

US EPA ARCHIVE DOCUMENT

6-23-87

DATA EVALUATION RECORD
MRID: 98651

- 1. CHEMICAL: H-9419 (Maneb)
- 2. TEST MATERIAL: Assumed to be 100 per cent active by author.
- 3. STUDY/ACTION TYPE: Avian Dietary LC₅₀.
Species Tested: Mallard Duck.
- 4. STUDY IDENTIFICATION: Truslow Farms, Inc. (1975). Final Report: Eight-day Dietary LC₅₀ --- Mallard Ducks: Project No. 112-106. (Unpublished study received May 9, 1975 under 352-173; submitted by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:165-044-B). Date - March 14, 1975.

5. REVIEWED BY:

Jeffrey L. Lincer, Ph.D.
President
Eco-Analysts, Inc.

Signature:
Date: 6/23/87

6. APPROVED BY:

James R. Newman
Senior Scientist
KBN, Inc.

Signature: *James R. Newman*
Date: *7/6/87*

Signature: *Henry T. Cover*
Date: *12/30/87*

7. CONCLUSIONS:

- A. Scientific Soundness: Supplemental. Study is scientifically sound.
- B. Major Findings: With an LC₅₀ of greater than 10,000 ppm, Maneb is practically non-toxic to mallard ducks when administered through the diet.
- C. Status of Data Requirement(s): This study partially fulfills the intent of the Guidelines requirements for an avian dietary LC₅₀ determination, with the following exceptions: there was no indication that both a vehicle control and a control group were run concurrently with the LC₅₀ test; mallard ducks were 14-day old (vs. the required 5-10 day old). It should be kept in mind, however, that this study was carried out in 1975, before current requirements were promulgated.

D. Reasons for Rejecting the Study: N/A.

8. RECOMMENDATIONS: N/A.

9. BACKGROUND: N/A.

10. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES: N/A.

11. MATERIALS AND METHODS (PROTOCOLS):

- A. Test Animals: Fourteen day old mallard ducks (Anas platyrhynchos) hatched in the laboratory from eggs collected from the production flock (of Truslow Farms, Inc., Chestertown, Maryland).
- B. Dosage: Dietary exposure. Experimental material was dissolved in corn oil and mixed into game bird starter ration.
- C. Design: Ten birds per pen. Five pens on basal diet only; five pens on Dieldrin control (one pen on each of the following: 68.1, 100, 147, 215 and 316 ppm); 5 pens on experimental diets (one pen on each of the following: 464, 1000, 2150, 4640 and 10,000 ppm).
- D. Statistics: Mortality was analyzed by the method of Litchfield and Wilcoxon (1949. J. Pharmacol. Exptl. Therap., 96(2): 99-133).

12. REPORTED RESULTS: "Negative Controls" - There was no mortality in the negative control groups; and the birds appeared normal throughout the study.

"Dieldrin Controls" - There was a dose-related suppression in body weight gain and food consumption. At the 68 ppm dosage level, hyperexcitability was observed; however, no mortality occurred. The following symptoms of toxicity were observed at the 100, 147, 215, and 316 ppm dosage levels and were dose-related in severity: lack of coordination, loss of the righting reflex, rigidly extended legs and neck, and salivation. [Dieldrin exposure (positive control) resulted in an LC₅₀ of 120 ppm (CI @ 95%: 96-151 ppm).]

"Experimental Material" - H-9419 did not cause symptoms of toxicity or behavioral abnormalities at the dosage levels tested. There was no mortality at any dosage level."

13. STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES: "The acute LC₅₀ of H-9419 (Maneb) in Mallard ducks is estimated to be greater than 10,000 ppm."

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

A. Test Procedure(s): Test procedures were not in accordance with present day guidelines. The following information was not provided.

- (1) Was carrier (corn oil) incorporated into control diet?
- (2) What was the basis for assuming that experimental material was "100 per cent active"?
- (3) What is the solubility of experimental material in corn oil?
- (4) Dates on which study began and ended?
- (5) What were environmental conditions under which birds were maintained (i.e., temperature, humidity, photo period, lighting, dimensions of test pens)?
- (6) Residue levels actually in diet (at beginning and end of exposure)?
- (7) Were all birds from the same hatch?
- (8) Were any antibiotics, vitamins or food additives added to food preceding or during testing?
- (9) What provisions were made to minimize food spillage and prevent air contamination by volatile chemicals?

B. Statistical Analysis: N/A.

C. Discussion/Results: With an LC₅₀ of greater than 10,000 ppm, Maneb is practically non-toxic to mallard ducks when administered through the diet.

D. Adequacy of the Study:

- (1) Classification: Supplemental.
- (2) Rationale: Although the report leaves a number of important questions unanswered (see 14C), the study was performed, basically, according to recommended protocols.
- (3) Reparability: N/A.