

141-1  
July 7/12/90

DATA EVALUATION RECORD

1. **CHEMICAL:** BAS 514 H Quinchlorac.  
Shaughnessey Number: Not available.
2. **TEST MATERIAL:** BAS 514 H; Quinchlorac; 3,7-dichloro-8-quinolinecarboxylic acid; 50% wettable powder; Lot No. 84.3.
3. **STUDY TYPE:** Honey Bee Toxicity Test.  
Species Tested: Honey bee (Apis mellifera).
4. **CITATION:** Clark, J.R. 1987. BAS 514 00 H (50% WP, Lot 84-3) Acute Toxicity to Adult Worker Honey Bees Apis mellifera L. Submitted by BASF Corporation Chemicals Division, Parsippany, NJ. Study performed by University of California, Riverside, CA. Laboratory Project No. M8723.  
MRID No. 410635-76.

5. **REVIEWED BY:**

Michael L. Whitten, M.S.  
Wildlife Toxicologist  
KBN Engineering and  
Applied Sciences, Inc.

Signature: *Michael L. Whitten*  
Date: 8-30-89

6. **APPROVED BY:**

James R. Newman, Ph.D.  
Project Manager/  
Principal Scientist  
KBN Engineering and  
Applied Sciences, Inc.

Signature: *James R. Newman*  
Date: 8/30/89

Henry T. Craven, M.S.  
Supervisor, EEB/HED  
USEPA

Signature: *Allen W. Vaughan* 7-16-90  
Signature: *Henry T. Craven*  
Date: 7/12/90

7. **CONCLUSION:** The study is scientifically sound and meets the requirements for a honey bee toxicity test. The LD50 of BAS 514 00 H (50% a.i.) was determined to be greater than 181.290 ug/bee.

8. **RECOMMENDATIONS:** N/A

*David B. Ballew* ~~7-12-90~~ ~~7-12-90~~  
7-12-90

6 hrs

9. BACKGROUND:

10. DISCUSSION OF INDIVIDUAL TESTS: N/A.

11. MATERIALS AND METHODS:

- A. Test Animals: The bees (Apis mellifera) were obtained from a colony "just before treatment and placed in stock-bee cages."
- B. Test System: The test system was adopted from Atkins, et al. (1975). The bees were aspirated from the stock-bee cages into dusting cages of mesh wire screen. The dusting cages were placed into a bell jar duster. A watch glass containing 200, 400, or 600 mg of pesticide-pyrolite dust was placed in the duster and the air was exhausted from the chamber to a vacuum of 931 mm Hg. Outside air imploding onto the dust sample replaced the vacuum and uniformly dispersed the pesticide onto the caged bees.

The test material was mixed with pyrolite dust which was used as a diluent and a carrier during dusting.

- C. Dosage: The dosage levels used in this study were 60.430, 120.860, and 181.290 micrograms (ug) of BAS 514 H per bee.
- D. Design: The test consisted of three replicates of approximately 40 bees each. The highest dosage level was repeated three times using bees from a different colony each time, for a total of nine replicates at this level.

After being dusted with the pesticide/pyrolite mixture, the bees were transferred through a funnel into holding cages of hardware cloth. Each holding cage contained a 50% honey/water solution in a 14 ml vial. The treated bees were kept at a temperature of approximately 27°C and 65% relative humidity.

Observations were recorded at 24, 48, 72, and 96 hours post-treatment.

- E. Statistics: No statistical analyses were performed.

12. REPORTED RESULTS: Mortality after 96 hours was as follows:  
 60.430 ug/bee: 19%, 120.860 ug/bee: 10%, 181.290 ug/bee:  
 24% (Tables II-IV, attached).

2

**13. STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES:**

BAS 514 00 H (50% a.i.) was determined to be nontoxic to adult worker honey bees at the rate of 181.290 ug/bee, and is nontoxic to bees as a direct contact chemical using field application rates up to 181 lb a.i./acre.

The author stated that the report is a true and accurate record of the study. A statement was included by the registrant that "This study is not required to meet the requirements for 40 CFR 160, Good Laboratory Practice Standards. No other quality assurance statements were included in the report.

**14. REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:**

**A. Test Procedure:** The test procedures followed recommended protocols except for the following deviation:

The report did not specify if the bees were of uniform age.

**B. Statistical Analysis:** None performed by author or reviewer.

**C. Discussion/Results:** The author stated that the test material was nontoxic to adult honey bees at a rate of 181.290 ug/bee. An inspection of Table IV (attached) shows that mortality at all intervals was greater in the 181.290 ug/bee group than in the untreated group. The differences between groups after 24 hours suggests the possibility of a treatment effect. The LD50, however, is greater than the highest tested concentration of 181.290 ug/bee.

The test is scientifically sound and meets the requirements for a honey bee toxicity test.

**D. Adequacy of the Study:**

(1) **Classification:** Core.

(2) **Rationale:** N/A

(3) **Repairability:** N/A

**15. COMPLETION OF ONE-LINER:** Yes; August 25, 1989.

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Pages   4   through   9   are not included.

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  - ☐ Description of the product manufacturing process.
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  - ☐ Sales or other commercial/financial information.
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Shorthand No. Not Available

BAS 514 H Quinohlorac

Chemical Name \_\_\_\_\_ Chemical Class \_\_\_\_\_ Page \_\_\_\_\_ of \_\_\_\_\_

Study/Species/Lab/  
Accession \_\_\_\_\_ Chemical  
X a.l.

Reviewer/  
Date \_\_\_\_\_ Value  
Std \_\_\_\_\_

14-Day Single Dose Oral LD50  
Species \_\_\_\_\_  
Lab \_\_\_\_\_  
Acc. \_\_\_\_\_

Results  
LD50 = \_\_\_\_\_ mg/kg ( \_\_\_\_\_ 95% C.L. ) Contr. Mort.(%) = \_\_\_\_\_  
Slope = \_\_\_\_\_ # Animals/Level = \_\_\_\_\_ Age(Days) = \_\_\_\_\_  
Sex = \_\_\_\_\_  
14-Day Dose Level mg/kg/(% Mortality)  
( ) , ( ) , ( ) , ( ) , ( ) , ( ) , ( )  
Comments: \_\_\_\_\_

14-Day Single Dose Oral LD50  
Species \_\_\_\_\_  
Lab \_\_\_\_\_  
Acc. \_\_\_\_\_

LD50 = \_\_\_\_\_ mg/kg ( \_\_\_\_\_ 95% C.L. ) Contr. Mort.(%) = \_\_\_\_\_  
Slope = \_\_\_\_\_ # Animals/Level = \_\_\_\_\_ Age(Days) = \_\_\_\_\_  
Sex = \_\_\_\_\_  
14-Day Dose Level mg/kg/(% Mortality)  
( ) , ( ) , ( ) , ( ) , ( ) , ( ) , ( )  
Comments: \_\_\_\_\_

8-Day Dietary LC50  
Species \_\_\_\_\_  
Lab \_\_\_\_\_  
Acc. \_\_\_\_\_

LC50 = \_\_\_\_\_ ppm ( \_\_\_\_\_ 95% C.L. ) Contr. Mort.(%) = \_\_\_\_\_  
Slope = \_\_\_\_\_ # Animals/Level = \_\_\_\_\_ Age(Days) = \_\_\_\_\_  
Sex = \_\_\_\_\_  
8-Day Dose Level ppm/(% Mortality)  
( ) , ( ) , ( ) , ( ) , ( ) , ( ) , ( )  
Comments: \_\_\_\_\_

8-Day Dietary LC50  
Species \_\_\_\_\_  
Lab \_\_\_\_\_  
Acc. \_\_\_\_\_

LC50 = \_\_\_\_\_ ppm ( \_\_\_\_\_ 95% C.L. ) Contr. Mort.(%) = \_\_\_\_\_  
Slope = \_\_\_\_\_ # Animals/Level = \_\_\_\_\_ Age(Days) = \_\_\_\_\_  
Sex = \_\_\_\_\_  
8-Day Dose Level ppm/(% Mortality)  
( ) , ( ) , ( ) , ( ) , ( ) , ( ) , ( )  
Comments: \_\_\_\_\_

48-Hour LC50  
Species \_\_\_\_\_  
Lab \_\_\_\_\_  
Acc. \_\_\_\_\_

LC50 = \_\_\_\_\_ pp ( \_\_\_\_\_ 95% C.L. ) Contr. Mort.(%) = \_\_\_\_\_  
Sol. Contr. Mort.(%) = \_\_\_\_\_  
Slope = \_\_\_\_\_ # Animals/Level = \_\_\_\_\_ Temperature = \_\_\_\_\_  
48-Hour Dose Level pp/(% Mortality)  
( ) , ( ) , ( ) , ( ) , ( ) , ( ) , ( )  
Comments: \_\_\_\_\_

96-Hour LC50  
Species \_\_\_\_\_  
Lab \_\_\_\_\_  
Acc. \_\_\_\_\_

LC50 = \_\_\_\_\_ pp ( \_\_\_\_\_ 95% C.L. ) Contr. Mort.(%) = \_\_\_\_\_  
Sol. Contr. Mort.(%) = \_\_\_\_\_  
Slope = \_\_\_\_\_ # Animals/Level = \_\_\_\_\_ Temp. = \_\_\_\_\_  
96-Hour Dose Level pp/(% Mortality)  
( ) , ( ) , ( ) , ( ) , ( ) , ( ) , ( )  
Comments: \_\_\_\_\_

96-Hour LD50  
Species Honey bee  
Apis mellifera 50%  
Lab Univ. of California  
Acc. 410635-76

LD50 > 181  $\mu\text{g}/\text{bee}$  ( \_\_\_\_\_ 95% C.L. ) Contr. Mort.(%) = 11 (mean)  
Sol. Contr. Mort.(%) = NA  
Slope = \_\_\_\_\_ # Animals/Level = 120 Temp. = 27°C  
96-Hour Dose Level  $\mu\text{g}/\text{bee}$ /(% Mortality)  
60.4 (18.8) , 120.8 (10.3) , 181.3 (2.5) , ( ) , ( ) , ( ) , ( )  
Comments: \_\_\_\_\_

M. WHITTEN CORE  
8-25-89