US EPA ARCHIVE DOCUMENT

11-4-80

MULTIPLE

TDMS0030 DATA EVALUATION RECORD PAGE 1 OF 3

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

CHEM 079401 Endosulfan (hexachlorohexahydromethano)

BRANCH EEB DISC 40 TOPIC 05200045

FORMULATION 00 - ACTIVE INGREDIENT

FICHE/MASTER ID 05004794 CONTENT CAT 01

Palmer-Jones, T.; Forster, I.W.; Jeffery, G.I. (1959) Effect on honey bees of DDT and thiodan applied from the air as sprays to chou moellier. New Zealand Journal of Agricultural Research 2(3):481-487.

SUBST. CLASS = S.

DIRECT RVW TIME = 3 Hr. (MH) START-DATE 2/4/80 END DATE 2/4/80

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Conclusions

This study is scientifically sound.

Methods and Materials

Test Procedures - DDT (2 lb AI/A in 7 gal. water) was applied by air to a 5 1/2 acre plot of blooming kale. Thirty-seven hives were located 300 yards from the treated crop.

Endosulfan (1.2 lb AI/A in 7 gal. water) was applied by air to one acre of a 25-acre plot of blooming kale. Forty hives were located one-half mile from this plot.

Observation included counts of honey bees and bumble bees in the field, toxicity of pesticides to caged honey bees, and effects of pesticides on colonies.

Statistical Analysis - None reported.

Results

Reported Results - Application of DDT to flowering kale repelled honey bees for six days; there was no evidence that it repelled bumble bees. Honey been mortality was low to moderate; hives and broods were not affected by DDT treatment of the forage crop.

Endosulfan was not repellent to bees, and was more toxic to field bees than DDT. Although no adverse effects were observed in adult bees and brood in nearby apiaries, it was considered likely that the colonies would have been seriously affected had the treated area been larger.

Discussion/Results

Count of field bees - Counts indicated that honey bees were repelled by DDT application for six days; endosulfan was not repellent. There were no indications that either pesticide was repellent to bumble bees.

Toxicity to caged bees - Bees foraging the treated crops were collected and maintained in cages for mortality evaluations. Although endosulfan was apparently more toxic than DDT, numbers of bees tested in this way were too small to allow for valid assessment.

Effects on colonies - No adverse colony effects were observed.

Discussion

Test Procedure - Procedure was sound.

Statistical Analysis - None reported.

Discussion/Results - This study is scientifically sound.