DATA EVALUATION RECORD

1. CHEMICAL: MGK 264

2. TEST MATERIAL: MGK 264 Insecticide Synergist 100% Technical, purity 92.9%, Lot No. 7437

3. STUDY TYPE: Avian Dietary LC50 Test

4. CITATION: Long, R.D., J. Foster, K. Hoxter, and G.J. Smith. 1990. A Dietary LC50 Study with the Mallard. Performing Laboratory; Wildlife International LTD., Easton, MD. Study Sponsor; McLaughlin Gormerly King Company, Minneapolis, MN. Accession No. 416873-02.

5. REVIEWED BY:

Greg Susanke, Biologist Greg Susanke 12/19/90
Ecological Effects Branch
Environmental Fate and Effects Division (H7507 C)

6. APPROVED BY:

L. Touart 1/29/91

Les Touart, Acting Section Head
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7. CONCLUSION: This study appears scientifically sound and fulfills Guideline requirement 71-2, for an avian dietary LC50 study on mallard ducks. MGK 264 is considered practically non-toxic to waterfowl since the LC50 is > 5620 ppm.

8. MATERIALS AND METHODS:

A. Test Organisms:

Species- mallards (Anas platyrhynchos)

Supplier- Whistling Wing, Hanover, IL.

Age- 10 days at test initiation

Acclimation period- All birds were acclimated to the facilities and caging from there arrival to test initiation.

B. Test System:

Pen size- 62 x 92 cm and 25.5 cm high. Wall, ceilings and floors were constructed of vinyl coated wire mesh. Ten chicks (one treatment or control group) were housed in each pen.

Environmental temperature- The temperature in the brooding compartment of the pens was 33 $^{\circ}$C $\pm$ 2 $^{\circ}$ C, and ambient room temperature was 24 $^{\circ}$ C $\pm$ 1 $^{\circ}$ C.

Relative humidity- 75% $\pm$ 13%

Photoperiod- 16 hours light, 8 hours dark. Fluorescent lighting was used at an intensity which simulated noon-day sunlight (130 lux illumination).

Dose preparation- MGK 264, acetone and corn oil (2% of total weight) were mixed in the basal diet (Wildlife International LTD. Game Bird Ration) with a Hobart mixer. Sample analyses showed MGK-264 to have been homogeneously mixed throughout the diet.

C. Test Design:

Range finding test- Dietary concentrations were selected based on known toxicity data.

Definitive test

Nominal concentrations- 562, 1000, 1780, 3160, and 5620 ppm

Controls- There were three control groups. The control group received the carrier (corn oil) in their diets at 2% of the total feed by weight. This was equivalent to the amount used in the test groups.

Number of test organisms- 10 ducklings per test group and control group

Biological observations- All birds were observed twice daily for signs of toxicity, abnormal behavior or mortality.

Physical parameter measurements- Body weights by group were measured at test initiation, day 5, and test termination. Feed consumption was estimated for each test group and control for the exposure period, days 0 - 5, and for the observation period, days 6 - 8.

Feeding- Diets were prepared at test initiation and given to the ducklings. Additional diet was presented as needed. At the end of the exposure period all groups were given untreated feed for three days throughout the observation period. Water was supplied ad libitum.

9. REPORTED RESULTS:

Recovery of chemical- Six feed samples were taken from the top, middle, and bottom on the right, left, and in the center of the mixing vessel on day 0. Analysis of the basal feed showed that the concentration of MGK 264 remained constant through the exposure period.

Body weights- There were no effects on body weight in the treatment groups when compared to the controls.

Food consumption- There were no effects on feed consumption in the treatment groups when compared to the controls.

Mortality and observations- There were no mortalities in the control groups or any treatment group. All control birds appeared normal and exhibited no abnormal behavior. Two birds at the 562 ppm concentration, and three birds at the 1000 ppm concentration were slightly nostril picked on day 1.

Gross pathology- No necropsies were performed because of the lack of mortality and the lack of observable treatment related effects.

10. STUDY AUTHORS'S CONCLUSIONS / QUALITY ASSURANCE MEASURES:

" In conclusion, the dietary LC50 value for mallards exposed to MGK 264 was determined to be greater than 5620 ppm, the highest concentration tested. The highest no mortality level was 5620 ppm. The highest no observed effect level was 5620 ppm".

Quality Assurance and Good Laboratory Practice Regulation Statements were included in the report, indicating that the study was conducted in accordance with the FIFRA Good Laboratory Practice Standards set forth in 40 CFR Part 160.

11. REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:

A. Test Procedure: Test procedures were generally in accordance with protocols recommended by the Guidelines.

B. Statistical Analysis: No statistical analysis was performed to determine the LC50 because there were no mortalities.

C. Discussion/Results: The study appears to be scientifically valid. There were no mortalities at the highest level tested, 5620 ppm. The LC50 and NOEL are > 5620 ppm.

D. Adequacy of the Study:

1. Classification: Core

2. Rationale: N/A

3. Repairability: N/A

12. COMPLETION OF ONE-LINER FOR STUDY: yes