11-4-80

MULTIPLE

TDMS0030 DATA EVALUATION RECORD PAGE 1 OF 4

CASE GS0014 ENDOSULFAN PM 110 ~~08/12/79~~

CHEM 079401 Endosulfan (hexachlorohexahydromethano)

BRANCH EEB DISC 40 TOPIC 05050045

FORMULATION 00 - ACTIVE INGREDIENT

FICHE/MASTER ID 05005572 CONTENT CAT 01

Searle, C.M.S.L. (1965) The susceptibility of Pauridia peregrina Timb (Hymenoptera: Encyrtidae) to some pesticide formulations. Journal of the Entomological Society of South Africa 27(2):239-249.

SUBST. CLASS = S.

OTHER SUBJECT DESCRIPTORS
PRIM: FFB -20-150520

DIRECT RVW TIME = 3 Hr. (MH) START-DATE 2/1/80 END DATE 2/1/80

REVIEWED BY: Allen W. Vaughan
TITLE: Entomologist
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SIGNATURE: Allen W. Vaughan DATE: 11/4/80

APPROVED BY:
TITLE:
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LOC/TEL:

SIGNATURE: DATE:

Conclusions

This study is scientifically sound.

Methods and Materials

Test Procedures - Toxicities of pesticide solutions and dusts were determined by confining the parasites on treated wax paper. Mortality was recorded after 6 hours of exposure.

Statistical Analysis - LC_{50} was determined by the Finney probit analysis method.

Results

Reported Results - Toxicity of the various pesticides is reported in terms of the LC_{50}'s for standard formulations (mainly wettable powders) and for dust formulations. Among standard formulations mercaptothion (malathion), parathion, and Lebaycid (fenthion) were determined to be extremely toxic to the wasp. Among the dust formulations tested, those displaying highest toxicity to the parasite included DDT 5%, Dipterex 2.5%, Malathion 5%, Parathion 5%, Sevin 5%, and Thiodan 5%.

For details on other pesticides tested and presentation of ~~mumercial~~ numerical data, see tables.

Discussion/Results - For details of results, see tables.

Discussion

Test Procedure - Procedures were scientifically sound.

Statistical Analysis - Analyses as performed by the author were assumed to be valid. No validation was performed by EEB.

Discussion/Results - This study is scientifically sound.

TABLE 1. - The $L.C._{50}$'s of various pesticides to P.peregrina with their 95% fiducial limits.

Toxicity Category	Pesticide	Regression Equation	$L.C._{50}$ mmg/cm^2	95% Fiducial Limits
1	Mercaptothion	Y = 4.3x+5.76	0.664	0.546-1.016
	Parathion	Y = 5.16x+5.11	0.952	0.887-1.023
	Lebaycid	Y = 4.43x+4.99	0.987	0.948-1.040
2	Metasystox	Y = 4.41x+3.22	2.54	2.29-2.81
3	Sevin	Y = 3.13x+3.34	3.39	2.95-3.89
4	Dipterex	Y = 4.67x+0.56	8.91	8.32-9.55
5	Thiodan	Y = 4.92x-1.29	18.62	18.28-18.97
	Gusathion	Y = 4.19x-0.49	20.37	15.42-26.92
6	Acricid	Y = 3.45x+0.35	35.48	28.84-43.65
	Rogor	Y = 3.09x+0.06	39.72	34.83-45.29
7	DDT	Y = 4.23x-3.49	101.6	81.66-126.5
8	Dieldrin	Y = 2.64x+3.21	1288.0	1122-1479
9	Kelthane	Y = 3.42x-6.22	1914.0	1710-2143
10	Calcium arsenate, Chlorobenzilate, Copper oxychloride, Light/medium oil, Lime-sulphur, Ovotran, Tartar emetic, Tedion.			

TABLE 2. - The toxicity of some insecticidal dust formulations to P.peregina

Toxicity Category	Dust material	Regression Equation	L.C.$_{50}$ mmg/cm^2	95% Fiducial Limits
1	DDT 5% Dipterex 2.5% Mercaptothion 5% Parathion 5% Sevin 5% Thiodan 5%			
2	Zebediela clay Cryolite	Y = 2.6x+3.27 Y = 2.5x+2.71	6.31 8.24	5.82-6.84 6.68-10.2
3	Kelthane 3%	Y = 2.3x+2.09	17.54	16.5-18.2
4	Sulphur 97.5%	Y = 2.92x+2.62	407.4	394.5-420.7
5	Soil dust	Y = 2.65x-3.10	1140.0	1102-1180

Note - Dust formulations listed in Toxicity Category #1 were so toxic that exact LC_{50}'s could not be determined.