10-22-80

MULTIPLE

TDMS0030 DATA EVALUATION RECORD PAGE 1 OF 3

CASE GS0014 ENDOSULFAN A - (11/21/79) PM 110 ~~12/26/79~~

CHE 079401 ENDOSULFAN (Hexachlorohexahydromethano)

BRANCH EEB DISC 40 TOPIC 05050045

FORMULATION 00 - ACTIVE INGREDIENT

FICHE/MASTER ID 05012881 CONTENT CAT 01

Gorecki, K. (1973) Zatrucia Pszczoly Miodnej-- Apis Mellifica L. (Hym., Apidae) Insektycydami Stosowanymi W Kraju. [Harmful Effects of Insecticides Used in Poland on the Honey Bee-- Apis Mellifica L. (Hym., Apidae).] Polskie Pismo Entomologiczne. Polish Journal of Entomology.] 43(1):201-210.

SUBST. CLASS = S.

DIRECT RVW TIME = 2 Hrs. (MH) START-DATE 10/22/80 END DATE 10/22/80

REVIEWED BY: Allen W. Vaughan
TITLE: Entomologist
ORG: EEB/HED
LOC/TEL: Crystal Mall #2
557-0268

SIGNATURE: Allen W. Vaughan DATE:

APPROVED BY:
TITLE:
ORG:
LOC/TEL:

SIGNATURE: DATE:

17.5% endosulfan

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CONCLUSIONS: This study is scientifically sound.

METHODS AND MATERIALS:

Test Type: Toxicity to honey bee.

Test Species: Honey bee (Apis mellifera).

Test Procedure:

The trials were carried out in wire-netting isolators measuring 4 x 2 x 2 m. The day means ranged from 14.1 to 24.7°C. The isolators were placed in a field of white mustard Sinapis alba in full bloom. A hive populated by a bee colony numbering approximately 4500 insects was placed in each isolator. A trap was placed at the hive exit to catch the dead bees. After two days, when the bees had become accustomed to their new abode and had begun intensive flights, the application was carried out. The spray preparations were applied in the recommended doses, i.e., 500 liters of spray liquid per hectare and 20 kg of dust per hectare. The number of poisoned bees was checked daily for 5 days. The dead insects were located in the trap.

After two days of contact by the bees with the plants subjected to the applications, the isolators, together with the hives, were transferred to noncontaminated blooming mustard. Daily observations were made for another 3 days. Then the behavior of the bees and the viability of the colony were observed periodically. Studies covering several years revealed that the natural mortality rate of bees in isolators did not exceed 5 (0.1% of the entire population of the experimental hive) during a 5-day period.

REPORTED RESULTS:

Ex. "Harmful" preparations: fenitrothion, carbaryl, dioxacarb

Harmful preparations: dimethoate, propoxur, Azotox dust 5 (at 15.4°C.)

Relatively innocuous: Azotox 50 (at <15°C.), Tritox suspension extra 50, Sapecron 50EC, Methox liquid 30, Owadziak liquid 10.

Actually harmless: Azotox liquid 33, Azotox 50 (at >20°C.), Tritox liquid 30, Tritox 50 for suspension, Toxaphene 50, Melipax Staub, Thiodan emulsion, Sadofos liquid 30, Birlane 24.

For application rates and numerical data, see table.

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Table: Characteristics of the Insecticides Investigated and their Toxicity for Bees

| Commercial name | Active substance and content in the preparation | dose in kg/ha of preparation | dose in kg/ha of active substance | number of dead bees (after 5 days) |
|---|---|---|---|---|
| Azotox liquid 33 | 33% DDT | 3.75 | 1.25 | 4 |
| Azotox 50 for suspension | 50% DDT | 1.80 | 0.90 | 94 |
| Azotox 50 for suspension | 50% DDT | 1.80 | 0.90 | 2 |
| Azotox dust 5 | 5% DDT | 20.00 | 1.00 | 286 |
| Tritox liquid 30 | 15% methoxychlor<br>10% DDT, 5% lindane | 2.30 | 0.70 | 3 |
| Tritox 50 for suspension | 3% methoxychlor,<br>45% DDT, 2% lindane | 2.00 | 1.00 | 7 |
| Suspension Tritox extra 50 | 25% methoxychlor<br>17% DDT, 8% lindane | 2.00 | 1.00 | 70 |
| Methox liquid 30 | 30% methoxychlor | 4.00 | 1.20 | 27 |
| Owadziak liquid 10 | 10% lindane | 1.00 | 0.10 | 29 |
| Toxaphene 50 | 50% chlorinated camphene | 2.50 | 1.25 | 16 |
| Melipax Spritzmittel | 50% chlorinated camphene | 2.50 | 1.25 | 3 |
| Melipax Staub | 10% chlorinated camphene | 20.00 | 2.00 | 2 |
| Thiodan emulsion | 17.5% endosulfan | 7.00 | 1.25 | 15 |
| Sadofos liquid 30 | 30% malathion | 1.50 | 0.45 | 3 |
| Owadofos liquid 50 | 50% fenitrothion | 1.20 | 0.60 | 505 |
| Owadofos dust 5 | 5% fenitrothion | 20.00 | 1.00 | 1392 |
| Bi-58 | 37% dimethoate | 1.35 | 0.50 | 255 |
| Birlane 24 | 24% chlorfenvin-phos | 2.20 | 0.50 | 8 |
| Sapecron 50 EC | 50% chlorfenvin-phos | 1.00 | 0.50 | 36 |
| Karbatox suspension 75 | 75% carbaryl | 1.00 | 0.75 | 450 |
| Karbatox dust 5 | 5% carbaryl | 20.00 | 1.00 | 1227 |
| Unden | 50% propoxur | 2.00 | 1.00 | 153 |
| Elocron 50 WP | 50% dioxacarb | 2.00 | 1.00 | 534 |

DISCUSSION:

A. Test Procedure - Procedure is sound.

B. Statistical Analysis - None reported.

C. Discussion/Results - This study is scientifically sound.

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