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SHAUGHNESSEY NO.

36
REVIEW NO.

EEB BRANCH REVIEW

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

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. H. Jacoby (21)

PRODUCT NAME(S) Nemacur Products

COMPANY NAME Mobay Chemical Corp.

SUBMISSION PURPOSE Submission of data to update Agency files

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
100601	Fenamiphos	

5 pages

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

APR 22 1985

SUBJECT: EEB's comments on data submitted to update file on Nemacur (active ingredient fenamiphos)

TO: H. Jacoby
Product Manager, Team 21
Registration Division (TS-767)

THRU: David Coppage
Section Head (3)
Ecological Effects Branch
Hazard Evaluation Division (TS-769c)

THRU: Michael Slimak
Branch Chief
Ecological Effects Branch
Hazard Evaluation Division (TS-769c)

The data received under EPA Accession No. 256004 have been reviewed by EEB under previous submissions. Conclusions are provided below.

1. Internal Report from Denver Wildlife Research Center (prepared by R. H. Hudson, August, 1972)

   The data relating the effects of Nemacur on California quail cannot be used to fulfill the guidelines requirement for an acute oral toxicity study on an upland species. The information in the test report was insufficient for a complete evaluation of the results. Mortality data and test concentrations were not provided.

   The information relating the percutaneous effects of Nemacur on mallards is contained in the published document by Hudson et al. (1979). Currently this type of information is not required to support the registration of a pesticide product. However, the results presented in Hudson et al. (1979) indicate that fenamiphos is highly dermally toxic to mallards (24 hr. LD_{50} 23.8 mg/kg; 95% C.L. 17.5 - 32.4 mg/kg)

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2. Lamb, D.W., 1982. Acute Oral LD_{50} of Nemacur Technical to Bobwhite Quail. Study No. 81-015-02. Prepared by Mobay Chemical Corp., Stilwell, Kansas.

   This study was found to be scientifically sound and may be used to fulfill a guidelines requirement for an acute oral test on ;an upland bird species. With an LD_{50} of 1.7 mg/kg (95% C.I. 1.3 to 2.3 mg/kg), Nemacur is considered to be very highly toxic to Bobwhite Quail.

3. Gross Observations on Non-Target Organisms (Non-Bearing Deciduous Fruit)

   The series of observations made to detect effects of field applications of Nemacur on non-targets cannot be used to fulfill a guidelines requirement for a terrestrial field study. The data as presented are insufficient for evaluation. Observations were subjective and infrequent. Test methodology, site conditions and results are inadequately reported.

4. Lamb, D.W., June, 1982. Nemacur 3 Field Study with Bobwhite Quail. Study No. 81-905-01. Prepared by Mobay Chemical Corporation. Stilwell, Kansas.

   This study is scientifically sound and considered acceptable for use in a hazard assessment. The results may be used to support registration of certain uses/formulations of Nemacur.

5. Lamb, D.W. and M.A. Carsel. July, 1982. Fenamiphos Reproduction Study with Bobwhite Quail. Study No. 80-675-03. Prepared by Mobay Chemical Corporation, Stilwell, Kansas.

   This study is scientifically sound and demonstrates that chick survival is significantly reduced in Bobwhite Quail exposed to dietary concentrations of 8.0ppm fenamiphos. This study fulfills a guideline requirement for an avian reproduction study on an upland species.

6. Lamb, D.W. and M.A. Carsel. July, 1982. Fenamiphos Reproduction Study with Mallard Duck. Study No. 81-675-01. Prepared by Mobay Chemical Corporation, Stilwell, Kansas.

   This study is scientifically sound and demonstrates that dietary exposure as low as 8ppm can adversely effect reproduction in Mallard Ducks. This study fulfills a guidelines requirements for an avian reproduction study on a waterfowl species.

7. Carlisle, J.C. August, 1982. Nemacur 3 Avian Field Study. Study No. 82-905-01. Prepared by Mobay Chemical Corporation, Stilwell, Kansas.

   This study is scientifically sound and acceptable for use in a hazard assessment. The results indicate that high rates of Nemacur 3 can pose a hazard to birds and small mammals that forage in treated areas. This study cannot be used to fulfill a guidelines requirement for a full terrestrial field study. This is mainly because the study area was not fully identified, body weights of dead birds were not reported, dead birds were not individually identified, concurrent control plots were not utilized, residues on dietary items and soil were not measured and the number of test plots were insufficient. The results do not fully indicate the potential for adverse effects to non-targets exposed to field applications of Nemacur.

8. Lamb, D.W. and D.J. Roney. June, 1972. Acute Toxicity of Nemacur Technical and Nemacur 15% Granular to Fish. Prepared by Chemagro Division of Baychem Corporation.

   These studies relating the acute toxicity of technical and 15G Nemacur to fresh-water fish are scientifically sound and are acceptable for use in a hazard assessment. Further acute testing on fish may be required to support registrationn of uses where a significant aquatic exposure is anticipated. These studies did not include information on the chemical/physical characteristics of test water during the assay. D.O., pH and hardness can significantly alter the toxicological properties of a test chemical. Nemacur is very highly toxic to freshwater fish, thus thorough testing is imperative.

9. Lamb, D.W. and D.J. Roney. November, 1972. Acute Toxicity of Nemacur Sulfoxide to Bluegills. Prepared by Chemagro Division of Baychem Corporation.

   This study is acceptable for use in a hazard assessment. The results provide supplemental information on the toxicological properties of Nemacur sulfoxide, a breakdown product of the active ingredient. This study cannot be used to fulfill a guidelines requirement for an acute toxicity test using the technical product.

10. Lamb, D.W. November, 1972. A Test for Bio-Accumulation in Fish Exposed to Nemacur Sulfoxide - ^{14}C. Prepared by Chemagro Division of Baychem Corporation.

    This study should be submitted to the Exposure Assessment Branch for review.

Elizabeth E. Zucker
Wildlife Biologist
Ecological Effects Branch
Hazard Evaluation Division

Citation: Hudson, R.H., M. Haegele and R.K. Tucker. 1979. "Acute Oral and Percutaneous Toxicity of Pesticides to Mallards: Correlations with Mammalian Toxicity Data" Tox. Appl. Pharm. 47, 451-460.