruit trees (11/29/77).

103.0 Toxicological Properties

See review of L. Touart (1/14/80) for use on bearing apple, cherry, and peach trees.

104.0 Hazard Assessment

For additional information see NemaCur review for citrus by T. F. O'Brien (11/25/77) as amended by Turner (9/27/78).

The active ingredient, ethyl 3-methyl-4-(methylthio) phenyl (1-methylethyl)phosphoramidate, is 35% of the NemaCur 3SC. The application rate of 3 1/3 gal/acre = 10 lb. a.i/acre.

For the proposed band application NemaCur 3 at 10 lb. a.i/acre (broadcast) would result in a surface (top 0.1 inch) residue = 217.8 ppm.

104.2 Likelihood of Adverse Effects to Non-Target Organisms

With 3,000-4,000 areas being considered for treatment (John Springer, pers. comm.), the potential for exposure, although substantial is limited to counties in southern New Jersey, Avian, mammalian, and aquatic species could be exposed, with major exposure for birds feeding on fallowground, especially those feeding on soil arthropods, annelids, and crustaceans.

Fruit-bearing orchards have a particularly heavy wildlife utilization, with passerine songbirds being, perhaps, the most abundant. Nesting occurs for songbirds as well as utilization by quail, pheasants, deer, mice, porcupines, ground squirrels, woodchucks, and their predators.

NemaCur is highly toxic and the likelihood of exposure to wild species is therefore high enough that adverse ecological effects are possible. However, since the 3SC formulation will be used, the hazard normally associated with the granular forms (see Touart, 12/12/79) is substantially reduced.

Adverse effects are also possible for aquatic organisms. With LC₅₀ values in the ppb range (17 ppb for Bluegill and Rainbow Trout; 1.6 ppb for Daphnia), combined with high solubility and soil binding properties, Namacur could possibly be surface transported into aquatic environments at concentrations high enough to adversely affect these groups.

Beneficial insects are also at potential risk if they are present in orchards during application or later due to the systemic action on plants and persistence of the sulfoxide and sulfone degradates.

104.3 Endangered Species Considerations

Based upon the highly toxic nature of Namacur and its potential for aquatic and avian hazard, the proposed program could adversely impact any endangered species if they become exposed.

The only candidate endangered species is the Peregrine Falcon (Falco pregrinus). Since this is a bird of open country along rivers, lakes, and the coast, it could contact contaminated food organisms of treated orchards. The Peregrine's decline to endangered status has been attributed to pesticides. It is said that eating a single badly contaminated duck can cause a Peregrine to become infertile. Subacute, or reproductive effects are therefore possible if contact is made. Since the registrant in this case is the New Jersey Department of Environmental Protection, it is suggested that a coordinated effort be made within the Department to exclude treatment from areas thought to be used by Peregrines for feeding or nesting.

105.0 Conclusions

Due to the limited acreage, the one-time (1X) application, and the use of the less hazardous 3SC formulation, the Ecological Effects Branch does not object to the proposed emergency exemption for use of Namacur 3SC on fruit-bearing peach and nectarine trees in New Jersey. The registrant is notified that future "exemptions" are not likely to be looked upon favorably due to the aquatic hazards. It is suggested that, since repeat applications appear to be necessary to control Peach Decline, a Section 3 registration be sought for this use.

Before implementing this emergency program, the applicant is required to coordinate efforts within the Department of Environmental Conservation to exclude treatment from areas used by Peregrine Falcons for feeding/nesting. Every effort should be made to monitor for adverse effects to birds, fish, and aquatic

invertebrates, as this information will be extremely important, and probably be required, to support a Section 3 registration for NemaCur in this use pattern. A full report on any non-target mortality resulting from this emergency exemption, is required to be filed with this Branch as soon as it is available.

John J. Bascietto 5/29/80

John J. Bascietto
Wildlife Biologist, Section 1
Ecological Effects Branch/HED

Raymond W. Matheny 5/29/80

Raymond W. Matheny
Head, Section 1
Ecological Effects Branch/HED

Clayton Bushong 5/29/80

Clayton Bushong
Chief,
Ecological Effects Branch/HED

REPORT OF TELEPHONE CALL OR VISIT

X	INCOMING CALL	VISITOR
	OUTGOING CALL	CONGRESSIONAL

DATE: 5/13/80
 TIME OF CALL: 9AM
 PHONE NO. (Include Area Code or IDS No.): (609) 455-3100
 REGISTRATION, ID NO. OR FILE SYMBOL: Section 18 - N. Jersey
 DATE OF LATEST SUBMISSION: 5/9/80

NAME AND ADDRESS OF CALLER OR VISITOR:
 Dr. John K. Spinger
 N.J. Agricultural Experiment Station
 P.O. Box 231, Cook College
 New Brunswick, N.J. 08903

BRIEF SUMMARY OF CONVERSATION: to clarify some points in the application for Section 18 for Nemacur on fruit bearing peach and nut tree in N.J. Peach decline - due to weakness of tree by sunburn or winter freezing - tissue in lower 2' - 3' - a freeze - frost damage. South Jersey 3,000 acres to be treated. 1 fruit. Pests: R. ex nematode, D. sp. #, L. sp. #. already registered on non-bearing trees.

ACTION TAKEN OR RECOMMENDED:
 see section 18 review - New Jersey - nemacur 5/9/80 (phamaphos)
 He has past experience in supervising these types of programs. SO applicators / growers who are certified applications will be made with herbicides. 1 inch soil incorporation
 conditions of spraying - mainly to avoid phytotoxicity of drift
 a) wind < 5 mph
 a) "large" droplet size
 a) done first thing in morning (2-3 hrs.)

RECORDED BY (Name): John J. Sacciatto EEB/HED
 REFERRED TO (Name):



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
OFFICE OF PESTICIDE CONTROL
380 Scotch Road, West Trenton, N.J. 08628

April 24, 1980

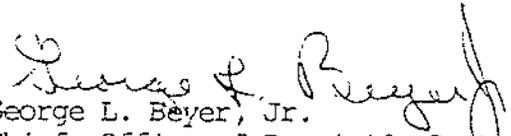
Mr. Donald Rodier
U.S. EPA
Registration Division ES-757
401 M St., S.W.
Washington, DC 20461

Dear Mr. Rodier:

As Chief of the Office of Pesticide Control in the Department of Environmental Protection in the State of New Jersey and the Governor's designee in these matters, we request your consideration for a specific exemption for the use of Nemacur 3SC for the control of nematodes on bearing peach and nectarine trees.

Please refer to the attached data to support this request.

Sincerely,


George L. Beyer, Jr.
Chief, Office of Pesticide Control

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SECTION 18 - OUTLINE FOR EMERGENCY EXEMPTION APPLICATIONS

Type: X Specific (complete all items)
 Quarantine-Public Health (complete items 1-7, 9,
Check and 10)
 One Crisis Notification (complete items 1-7 and 10)

Date: March 10, 1980

1. Name and Address of Applicant:

 New Jersey Agricultural Experiment Station

 P.O. Box 231, Cook College

 New Brunswick, NJ 08903

2. Telephone Number and Contact Individual:

 Dr. John K. Springer

 (609) 455-3100

3. Name of Pest: Nematodes

4. Site: Bearing Peach and Nectarine Trees

5. Description of Emergency: what is

 Peach Decline is a disorder which causes an annual loss of 15% of the trees in 2-8 year old blocks and 4-5% loss in blocks planted to older trees. Research has shown that Peach Decline results from winter injury to weakened trees and the principal cause of weakened trees is nematode feeding injury. Effective nematode control has consistently provided essentially 100% control.

With the cancellation of DBCP nematicides, no nematicide can be used for bearing peach trees. Both Furadan and Nematicur are cleared for non-bearing peach trees. Research has shown that nematode control on non-bearing trees delays the appearance of Peach Decline but does not eliminate this disorder. Mobay Chemical Corp. has submitted a petition for a national label on bearing peaches, nectarines, plums, cherries, apples and pears. Since this use pattern is not likely to be cleared for this season, we are requesting its use for New Jersey in 1980.

Last preferred date for treatment to start: May 15, 1980

6. (a) Registered pesticides for the Site/Past:

Chemical

- (1) None for bearing trees
- (2) Furadan 10G and 4F for non-bearing trees
- (3) Nemacur 15G and 3SC for non-bearing trees

Use Separate Continuation Sheet, If Needed.

(b) Brief description of why this chemical should not or cannot be used:

With the cancellation of DSCP nematicides, no nematicide can legally be used on bearing trees.

Use Separate Continuation Sheet, IF Needed.

6. (c) Other methods of control (biological, cultural, mechanical, etc.), a brief description of each method, a brief description of the control achieved by each method, and/or an explanation why each method should not or cannot be used.
- (1) Painting trunks of trees with a reflective paint is effective in orchards established in fields where peaches were not previously grown. This is ineffective in "old" orchard sites. - trees go dead w/ rot after
 - (2) A 5-6 year rotation is effective in delaying this disorder but does not eliminate it.
 - (3) Both 1 and 2 are practiced by most growers but nematicides are still needed to prevent this disorder.

Use Separate Continuation Sheet, If Needed.

7. Proposed Control Program:

(a) Pesticide(s) proposed for use:

- (1) Chemical - Formulation - EPA Reg. No.
Nemacur 3SC

*Similar
control
4-5
→ 1/2 lb
herbicide*

(b) Rate of Application:

3-1/3 gal of 3SC/43,560 sq.ft. (10 lbs ai/broadcast acre)

(c) Method of Application:

Apply with herbicide sprayer in a band from the drip-line of the tree to the base of the tree. Apply once to weed-free soil about First Cover Spray.

(d) Duration of Application (not to exceed one (1) year):

December, 1980

(e) Qualifications of Applicators:

Certified Applicators Only

8. Statement of economic benefits and losses anticipated with and without this exemption and under reasonable alternatives.

(a) Chemical costs:

With proposed exemption:

\$118.00/year/broadcast acre (\$56-\$58/planted acre)

With reasonable alternative:

None available

(b) Direct benefits or losses factor:

With proposed exemption:

Savings of \$1,500,000.00 in fruit loss from dead trees.

With reasonable alternative:

No alternatives - Loss of \$1,500,000.00 in fruit loss from dead trees.

Without controls:

Loss of \$1,500,000.00 in fruit loss from dead trees.

B. (c) Indirect benefits or losses factor:

With proposed exemption:

Prevent loss of 140,000 trees/year.

Average value of tree replacement cost plus labor costs to produce a bearing tree is approximately \$40/tree.

$140,000 \times \$40 = \$5,600,000.00$

With reasonable alternative:

No alternatives - Loss of \$5,600,000.00

Without controls:

Loss of \$5,600,000.00

(d) Total benefits or losses:

With proposed exemption:

Savings of \$7,100,000.00

With reasonable alternative:

None - loss of \$7,100,000.00

Without controls:

Loss of \$7,100,000.00

9. Analysis of possible adverse effects on the environment. Has the State Department of Fish and Game been alerted about this request? _____ Yes x No

What were their comments?

Has an Environmental Impact Statement (EIS), or similar statement required by State law been prepared for this use? _____ Yes x No. If yes, please enclose copy.

10. Suggested restrictions for the proposed program (for crisis notification--a description of steps being taken to reduce possible adverse effects on man or the environment).

(a) For use by Certified Applicators Only

(b) Make one application/year.

(c) Apply with a calibrated weed sprayer.

(d) Apply only during periods when conditions are unfavorable for drift.

50 applicators

*↓
suggested size
of area (2-3 mi)
< 5 mph*