(TDR03B) DATA EVALUATION RECORD PAGE 1 OF 3

CASE GS0109 TERBUFOS PM ~~04/15/82~~

CHEM 105001 Terbufos (S-(((1,1-dimethylethyl)thio)

BRANCH EEB DISC 55 TOPIC 10154046

FORMULATION 04 = GRANULAR

FICHE/MASTER ID 05009340 CONTENT CAT 01

Tomlin, A.D.; Gore, F.L. (1974) Effects of six insecticides and a fungicide on the numbers and biomass of earthworms in pasture, Bulletin of Environmental Contamination and Toxicology 12(4):487-492.

SUBST. CLASS = S.

DIRECT RVW TIME = (MH) START-DATE 17 NOV 1982 END DATE 17 NOV 1982

REVIEWED BY: Allen W. Vaughan
TITLE: Entomologist
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SIGNATURE: Allen W. Vaughan DATE: 11/29/82

APPROVED BY:
TITLE:
ORG:
LOC/TEL:

SIGNATURE: DATE:

3 pages

1. CHEMICAL: terbufos (AC 92100)

2. FORMULATION: 15 G

3. CITATION: Tomlin, A.D., and F.L. Gore. 1974. Effects of six insecticides and a fungicide on the numbers and biomass of earthworms in pasture. Bull. Envir. Contam. and Toxicol. 12(4): 487-492. FICHE/MASTER ID 05009340

4. REVIEWER: Allen W. Vaughan
Entomologist
EEB/HED

5. DATE REVIEWED: November 17, 1982

6. TEST TYPE: Toxicity to soil invertebrates

A. Test species: earthworms

7. REPORTED RESULTS: Treatment of a pasture with terbufos (AC92100) resulted in earthworm population reduction of 92.9% over control and biomass reduction of 95.9% over control. Treatment rate was 3.4 kg AI per hectare.

8. REVIEWER'S CONCLUSIONS: This study is scientifically sound, and shows terbufos to cause significant reductions in populations of earthworms.

2

Materials and Methods

Test Procedure

Experiment was conducted on pasture plots. Pesticides were applied to the ground but were not incorporated into the soil. Sampling was accomplished by treating the plots with a dilute formalin solution, which drove worms to the surface for counting. Plots were sampled prior to, and 21 days after, treatment.

Statistical Analysis (authors' discussion)

For the randomised block design experiment, in order to establish the within plot variances, the data for both counts and biomass were transformed by $\log_{10}$ [X + 1], where X is measured response per quadrat (for either counts or biomass). This is a standard transformation to use when the standard deviation is related to the mean as was the case with these data. Statistical analysis revealed that the treatments were a highly significant source of variation ($P<.001$). For transformed counts: the standard error (SE) of treatment means was 0.0534 and for the control mean was 0.0378 while the SE of the difference between a treatment mean and the control mean was 0.0654. FOr transformed biomass: the SE of treatment mean was 0.0573 and for the control mean was 0.0405, while the SE of the difference between a treatment mean and a control mean was 0.0701. The SE of control means is lower than the SE of the treatment means because more observations were taken for the control (4/block for control and 2/block for treatments).

Discussion/Results

See "Reported Results," above.

Reviewer's Evaluation

A. Test Procedures

Procedures were sound.

B. Statistical Analysis

Analysis as performed by the authors was assumed to be valid. No validation was performed by EBR.

C. Discussion/Results

This study is scientifically sound.