DATA EVALUATION RECORD

1. Chemical: PP321 (Karate)

2. Test Material: Not reported

3. Study Type: Honey bee: Foraging study with simulated honeydew

   Species Tested: Apis mellifera

4. Study ID: Gough, H.J., I.G. Collins, and W. Wilkinson. 1986. PP321: Effects on honey bees (Apis mellifera) foraging on simulated honeydew on winter wheat, 1985. Submitted by ICI Americas Inc., Wilmington, DE. Reg. No. 10182-OA.

5. Reviewed By:

   Allen W. Vaughan
   Entomologist
   EEB/HED

   Signature: Allen W Vaughan
   Date: 9·13·88

6. Approved By:

   Norman J. Cook
   Supervisory Biologist
   EEB/HED

   Signature: Norman J. Cook
   Date: 9·13·88

7. Conclusions:

   Under the conditions of this test (using treated "honeydew"), PP321 caused no significant increase in mortality whereas dimethoate killed thousands of bees. Inhibition of foraging by PP321 was detectable for up to 3 days, but was strongly marked in the first 24 hours. PP321 at 7.5 or 15 gm ai per ha on cereals where there is honeydew should present no appreciable hazard to honey bees.

   This study does not address any guideline requirement.

8. Recommendations: N/A

9. Background: This study was submitted by ICI Americas in support of registration.

10. Discussion of Individual Tests: N/A

11. Materials and Methods

In 3 consecutive trials plots of winter wheat, enclosed in tunnel greenhouse frames, were sprayed with sucrose solution to simulate aphid honeydew. Each tunnel had a colony of honey bees which were confined by plastic mesh covering the tunnel frame. The bees foraged on the sucrose deposits and the daily mortality and foraging activity were monitored for several days before and after applying insecticide treatments. Behavior of bees near the hive was also observed, mainly on treatment days.

Treatments were applied at 300 liters per ha when several hundred bees were foraging on the crop. The first two trials each used 4 tunnels, one for each treatment: 7.5 gm ai per ha or 15 gm ai per ha PP321; 500 gm ai per ha dimethoate; and water control. The insecticides were applied to only half the crop in the tunnel, the other half receiving water, giving the bees a choice but avoiding differential wetting as a factor influencing the choice. The third trial used a single tunnel in which PP321 was applied at 15 gm ai per ha to the entire area of the enclosed crop.

Mortality was measured by counting dead bees at the hive entrances daily. Foraging activity was monitored by counts of foraging bees on 1 m wide strips of crop. In the two trials using 4 treatments foraging was assessed 4 times daily, 7 or 8 times on treatment days.

12. Reported Results: Reported results are listed above under #7, "Conclusions."

13. Study Author's Conclusions/Q.A. Measures:

Reported results are listed above. The data obtained indicate that residues of PP321 may be repellent to honey bees under the conditions of these tests.

Protocol and final report audits were conducted by ICI's Quality Assurance Unit.

14. Reviewer's Discussion and Interpretation of the Study

A. Test Procedures:
Procedures were scientifically sound. However, protocol does not correspond to any test type in the guidelines, and test does not address any specific data requirement.

B. Statistical Analysis:

EEB did not attempt to validate the results of the analyses.

C. Discussion/Results:

Residues of PP321 may remain repellent to honey bees for as long as 3 days posttreatment.

D. Adequacy of Study:

1. Classification: Supplemental

2. Rationale: Does not address any data requirement.

3. Reparability: N/A

15. Completion of One-Liner: N/A

16. CBI Appendix: N/A