

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 SUBMISSION 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.
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<u>105001</u>	<u>terbufos</u>	<u>87.8%</u>
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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 *DC*
Head, Sec. 3
Ecological Effects Branch
Hazard Evaluation Division, TS-769c

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

Subject: Review of Data Acceptability - Terbufos/Avian dietary LC₅₀
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 LC₅₀ 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 LC₅₀ study with an upland game species.

John Bascietto

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

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 LC₅₀ study in the Bobwhite quail with AC 92,100, by Wildlife International 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 LC₅₀)
a) Bobwhite quail (Colinus virginianus)
7. REPORTED RESULTS:

LC₅₀ = 157 (125-201) ppm
8. REVIEWER'S CONCLUSIONS:

The study is scientifically sound. With a LC₅₀ = 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/Methods

- 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

<u>conc.</u> (ppm)		<u>Number Dead/Number Exposed</u> <u>Day 8</u>
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 IC₅₀ 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