(10-5-87)

DATA EVALUATION REPORT

1. Chemical: Cyhalothrin

2. Test Material: Technical, 89.2% ai

3. Study/Action Type: Avian Dietary LC_{50} Study Species: Mallard Duck (Anas platyrhynchos)

4. Study Identification: The Subacute Dietary Toxicity of Cyhalothrin to the Mallard Duck, by N.L. Roberts, C. Fairley and R.N. Woodhouse. Prepared by ICI, Ltd., June 1981. Submitted by Coppers Animal Health Inc., Kansas City, Mo. EPA Acc. No. 073221.

5. Reviewed By: Ann Stavola
Aquatic Biologist
HED/EEB

Signature: Ann Stavola
Date: May 6, 1985

6. Approved By: Douglas Urban
Supervisory Biologist
HED/EEB

Signature: Douglas J Urban
Date: 10/5/87

7. Conclusions:

The study is scientifically sound and fulfills our Guideline requirements for an avian dietary study on waterfowl. An LC_{50} of 12488 ppm indicate that cyhalothrin is practically non-toxic to waterfowl.

8. Recommendations: N/A

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9. Background:

This study was submitted to support the request for EUP's for Grenade 5% and Grenade 20% insecticides.

10. Materials and Methods

A. Test Animals: One-day old mallard ducks (Anas platyrhychos) were obtained from Lincolnshire Pheasantries, Ltd. When the birds were 7 days old they were randomly allocated to the several treatment groups, and when they were 10 days old they were fed the treated diet. There were 10 birds per treatment level.

B. Dose: The test compound, cyhalothrin, 89.2% ai, was mixed in corn oil and then incorporated into the standard chick diet. Controls were fed cornmeal in the chick diet.

C. Study Design: Each group of 10 birds was fed one of the nomimal concentrations of cyhalothrin: 0, 700, 1120, 1792, 2867, 4588, 7340 or 11744 pm. These diets were analyzed for cyhalothrin content. The birds were fed the treated diets for 5 days and were then observed for 3 additional days. The birds were examined at the end of the study for gross pathologiical changes.

D. Statistics: The LC_{50} value was calculated with the Litchfield - Wilcoxon method.

11. Reported Results:

Nominal conc. ppm	Mean measured conc. ppm	Percent mortalities
0	0	0
700	766	0
1120	1140	10
1792	1710	0
2867	2630	0
4588	4320	10
7340	6910	10
11744	12100	40

LC_{50} = 14000 ppm (equivalent to 12488 ppm ai)
CI not determined as LC_{50} > maximum dose level.

No obvious ill signs were seen in the birds prior to death, and the survivors were in good health throughout the study.

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During days 1 to 5, while on the test diets, the birds at 2867 to 11744 ppm lost weight. During days 5 to 8 all surviving birds gained weight.

Food consumption for the control birds was normal. During days 1 to 5 the birds at levels 1792 to 11744 ppm had lower food consumption compared to the control, but it returned to normal amounts during days 6 to 8.

12. Study Authors' Conclusions/QA Measures

LC_{50} = 14000 ppm (equivalent to 12488 ppm ai)

"To the best of my knowledge and belief, this study was conducted in compliance with Good Laboratory Practice regulations as set forth in 'Title 21 of the U.S. Code of Federal Regulations, Part 58,' with the exception of possible minor items, none of which is considered to have an impact on the validity of the data on the interpretation of the results in the report."

13. Reviewer's Discussion

A. Test Procedure: The procedures follow those recommended by EPA in the 1978 Proposed Guidelines and the 1982 Guidelines, Subpart E.

B. Statistical Analysis: The data indicate that the LC_{50} > 12100 ppm. Therefore the reported result is acceptable.

C. Discussion/Results: An LC_{50} of 12488 ppm indicates that technical cyhalothrin is practically nontoxic to waterfowl on a dietary basis.

D. Adequacy of the Study

1. Classification: Core

2. Rationale: The study meets our Guideline requirements.

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