

US EPA ARCHIVE DOCUMENT

MRID No. 420197-38

DATA EVALUATION RECORD

1. **CHEMICAL:** Mon 13900, Shaughnessey Number 999999 ⁹¹¹⁵⁹⁶
CAS 121772-33-8
2. **TEST MATERIAL:** Mon 13900, 96.4% purity, a gray brown powder.
3. **STUDY TYPE:** Dietary LC₅₀ study with the Northern Bobwhite.
4. **CITATION:** Foster, J., C. Driscoll, K. Hoxter, and M. Jaber. 1990. A dietary LC₅₀ study with the Northern Bobwhite Wildlife International Ltd. Project No.: 139-261 FIFRA Guideline 71-2(a). Study performed by Wildlife International Ltd., Easton, Maryland. Submitted by Monsanto agricultural Company. MRID No. 420197-38.
5. **REVIEWED BY:**
- Renee Lamb
Biologist
Ecological Effects Branch (H7507C)
Environmental Fate & Effects Division
- Signature: *Renee Lamb*
Date: 1/15/92
6. **APPROVED BY:**
- Ann Stavola
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Ecological Effects Branch (H7507C)
Environmental Fate & Effects Division
- Signature: *Ann Stavola*
Date: 5/28/93
7. **CONCLUSIONS:** This study appears to be scientifically sound and meets the guideline requirements for an avian acute oral dietary study. The dietary LC₅₀ value for northern bobwhite exposed to Mon 13900 was determined to be greater than 5620 ppm, the highest concentration tested. The no mortality level was 3160 ppm, the NOEC was 562 ppm. Therefore, Mon 13900 is considered practically non toxic to upland game birds on a dietary basis.
8. **RECOMMENDATIONS:** N/A
9. **BACKGROUND:** N/A
10. **DISCUSSION OF INDIVIDUAL TESTS:** N/A
11. **MATERIALS AND METHODS:**
- A. **TEST ANIMALS:** The birds, Bobwhite quail, Colinus virginianus, were 10 days of age and in good health upon test initiation. They were all from the same hatch, pen-reared and phenotypically indistinguishable from wild birds. The birds were hatched at Wildlife International on April 16, 1990.
- B. **TEST SYSTEM:** All birds were housed indoors in brooding pens manufactured by Beacon Steel Products, Co. (Model



2078760

No. B735Q). The pens measured approximately 72 X 90 cm. with ceiling heights of approximately 23 cm. The temperature averaged $38^{\circ}\text{C} \pm 3^{\circ}\text{C}$ in the brooding compartment of the pens. Average ambient room temperature was $26^{\circ}\text{C} \pm 1^{\circ}\text{C}$ with an average relative humidity of $51\% \pm 9\%$. The photoperiod was maintained at 16 hours of light per day during acclimation and throughout the test. The birds were exposed to approximately 130 lux (12.03 foot candles) of illumination.

- C. **DOSAGE:** Treatment levels were based upon known toxicity data. Each of 6 groups were fed diets containing either 0, 562, 1000, 1780, 3160, or 5620 ppm of the test substance. The control birds received carrier only, equivalent to the greatest amount used in the treated diets.
- D. **DESIGN:** Each test group, and the control, were assigned a pen containing 10 birds. The chicks were immature and were not differentiated by sex. They were acclimated for 10 days prior to test initiation. The birds were fed a game ration ad libitum throughout the test.

Birds were observed daily for signs of toxicity and abnormal behaviors. Body weights by group were measured upon test initiation and on day 5, and at termination on day 8. Average estimated feed consumption was determined for each group for the exposure period, days 0-5, and for the post-exposure period days 6-8.

The test diets were prepared by mixing the test substance into the diet with corn oil (2% concentration). An amount of diet sufficient to last the five day exposure period was presented to the birds upon initiation of the test. The dietary concentrations were not adjusted for purity of the test substance.

- E. **STATISTICS:** No statistics were used to analyze the data.

12. **REPORTED RESULTS:**

There were 0 mortalities in the control, and all birds seemed normal in appearance and behavior throughout the test.

There were 0 mortalities at the 562 through 1780 ppm concentrations. All birds were normal in appearance and behavior.

There were 0 mortalities at the 3160 ppm concentration.

However, birds were intermittently ruffled in appearance and lethargic from day 4 until termination.

There were 3 mortalities at the 5620 ppm concentration. Signs of toxicity (ruffled appearance and lethargy) were first noted on day 4 and continued throughout the study. Upon necropsy, the birds showed evidence of autolysis and possible hemorrhagic lungs, one bird had a mild cerebral hemorrhage, and one had a pale liver. It could not be determined if these deaths were treatment related.

There was a reduction in body weight gain when compared to the controls, at the 1000 and 1780 levels and a weight loss at concentrations of 3160 and 5620 ppm. There was also a corresponding reduction in feed consumption at the 3160 and 5620 ppm concentrations during this same period.

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

The dietary LC₅₀ value for northern bobwhite exposed to Mon 13900 was determined to be greater than 5620 ppm, the highest concentration tested. The no mortality level was 3160 ppm, the NOEC was 562 ppm.

The report stated that the study was conducted under good laboratory practice standards and is signed by a quality assurance officer.

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

- A. TEST PROCEDURE: This test is in accordance with EPA's SEP protocol with the following exception:

0 Group body weights were measured at test initiation and termination, SEP recommends individual body weights at these times.

- B. STATISTICAL ANALYSIS: The results were such that no statistics could be used to analyze the data.

- C. DISCUSSION/RESULTS: This study appears to be scientifically sound and meets the guideline requirements for an avian acute oral dietary study. The dietary LC₅₀ value for northern bobwhite exposed to Mon 13900 was determined to be greater than 5620 ppm, the highest concentration tested. The no mortality level was 3160 ppm, the NOEC was 562 ppm.

- D. ADEQUACY OF STUDY:

- (1) CLASSIFICATION: Core
(2) RATIONALE: N/A
(3) REPAIRABILITY: N/A