

05000837

ENDOSULFAN

9.27.79

DATA EVALUATION RECORD

1. CHEMICAL: See Table 1
2. FORMULATION: See Table 1.
3. CITATION. Johansen, C.A. (1972) Toxicity of Field-Weathered Insecticide Residues to Four Kinds of Bees. Environmental Entomology 1 (3): 393-394. Fiche ID 05000837.
4. REVIEWED BY: R.M. Lee
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Ecological Effects Branch/Hazard Evaluation Division
5. DATE REVIEWED: 9/27/79
6. TEST TYPE: Bee residue toxicity test

A. Test Species:

- 1) honey bee: Apis mellifera L.
- 2) alkali bee: Nomia melanderi Cockerell
- 3) leafcutter bee: Megachile rotundata (F.)
- 4) bumble bee: Bombus centralis Cresson
B. rufocinctus Cresson.

7. REPORTED RESULTS

The test results (as shown in Table 1) indicate that Temephos, Tetradifon, Phosalone and Isopropyl parathion were the least toxic against all the bee species tested. Imidan and Malathion were extremely toxic against both the honey bee and the alfalfa leafcutter bee. Endosulfan also produced 100% mortality in the alkali bees.

8. REVIEWER'S CONCLUSION: The study is scientifically sound. See table 1 for percent mortality data. However determinations of 24-h acute contact LC₅₀ and residual LD₅₀ are required for accurate assessment of bee hazard, although guidelines for regulatory requirement is not established at present.

SEE TEMEPHOS FILE
FOR COMPLETE
DATA EVALUATION
RECORD

Table 1.-Effect of insecticide residues on alfalfa to alfalfa leafcutter bees (LB). alkali bees (AB), and honey bees (HB).

Insecticide	Lb/acre	Age of residues	24-hr % mortality		
			LB	AB	HB
Biothion 4 lb EC	0.5	3 hr	21	12	9
Carbaryl 80% WP	1.0	2 days	85	78	69
Carbophenothion 4 lb FP	1.5	3 hr	89	33	6
Demeton 2 lb EC	.5	6 hr	26	19	1
DDT 1 lb EC	1.5				
+ toxaphene 2 lb EC	3.0	3 hr	94	68	55
Dicofol 4 lb EC	1.0	3 hr	2	7	8
Dicrotophos 9 lb EC	.5	2 days	40	29	7
Dimethoate 2.67 lb EC	.5	2 days	45	30	4
Endosulfan 2 lb EC	1.0	3 hr	71	100	11
Gardona 2 lb EC	1.0	3 hr	70	26	4
Galecron 95% SP	1.0	3 hr	0	0	0
Imidan 50% WP	1.0	3 hr	100	63	98
Isopropyl parathion 3 lb EC	1.0	10 hr	8	0	0
Malathion 5 lb EC	1.0	6 hr	100	47	100
Methomyl 90% WP	1.0	1 day	65	40	1
Methyl parathion 4 lb EC	.5	10 hr	71	48	89
Naled 8 lb EC	.5	3 hr	100	30	21
Omite 6 lb EC	1.5	3 hr	18	12	1
Parathion 4 lb EC	.5	10 hr	50	66	41
Phosalone 3 lb EC	1.5	3 hr	14	13	0.
Phosphamidon 8 lb EC	.5	2 days	30	23	10
Phosvel 3 lb EC	1.0	3 hr	100	63	3
Schradan 90% IS	1.0	3 hr	89	6	0
Tetradifon 1 lb EC	.75	3 hr	20	5	0
Trichlorfon 50% SP	1.0	3 hr	5	31	17