

US EPA ARCHIVE DOCUMENT

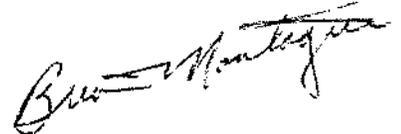
**Data Evaluation Report
Ecological Effects Branch**

1. **Chemical:** Methazole
2. **Test Material:** Methazole technical, 98.6% ai received from Vesicol Corp. ID no. WIL-931.
3. **Study Type:** Acute Oral Toxicity with bobwhite quail

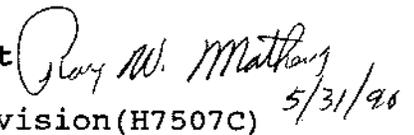
4. **Study Identification:**

Study Authors: Beavers, Joann and Mark Jaber
Study Laboratory: Wildlife International LTD,
Easton, Md.
Study Dates: 8/12/84 - 10/12/84
Study Identification: Project No. 107-204
Sponsor: Vesicol Chemical Corporation
EPA Identification: MRID 4080360-01

5. **Reviewed by:** Brian Montague, Fishery Biologist
Ecological Effects Branch
Environmental Fate and Effects Division



6. **Approved by:** Ray Matheny, Supervisory Biologist
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C) 5/31/90



7. **Conclusions:** Methazole has been shown to be nearly non-toxic to bobwhite quail on an oral basis with an LC₅₀ of 2838 mg/kg. with C.L.s of 1740-63,297 mg/kg.

8. **Recommendations:** N.A.

9. Submission Purpose: Submitted to support methazole reregistration requirements.

10. Study Design and Protocol: Protocol was based on Pesticide Assessment Guidelines, FIFRA subdivision E for testing of wildlife.

Test Organisms: 60 bobwhite quail, Colinus virginianus (30♂, 30♀) were used in the study. The birds were obtained from Fritts Quail Farm in Phillipsburg, N.J. and were approximately 6 months old at test initiation. The birds were acclimated for 14 or more days and observations noted no health problems with the animals during this time.

Test Diet Preparation: The test material was dispersed in corn oil at nominal dosage levels of 292 ppm, 486 ppm, 810 ppm, 1350 ppm, and 2250 ppm. Control birds received corn oil only. Feed was withheld 15 hours prior to dosage procedures.

Test Materials and Methods: The diet was intubated directly into the crop using a stainless steel catheter. The dosage was based on individual body weight measurements. Feed and water were available ad libitum following the dosing. Feed was a corn meal, oat and wheat based diet meal prepared at Wildlife International.

The birds were maintained in galvanized wire and sheet metal pens measuring 78 x 51 x 23 cm and housed 5 males or 5 females per pen. Temperature was maintained at 76±4°F with average humidity of 74%. An 8D/16N photoperiod was maintained and light intensity was 12 footcandles.

Daily observation of the birds was made. Individual body weights were measured at test initiation and birds were weighed by groups on days 3, 7, and 14. Feed consumption for each pen was measured on days 3, 7, and 14.

11. Test Results and Observations: No mortalities occurred with the control groups. Some loss in body weight was observed for control males, but was attributed to fighting, cannibalism, and toe picking.

Ten percent mortality was observed at the 486 and 1350 mg/kg dosage levels. Fifty percent mortality occurred in the 2250 mg/kg dosage level. Signs of toxicity included ruffled appearance, reduced reaction to external stimuli, lethargy, and wing droop and began on day 8. At the higher test level these signs continued through day 19. Weight loss occurred at all test concentrations for days 0-3 and for 4 more days

at dosages above 486 mg/kg. Feed consumption was reduced at all levels until day 3 and through day 7 at dosages above 810 mg/kg.

Mortalities occurred on days 12-17 at 1350 and 2250 mg/kg dosage levels and 1 mortality occurred on day 20 at 486 mg/kg.

12. **Study Author's Conclusions:** "In conclusion, the acute oral LD₅₀ value of technical methazole in the bobwhite for this study was 2838 mg/kg, with 95% confidence limits of 1740 mg/kg to 63,289 mg/kg. Mortalities occurred at dosages of 486 mg/kg, 1350 mg/kg and 2250 mg/kg. Based upon effects on body weight and feed consumption, the no-observed effect dosage was less than 292 mg/kg, the lowest dosage tested."
13. **Reviewer's Discussion:** The author's conclusion that significant effects begin at 292 mg/kg levels of methazole is supported by the initial reduction in feeding during the first 7 days. A part of this may have been due to stress as controls also showed reduced feed consumption, though not as significantly.

The Agency's toxanol program confirms results obtained by the study author when the probit method is used. The confidence limits obtained for moving average and binomial methods are not considered reliable.

Adequacy of Study:

Classification: Core

Rationale: Study has demonstrated the LD₅₀ to be above 2000 ppm.

Recommendations: N.A.

14. **One liner:** One liner entered 5/22/90

Montague Methazole bobwhite quail 05-22-90

| CONC. | NUMBER EXPOSED | NUMBER DEAD | PERCENT DEAD | BINOMIAL PROB. (PERCENT) |
|-------|-------------------|----------------|-----------------|-----------------------------|
| 2250 | 10 | 5 | 50 | 62.30469 |
| 1350 | 10 | 1 | 10 | 1.074219 |
| 810 | 10 | 0 | 0 | 9.765625E-02 |
| 486 | 10 | 1 | 10 | 1.074219 |
| 292 | 10 | 0 | 0 | 9.765625E-02 |

THE BINOMIAL TEST SHOWS THAT 0 AND +INFINITY CAN BE USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT CONFIDENCE LIMITS, BECAUSE THE ACTUAL CONFIDENCE LEVEL ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS 2250.001

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

| SPAN | G | LC50 | 95 PERCENT CONFIDENCE LIMITS | |
|------|----------|----------|------------------------------|-----------|
| 1 | 1.077681 | 2250.001 | 1725.612 | +INFINITY |

RESULTS CALCULATED USING THE PROBIT METHOD

| ITERATIONS | G | H | GOODNESS OF FIT PROBABILITY |
|------------|----------|---|-----------------------------|
| 6 | .6304428 | 1 | .2067359 |

SLOPE = 2.594942
95 PERCENT CONFIDENCE LIMITS = .5345469 AND 4.655336

LC50 = 2837.798
95 PERCENT CONFIDENCE LIMITS = 1740.112 AND 63297.62

LC10 = 919.5339
95 PERCENT CONFIDENCE LIMITS = 173.015 AND 1429.656
