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DATA EVALUATION RECORD

1. Chemical : DPX-V9360

2. Test Material : Technical, 97.4%

3. Study Type : Honey bee acute contact LD_{50}

   A. Test Species : Apis mellifera

4. Study ID : Meade, A.B. 1987. Acute Contact LD_{50} Study of DPX-V9360-27 on Honey Bees (Apis mellifera L.). Prepared and submitted by E.I. Du Pont de Nemours and Co., Wilmington, DE. EPA Acc. No. 409242-19.

5. Reviewed By :

   Allen W. Vaughan
   Entomologist
   EEB/HED

   Signature: Allen W. Vaughan
   Date: 3.9.89

6. Approved by :

   Norman Cook
   Head, Section 2
   EEB/HED

   Signature: Norman J. Cook
   Date: 3.9.89

7. Conclusions : This study is scientifically sound. With a 48-hr contact LD_{50} greater than 20 micrograms per bee, DPX-V9360 is considered practically nontoxic to honey bees. This study fulfills the guideline requirement for an acute contact toxicity test on honey bees.

8. Recommendations : N/A

9. Background : This study was submitted by Du Pont in support of registration.

10. Discussion of Individual Test : N/A

11. Materials and Methods :

    A. Test Animals were honey bees collected from Du Pont's apiary, Stine-Haskell, Newark, Delaware.

    Test System - Du Pont's bee colonies are allowed to forage freely. Once the bees are brought into the laboratory, they are fed a 50% honey/water solution. During the test this solution is contained in 8-oz plastic cups with lengths of dental cotton passing through holes in the lids. Each cage (12" X 12" X 12") contains 2 cups of solution.

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On the day before a test started, enough bees were collected to complete that test. Bees were obtained by applying smoke to the entrance of the hive. When calm, the test bees were transferred to the laboratory. There, the bees were maintained at a 16:8 (L:D) photocycle and a temperature of 24° C.

The test chambers were cylindrical cages 120 mm deep and 40 mm in diameter, made of 3 mm tinned wire mesh and closed at each end by a cork. The cages, each containing 10 bees, were stored upright, and the bees fed 50% sucrose/water solution from glass tubes inserted through the top cork.

Mortality responses were noted at the end of 48 hours.

B. Treatments: DPX-V9360 was applied at four rates ranging from 2.5 to 20 ug/bee. Carbaryl, the standard, was used at rates known to provide information from which LD_{50} values can be derived.

Positive control bees received a volume of diluent (acetone) equal to the largest volume used during the test. Negative control bees received no diluent.

C. Design - Four replicates of 10 bees each per dose level; 40 bees each for positive and negative controls.

D. Statistics - LD_{50} values were derived by a Computer Probit Analysis Procedure.

12. Reported Results : The no effect level of the test substance is considered to be 20 ug/bee, and the LD50 is estimated to be > 20 ug/bee. No toxic response was observed. The LD_{50} for carbaryl was 0.54 ug/bee. Mortality in the positive controls was 18%.

13. Study Authors' Conclusions/Q.A. Measures :

Test compound was found to be practically nontoxic to honey bees. Test followed procedures specified in Subdivision L - Hazard Evaluation: Nontarget Insects, of the FIFRA Registration Guidelines, USEPA.

14. Reviewer's Discussion and Interpretation of the Study :

A. Test Procedures : Procedures were in accordance with guideline protocols. There were no problems in this regard.

B. Statistical Analysis : Visual analysis of the mortality data indicates that the test compound is practically nontoxic to bees. As such, probit analysis was not conducted for DPX-V9360.

C. Discussion/Results : This study is scientifically sound, and shows DPX-V9360 to be practically nontoxic to honey bees.

D. Adequacy of Study :

1. Classification : Core

2. Rationale : Guidelines protocol; technical grade test.

3. Reparability : NA

15. Completion of One-Liner for Study : N/A

16. CBI Appendix : N/A