

Chemical 1151C NEMIC Nemacur

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100601 common Reg 10023

12/6/73

chemical Ethyl 3-methyl-4-(methylthio)phenyl (1-methylethyl) phosphoramidate

Company Chemagro Div

Submission 3125-EIL, EIG, EIU, EIA

3F 1399

Date May 16, 1973

Type of chemical Nematicide

Use Bananas, cabbage, brussel sprouts, carrots, cotton, citrus, potatoes, sugar beets, peanuts, tomatoes, soy beans

Data submitted

Environmental safety

No additional data submitted for fish and wildlife.

Environmental chemistry (70-15)

1. Bioaccumulation in Bluegill Fish Exposed to ^{14}C -Nemacur Sulfide.

Study indicates that Nemacur, as its primary metabolite Nemacur sulfoxide, does not bioaccumulate in fish.

2. Nemacur has no apparent adverse effect on soil microorganisms.
3. Stability in water. Outdoor study using pond water Half-life about 5 days.
4. Leaching. Some leaching can occur in soils, but leaching would not expect to be an environmental problem
5. Other studies complete, others in progress.

Conclusion

1. This product is toxic to fish and wildlife. The use on turf has been recently accepted by F&W. Pineapple use also previously accepted.
2. This is a systematic nematocide applied at relatively high rates. Label calls for both band and broadcast soil incorporation.
3. Simulated field tests submitted to date show mortality to birds resulting from granular formulation and spray, even when soil incorporated.
4. Proposed uses - bananas, cabbage, brussel sprouts, carrots, cotton, citrus, potatoes, sugar beets, peanuts, tomatoes, soybeans.
The potential for wide scale use of Nematicur exists with the proposed uses.
5. The type of studies needed to fully evaluate hazard would be normally required under or during experimental permit.

Recommendations

1. Obj - See attached comments to registrant. (except EIU, OAR, OAR, OAR)
2. Field monitoring is necessary. The simulated field tests indicate a potential hazard. The next logical step is to evaluate under actual field conditions.
3. Review cannot be completed until such data are available.
4. Label for bananas is acceptable, however, no attempt has been made by reviewer to evaluate possible hazard to birds and other wildlife in banana growing areas. Registrant should be thus advised. Label bears appropriate wild life precautions.

NOTE:

Chemagro previously submitted applications for temp permits on tomatoes, cotton, peanuts etc. These were objected to and then withdrawn by registrant. We did not previously have an opportunity to ^{request} ~~offer~~ field data for the proposed uses.

W. A. Korman
12.11.73

Nemacur
Chemagro Corp

3125-E1L, E1G, ~~E1H~~, E1I

After careful review of all available data for Nemacur, we are unable to make a completely definitive determination of this product's safety to birds and other wildlife. Results from the simulated field tests have shown that birds caged over areas treated with Nemacur are subjected to ~~fatal~~^{lethal} quantities of pesticide. Additional environmental safety studies are needed to fully evaluate potential hazards under large scale use conditions. We offer the following comments and/or suggestions:

- 1) Field monitoring studies are needed. Studies similar to those recently reviewed for your Baygon submission would be most useful (Baygon - The Effect on The Environment 2F1244; NOV 1, 1971; report NO. 17626).
- 2) Both band and broadcast applications need to be evaluated.
- 3) Crops of special concern are cotton, soybeans, peanuts and citrus.

OL; 12/6/73 Jwa

Crop	acres	time of yr's	wildlife utilization
soybeans	42,409,000	Mar-May	Ala. - -
			Ark. - -
			deer Mar. Dec.
			Fla. - -
			deer Apr. Sept.
			Ill. Fox squirrel
			Ind. - poor resource
			Ia. - -
			deer June Oct.
			Ky. - -
			La. - -
			deer Apr. Dec.
			Md. - -
			Mich. - -
			deer June Dec.
			Miss. - -
			deer June Oct.
			rabbits Mar. Oct.
			Mo. pheasant (2)
			* prairie ch. (2)
			deer
			Neb. - -

Co. Hottail rabbits -
 feed on young plants
 many birds and mammals use the
 soybean for cover once the
 plants have grown sufficiently

Con't Soybean

<u>Crop</u>	<u>acreage</u>	<u>time of applic</u>	<u>wildlife utilization</u>
<u>soybean</u>	42,409,000	Mar - May	Ohio - pheasant

Rabbit

quail

songbird

deer

Upland game birds	***	young leaf and plants
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Okla. --

deer May-June

mammals	xx	leaf, plants
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SC --

deer (3)

hoofed browsers	*-xx	leaf, plant
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Vo quail

turkey

duck

duck

geese

rabbit

deer

<u>Sugar beets</u>	1,336,000	March, April, <u>May</u>	Cal. --
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Idaho pheasants (3)

Nev. pheasants -

songbirds -

Oregon --

Utah songbirds (1)

<u>Crop</u>	<u>acreage</u>	<u>time of applic</u>	<u>wildlife utilization</u>
<u>Citrus</u>		recommended summer in Fla.	Fla — — —

Arizona May-July
low usage by
many birds.

Cabbage 108,300

May^{III} Aug^{III} June^I Cal. rabbits (3)

Fla deer

Ga quail
rabbits (3)

deer

angels (1)

Tenn deer

rabbits

angels

+ other mammals

Tex incidental

Brussel Sprouts NO REPORT

Carrots 72,100 Apr-May Cal. rabbit (3)

Mich. — —

Texas deer

others incidental

Washington - pheasant 2

quail 2
jacksnipe 2
rabbits 2
squirrels 2

<u>Crop</u>	<u>acres</u>	<u>time of applc</u>	<u>wildlife utilization</u>
potatoes	1,380,000	Mar-April	Cal. songbirds (3) geese - (1) ducks - (3) deer (3)
Songbirds associated with insect populations			Texas - - -
			Maine - - -
			Nejron - - -
			Washington - songbirds
Sweet potatoes	110 REPORT	Cal.	- - -
			Fla - - -
Tomatoes	395,000	Ga	goshawk (2) phoebe (5) songbird (3)
			md ?
			N.J. - - -
			Ohio pheasant 2 ground songbirds 2-3
			S.C. - - -
			deer
			Tenn 1-2 ow many birds and mammals
			Va - - -

Hazard calculations

Label 10% granular

Crops up to 60 lb/A = 6 lb/A a.i.

Citrus " " 300 lb/A = 30 lb/A a.i.

Soil depth (")	6 lb/A (ppm)	30 lb/A (ppm)	
.5	26.5	132.3	active ingredient
1	13.23	66.15	
2	6.6	33.00	
3	4.4	22.2	
6	2.2	11.1	

$6 \text{ lb/A} = 62.46 \text{ mg/ft}^2$
 $30 \text{ lb/A} = 312.30 \text{ mg/ft}^2$ } on soil surface prior to incorporation.

LD_{50} for mallards = 1.0 mg/kg
" " quail = 0.8 mg/kg

FEW has previously accepted uses on pineapple and turf.