101201

(12)

# EEE BRANCH REVIEW

DATE: IN 4/17/79 OUT 12/28/79 IN _____ OUT _____ IN _____ OUT _____
FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. 239-2404

PETITION OR (EXP. PERMIT NO.) _____

DATE DIV. RECEIVED _____

DATE OF SUBMISSION _____

DATE SUBMISSION ACCEPTED _____

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

DATA ACCESSION NO(S). 238014, 238015, 238016

PRODUCT MGR. NO. (16) Marilyn Mautz

PRODUCT NAME(S) Monitor 4 Spray

COMPANY NAME Chevron Chemical

SUBMISSION PURPOSE amended registration on celery

CHEMICAL & FORMULATION O,S-Dimethyl Phosphoramidothioate.....40%

Inert Ingredients.....60%

Pesticide Name Monitor 4 Spray

100 Pesticide Label Information

100.1 Pesticide Use

Celery (Florida Only): For control of Dipterous leaf miners (Liriomyza sativae).

100.2 Formulation Information

Monitor® 4 Liquid Insecticide
O,S-Dimethyl Phosphoramidothioate .....40%
Inerts.....60%
4 lbs a.i./gallon

100.3 Application Methods, Directions, Rates

Apply 1 to 2 pints (0.5 to 1.0 lb active) per acre. Apply as needed. Up to five applications may be made at 7-day intervals. Do not apply within 21 days of harvest. Plants should be trimmed (tops removed) before shipping or use. Tops should not be used for feed or food.

101-102 See review by N. Cook 8/30/78, for Monitor® 4, Reg. No. 3125-280 .

103 Toxicological Properties

103.1 References from Toxicology Branch

Mammals -- Taken from N. Cook Review 9/7/78.

Rat $AOLD_{50}$ = 13 mg/kg

103.2 Minimum Requirements

Taken from N. Cook review of 8/30/78 and from R. Stevens review of 8/23/79.

103.2.1 Avian Acute Oral $LD_{50}$

| | | |
|---|---|---|
| Bobwhite Quail | 8.0 mg/kg | Supplemental |
| Mallard Duck | 29.5 mg/kg | " |
| Dark-eyed Junco | 8.0 mg/kg | " |

103.2.2 Avian Dietary $LC_{50}$

| | | |
|---|---|---|
| Bobwhite Quail | 57.5 ppm | Invalid |
| " " | 47.0 ppm | " |
| Mallard Duck | 847.6 ppm | Supplemental |

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103.2.3 Fish Acute $LC_{50}$

| | | |
|---|---|---|
| Rainbow Trout | 51 ppm (96 hr) | Supplemental |
| " " | 1.28 ppm (96 hr) | " |
| Bluegill Sunfish | 46 ppm (96 hr) | " |
| " " | 27 ppb (48 hr) | Invalid |

103.2.4 Aquatic Invertebrate $LC_{50}$

| | | |
|---|---|---|
| Daphnia | 27 ppb (48 hr) | Invalid |
| " | 76 ppb (48 hr) | Core |

103.3 Additional Terrestrial Laboratory Tests

103.3.1 Avian Reproduction Studies

From review by R. Stevens 8/23/79.

| | | |
|---|---|---|
| Bobwhite Quail | Reproductive impairment occurs at 5 ppm and higher. No effect level is between 3 and 5 ppm. | Core |
| Mallard Duck | No reproductive impairment up to and including 15 ppm Technical Monitor® | Core |

104 Hazard Assessment

See previous reviews by N. Cook 8/30/78, 9/7/78, D. McLane 2/9/79 and H. Craven 7/12/79.

104.2 Likelihood of Adverse Effects to Non-Target Organisms

See previous reviews. Included here are pertinent factors considered in current incremental risk analysis.

The proposed use provides for the following maximum expected residues after initial application:

| Vegetation Type/Insect/Surface | Residues from 1.0 lb a.i/acre |
|---|---|
| Sparse Foliage (short grasses) | 240 ppm |
| Long grasses | 110 ppm |
| Leafy situations | 125 ppm |
| Dense foliage/small insects | 58 ppm |
| Pods/seeds/large insects | 10-12 ppm |
| Fruits | 7 ppm |
| Soil (0.1 inch) | 22 ppm |

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Relative to repeated applications, accumulated residues in and on feed items can be expected to be as much as 33% higher than the values given above (based upon a 1/2 life of approximately 3.5 days and an application interval of 7 days for 5 applications). The average residues to be expected over a 35 day treatment period would be approximately 2/3 the initial residues.

Based upon the following dietary profile for the bobwhite quail:

| | |
|---|---|
| Seeds = | 76% |
| Animal Matter = | 10% |
| Forage = | 4% |
| Leaves and Leafy Crops = | 2.5% |
| Long Grass = | 2.5% |
| Short Grass = | 2.5% |
| Debris = | 2.5% |
| Total = | 100% |

The maximum expected residue of Monitor active ingedient in the feed of the bobwhite quail under the proposed use is 31 ppm and the average expected residue is 15 ppm.

Reproductive impairment occurred in bobwhite quail at 5 ppm and higher. Therefore, the proposed use of Monitor on celery poses a possibly serious chronic hazard to avian species which utilize such habitat.

104.3 Endangered Species Consideration

See review by N. Cook 9/7/78.

105-106 Classification/RPAR Criteria

Utilizing the information from the avian reproduction study for the Bobwhite quail, the chronic toxicity criterion set forth in Sec. 162.11 (a)(3)(ii)(c) has been exceeded. Reproduction in the Bobwhite quail is impaired at dietary concentrations of 5 ppm or greater and the average expected residue in the feed items of the Bobwhite range from 7.5 to 15 ppm, depending on application rate, with a maximum expected residue in feed items of 31 ppm.

107 Conclusions

The Ecological Effects Branch recommends against concurrence with the proposed use of Monitor 4 on celery in Florida. The proposed rates of application provide expected residues which exceed the chronic toxicity criteria for Rebuttable Presumption Against Registration (Sec. 162.11 (a)(3)(ii)(c)). Therefore, the proposed use of Monitor 4 on celery may pose an unreasonable hazard to avian species in the use area.

107.5 Data Requests

Exceeding Rebuttable Presumption Against Registration criteria indicates a hazard which may be negated by additional data. The data are normally obtained through simulated field studies and/or field monitoring studies.

Additionally, information required to support the proposed registration (if the RPAR issue in the above paragraph is resolved) are:

1. An avian dietary $LC_{50}$ (preferably with Bobwhite quail)

2. An avian acute oral $LD_{50}$ (preferably with Bobwhite quail)

The above studies should be done with the technical product of Monitor 4. Previously submitted studies were found unacceptable to support registration.

Note: If the registrant has any questions concerning the decision made in this review, he should contact the Ecological Effects Branch.

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