11-5-80

MULTIPLE

TDMS0030 DATA EVALUATION RECORD PAGE 1 OF 3

CASE GS0014 ENDOSULFAN - A (10/19/79) PM 110 ~~11/21/79~~

CHEM 079401 Endosulfan (hexachlorohexahydromethanol)

BRANCH EEB DISC 40 TOPIC 05050025 GUIDELINE 40 CFR

FORMULATION 12 - EMULSIFIABLE CONCENTRATE (EC OR E)

FICHE/MASTER ID 05008936 CONTENT CAT 01

Clinch, P.G. (1967) The residual contact toxicity to honey bees of insecticides sprayed on the white clover (Trifolium repens L) in the laboratory. New Zealand Journal of Agricultural Research 10(2):289-300.

SUBST. CLASS = S.

DIRECT RVW TIME = 4 Hr. (MH) START-DATE 8/15/80 END DATE 8/18/80

REVIEWED BY: Allen W. Vaughan
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SIGNATURE: Allen W. Vaughan DATE: 11/5/80

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ORG:
LOC/TEL:

SIGNATURE: DATE:

entered D base

CONCLUSIONS: This study is scientifically sound.

METHODS AND MATERIALS:

A. Test Type - Toxicity to honey bees.

B. Test Species - Honey bee (Apis mellifera)

C. Test Procedures - A spray tower was used to apply test insecticides to clover blossoms. Honey bees were caged on the blossoms for a one hour period at various time intervals following application. Mortality was assessed 24 hours later.

D. Statistical Analysis - Results were corrected for control mortality using Abbott's formula.

REPORTED RESULTS: A spray tower was adapted to enable application of insecticide sprays to clover blossoms. Honey bees were enclosed with the flowers for an hour (3 hours after application) to determine the residual contact toxicity of the spray. Endosulfan 35% EC, applied at a rate equivalent to 0.77 lb a.i./acre, caused no more than 2% mortality in any of the tests. See table for other results.

Data indicated that endosulfan was among the safest of the insecticides tested, at a rate equivalent to 0.77 lb a.i./acre.

DISCUSSION:

A. Test Procedure Procedure is sound.

B. Statistical Analysis Abbott's formula only - see above.

C. Discussion/Results This study is scientifically sound.

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TABLE 1. Residual toxicity

Insecticide	Formulation and % active material	Equivalent rate of application per acre (lb active material)	Residual Contact: Time between application and exposure (hours)	Residual Contact: Percentage mortality* 24 hours after exposure to deposits on white clover flowers: Full rate	1/2 rate	1/4 rate	1/8 rate
1.Carbaryl	WP 80% W/W	2.00	18	100	97	97	63
			42	100	100	95	58
2.Diazinon	WP 40% W/W	1.00	18	100	100	65	43
			42	95	26	13	1
3.Malathion	EC 50% W/V	1.25	18	97	33	9	7
			42	66	3	5	—
4.Malathion	WP 25% W/W	1.25	18	100	99	51	0
			42	100	69	0	0
5.Phentho-ate	EC 50% W/V	1.25	18	100	100	67	25
			42	100	98	5	2
6.DDT	EC 20% W/V	1.00	3	2	3	0	—
7.DDT	WP 50% W/W	1.00	3	100	65	49	49
8.Demeton-O-methyl	EC 25% W/V	0.38	3	0	0	3	—
9.Endosulfan	EC 35% W/V	0.77	3	0	2	0	—
10.Oxydemeton-methyl	EC 25% W/V	0.38	3	0	2	0	—
11.Trichlorfon	SP 80% W/W	1.20	3	0	0	0	—
12.Vamidothion	EC 40% W/V	0.50	3	37	5	0	—

*Corrected for mortality in the controls using the method of Abbott (1925).

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