

US EPA ARCHIVE DOCUMENT

419688-02

MRID No. ~~416273-03~~

DATA EVALUATION RECORD

- 1. **CHEMICAL:** Pyrethrin I  
Shaughnessey Number: 069001
- 2. **TEST MATERIAL:** Pyrethrin Extract ; Task force Blend FEK-99  
57.57% purity.
- 3. **STUDY TYPE:** Avian Dietary LC<sub>50</sub> Test.  
Species Tested: Mallard Duck (Anas platyrhynchos)
- 4. **CITATION:** Grimes, Jennie, Lynn, S.P. and Smith, G.J., 1991.  
A Dietary LC50 Study with Pyrethrin Extract in the Mallard.  
Wildlife International Ltd., Project No.: 326-102.
- 5. **REVIEWED BY:**

Richard W. Felthousen  
EFED/EEB

Signature: *Richard W. Felthousen*  
Date: *Sept. 3, 1991*

- 6. **APPROVED BY:**  
  
Al Vaughan, Acting Head,  
Section 2  
EFED/EEB

Signature: *Allen W. Vaughan*  
Date: *9.9.91*

Harry Craven  
Supervisor, EEB/HED  
USEPA

Signature:  
Date:

- 7. **CONCLUSIONS:**  
The study was conducted so as to conform to Good Laboratory Practice and the results represent the toxicity of Pyrethrin Extract to the mallard duck.
- 8. **RECOMMENDATIONS:**
- 9. **BACKGROUND:** Data submitted to satisfy Reregistration requirements.
- 10. **DISCUSSION OF INDIVIDUAL TESTS:** N/A.
- 11. **MATERIALS AND METHODS:**



- A. **Test Animals:** The birds used in the study were 10-day-old mallard ducks (Anas platyrhynchos) obtained from Whistling Wings in Hanover, Illinois. All test birds were phenotypically indistinguishable from wild birds. The birds were acclimated to laboratory conditions from the day of receipt until test initiation.
- B. **Test System:** All birds were housed indoors in wire pens measuring approximately 62 X 92 X 25.5 cm. Each pen (test and control) was assigned 10 birds at random. Lighting was provided by fluorescent lights on a 16L:8D photoperiod. Maximum and minimum temperatures, as well as the relative humidity of the animal room were recorded daily. The average room temperature during the test period was 25.4°C with an average relative humidity of 50%. The birds were exposed to approximately 130 lux of illumination.
- C. **Dosage:** 8-day dietary LC<sub>50</sub> test. All dosages and the LC<sub>50</sub> value are reported as parts per million (ppm) active ingredient (a.i.). The test consisted of a geometric series of five concentrations and four control groups. Nominal dietary concentrations were 562, 1000, 1780, 3160 and 5620 parts per million. Each group was fed the test or control ration for five days. Following the five day exposure all groups were given untreated feed for three days.
- D. **Design:**  
The test diets were prepared by mixing the test substance into the diet with corn oil. The concentration of corn oil in the treated and control diets was 2%. All dietary concentrations were adjusted to 100% active ingredient based upon the reported purity of the test substance.

Test diets were fed to the chicks for five consecutive days. After this five-day test period, treated diets were removed and birds were offered untreated feed for a three-day recovery period.

Body weights by group were measured at the initiation of the test, on Day 5 and at the termination of the test on Day 8. Average daily food consumption was recorded for each group for the five-day test period, and the three-day recovery period.

All birds were observed daily to ascertain the presence (or absence) of clinical signs indicative of test material effect.

- E. **Statistics:** The pattern of mortality in this study did not require statistical evaluation.

12. **REPORTED RESULTS:**

The LC<sub>50</sub> of the test material in this study was determined to be greater than 5620 ppm a.i., the highest concentration tested. No mortality was observed for any of the test or control groups. The no observed effect level was 1780 ppm a.i. based on signs of toxicity (lethargy) at 3160 ppm a.i.

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

The report stated that the study was conducted in conformance with Good Laboratory Practice regulations. Quality assurance audits were conducted and the final report was signed by the Quality Assurance Officer.

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

- A. **Test Procedure:** The test procedures were in accordance with Subdivision E - Hazard Evaluation: Wildlife and Aquatic Organisms, ASTM and SEP guidelines except for the following deviations:

Body weights were measured by group. Individual body weights should have been measured.

- B. **Statistical Analysis:** N/A
- C. **Discussion/Results:**

The study is scientifically sound and meets the intent of the guidelines.

The LC50 is greater than 5620 ppm and the no observed effect level is 1780 based on signs of toxicity at 3160 ppm.

D. **Adequacy of the Study:**

- (1) **Classification:** Core
- (2) **Rationale:** Satisfies requirement.
- (3) **Repairability:** N/A