

US EPA ARCHIVE DOCUMENT

CASE GS0109 TERBUFOS PM 04/15/82

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

BRANCH EEB OISC 40 TOPIC 05050045

FORMULATION 00 - ACTIVE INGREDIENT

FICHE/MASTER ID 05009819 CONTENT CAT 01

Tomlin, A.O. (1975) The toxicity of insecticides by contact and soil treatment to two species of ground beetles (Coleoptera: Carabidae). Canadian Entomologist 107(5):529-532.

SUBST. CLASS = S.

OTHER SUBJECT DESCRIPTORS

SEC: EEB -40-15000045

DIRECT RVW TIME = (MH) START-DATE 17 NOV 1981 END DATE 17 NOV 1982

REVIEWED BY: Allen W. Vaughan
TITLE: Entomologist
ORG: EEB/HED
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SIGNATURE: *Allen W. Vaughan*

DATE: 11/29/82

APPROVED BY:
TITLE:
ORG:
LOC/TEL:

SIGNATURE:

DATE:

1. CHEMICAL

fensulfothion, Counter (terbufos), methomyl, carbofuran, phorate, WL 24073, dieldrin, chlorfenvinphos, leptophos, p, p¹ - DDT, heptachlor, aldrin, tetrachlorvinphos.

2. FORMULATION:

Technicals

3. CITATION:

Tomlin, A.D. (1975) The toxicity of insecticides by contact and soil treatment to two species of ground beetles (Coleoptera: Carabidae)- Canadian Entomologist 107(5):529-532. FICHE/MASTER ID 05009819.

4. REVIEWER:

Allen W. Vaughan
Entomologist
EEB/HED

5. DATE REVIEWED:

November 17, 1982

6. TEST TYPE:

Toxicity to insect predators
A. Test species: Ground beetles --
Stenolophus comma,
Pterostichus melanarius

7. REPORTED RESULTS:

Terbufos was highly toxic to adult S. comma at concentrations of 0.01% and above, when exposure was through direct contact. At .09 ppm (dry weight in soil), terbufos was highly toxic to larvae of P. melanarius. For numerical data and results of testing with other pesticides, see tables.

8. REVIEWER'S CONCLUSIONS:

This study is scientifically sound, and shows terbufos to be highly toxic to 2 species of ground beetles.

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Methods and Materials

Test Procedures

Adult beetles (S. comma) were exposed to pesticides using a Potter spray tower. Solutions were made up in a 19:1 acetone:olive oil solvent mixture. Following treatment the beetles were kept at 20°C with food and water for 24 hr. in glass petri dishes.

Beetle larvae (P. melanarius) were reared in the laboratory. Insecticide solutions were made up in distilled n-pentane and applied to soil. Larvae were placed in small holes poked in the soil.

Statistical Analysis

Abbott's formula was used to correct for control mortality.

Discussion/Results

See tables.

Reviewer's Evaluation

A. Test Procedure

Procedure is sound.

B. Statistical Analysis

Abbott's formula used.

C. Discussion/Results

This study is scientifically sound.

Table I. Direct contact toxicity of some insecticides to the adults of the ground beetle Stenolophus comma

Insecticide	Av. 24-h mortality at indicated %insecticide solution.			
	0.001	0.01	0.1	1.0
Fensulfothion	0	100	100	100
Counter (R) (terbufos)	17	92	100	100
Methomyl	0	83	100	100
Carbofuran	5	70	100	100
Phorate	5	65	100	100
WL24073	0	15	100	100
Dieldrin	5	18	85	100
Chlorfenvinphos	0	3	18	100
Leptophos	0	8	15	100
P,p'-DDT	8	8	18	98

Table II. Toxicity of some insecticide soil treatments to first-instar larvae of the ground beetle Pterostichus melanarius

Insecticide	Av. corrected & mortality at indicated p _{pm} * in soil after 24 h													
	.01	.05	.09	.1	.2	.4	.5	.8	1.0	2.0	5.0	6.0	7.0	10.0
Phorate	0	83	89	95	100	100								
Heptachlor	0	60	100	100	100									
Counter (R) (terbufos)	0	45	70	100	100	100								
WL24073	-	-	-	75	90	-	100	100	100	100				
Aldrin	-	0	21	69	-	-	100	-	100					
Carbofuran	-	0	10	13	50	100	100	-	100					
Methomyl	-	0	-	0	25	45	-	40	-	100	100			
Fensulfothion	-	-	-	-	17	18	55	100	100	100				
Tetrachlorvinphos	-	-	-	-	0	0	14	67	98	100				
Chlorfenvinphos	-	-	-	0	-	-	0	-	0	0	2	24	69	88
Leptophos	-	-	-	-	-	-	0	-	0	0	14	-	-	19
P,p'-DDT	-	-	-	0	0	-	0	-	0	0	0	-	-	0

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