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105001
SHAUGHNESSEY NO.

21
REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 5-9-84 OUT 6-12-84

FILE OR REG. NO. 241-238

PETITION OR EXP. PERMIT NO.

DATE OF SUMBMISSION 4-13-84

DATE RECEIVED BY HED 5-4-84

RD REQUESTED COMPLETION DATE 6-20-84

EEB ESTIMATED COMPLETION DATE 6-16-84

RD ACTION CODE/TYPE OF REVIEW 660/Reg. Std.

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

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. W. Miller (16)

PRODUCT NAME(S) Counter

COMPANY NAME American Cyanamid Company

SUBMISSION PURPOSE Submission of Further Avian Data in support of Registration Standard

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
105001	terbufos	87.8%

5 pages

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

18 JUN 1984

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

TO: W. Miller, PM Team 10
Registration Division, TS-767c

THRU: Dave Coppage
Head, Sec. 3
Ecological Effects Branch
Hazard Evaluation Division, TS-769c

THRU: Clayton Bushong
Branch Chief
Ecological Effects Branch
Hazard Evaluation Division, TS-769c

Subject: Review of Data Acceptability - Terbufos/Avian dietary LC_{50} with Bobwhite Quail.

EEB has reviewed the following avian dietary toxicity study of terbufos with bobwhite quail:

Beavers, J.B. and M. Jabar. 1984. A dietary LC_{50} study in the Bobwhite quail with AC, 92, 100. Performed by Wildlife International, Ltd.; submitted by American Cyanamid.

The above study is assigned Accession No. 253092 and is submitted under Reg. No. 241-238.

EEB finds the study is scientifically sound and fulfills a guidelines requirement for an avian dietary LC_{50} study with an upland game species.

John Bascietto
Wildlife Biologist, Sec 3
Ecological Effects Branch
Hazard Evaluation Division, TS-769c

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File No. 105001

DATA EVALUATION RECORD

1. CHEMICAL: Terbufos

2. FORMULATION: "AC 92,100 Counter terbufos OP Insecticide" (87.8% a.i.)

3. CITATION: Beavers, J. B. and M. Jaber. 1984. A dietary LC_{50} study in the Bobwhite quail with AC 92,100, by Wildlife Inernational for American Cyanamid. Acc. No. 253092. Reg. No. 241-238

4. REVIEWED BY: John J. Bascietto
Wildlife Biologist
Ecological Effects Branch/HED

5. DATE REVIEWED: 6/12/84

6. TEST TYPE: Avian dietary toxicity (8-day LC_{50})

a) Bobwhite quail (Colinus virginianus)

7. REPORTED RESULTS:

LC_{50} = 157 (125-201) ppm

8. REVIEWER'S CONCLUSIONS:

The study is scientifically sound. With a LC_{50} = 157 (125-201) ppm terbufos technical is considered "highly toxic" to bobwhite when administered in the diet. The study fulfills a requirement for an eight-day dietary toxicity study on an upland game species.

9. Materials/Mehtods

A. Procedure: the study was conducted in accordance with the EPA Pesticide Assessment Guidelines (1982).

B. Statistical Analysis: The raw mortality data was analyzed "by probit analysis using the Statistical Analysis System (SAS) program"

10. Results

	conc. (ppm)	Number Dead/Number Exposed Day 8
Control	0	0/10
	0	0/10
	0	0/10
	0	1/10
	0	0/10

Cummulative Control mortality was 2%

Terbufos	56.2	0/10
	100.0	1/10
	178.0	6/10
	316.0	10/10
	652.0	10/10

At 56.2 ppm - no mortality; no observations of signs of poisoning; no effect on body weight gain or food consumption.

At higher levels tested signs of toxicity "were similar". These included: "depression (lethargy), reduced reaction to sound and movement, wing droop, loss of coordination, prostrate posture, lower limb rigidity, a ruffled appearance and lower limb weakness".

At 100 ppm - toxic signs appeared on Day 4 and disappeared by Day 6. There was a reduction in body weight gain. Food consumption was similar to controls.

At 178 ppm - signs of toxicity appeared on Day 3 and persisted to Day 6. Body weight gain was slightly reduced compared to controls. Food consumption was similar to average control values for Day 0-5 and Day 6-8 but slightly less than the 56.2 and 100 ppm treatment groups.

At 316 ppm - Signs first noted on Day 2.

At 562 ppm - " " " at two(2) hours after exposure. Total mortality at both of the high concentrations prevented meaningful comparison of body weight and food consumption data.

11. Reviewer's Evaluation

A. Procedures: the procedures, materials and methods used were acceptable under the current guidelines.

B. Statistical Analysis: the method used (SAS) is completely acceptable and generally provides an accurate result.

C. Results

The dietary toxicity of the compound appears to be "highly toxic" according to EEB's classification. No adjustment to the LC_{50} is necessary since the diet preparation method corrects for 100% a.i. to prepare nominal concentrations.

The onset of the signs of toxicity appears to be dose-related, as does the effect on body weight gain inhibition. There does not appear to be a palatability problem.

D. Conclusions

1. Category - Core

2. Rationale - Guidelines

3. Repair - N/A