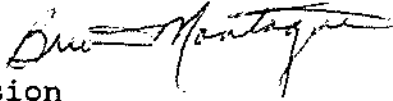



US EPA ARCHIVE DOCUMENT

**DATA EVALUATION REPORT  
ECOLOGICAL EFFECTS BRANCH**

1. **Chemical:** Methazole
2. **Test Material:** Technical grade, 99.9% purity received from Sandoz Crop Protection Corporation on 4/11/88 - Lot No. 56802290.
3. **Study Type:** Eight-day Dietary Toxicity Study with mallard duck, Anas platyrhynchos
4. **Study Identification:**
  - Study Author: Grimes, Jennie and Mark Jaber
  - Laboratory: Wildlife International, Easton, MD
  - Study Dates: 5/22/88-6/3/88
  - Study Identification: Project No. 131-135
  - Sponsor: Sandoz Crop Protection Corp.,  
Des Plains, IL
  - EPA Identification: MRID 407818-02
5. **Reviewed by:** Brian Montague, Fisheries Biologist   
Ecological Effects Branch  
Environmental Fate and Effects Division
6. **Approved by:** Ray Matheny, Supervisory Biologist  5/31/90  
Ecological Effects Branch  
Environmental Fate and Effects Division (H7507C)
7. **Conclusions:** Based on the data presented, methazole is nearly non-toxic to mallards with an LC<sub>50</sub> in excess of 5620 mg/kg.
8. **Recommendations:** N/A

9. **Submission Purpose:** To support re-registration data requirements.

10. **Test Methods and Protocol:** Protocol was based on ASTM Standard E857-81 "Standard Practice for Conducting Subacute Dietary Toxicity Test with Avian Species" and EPA testing guidelines.

**Test:** The mallards were obtained from Whistling Wings in Hanover, IL on May 18 and acclimated over 10 days prior to test initiation. Five control groups of ten ducklings each and five test concentration groups of 10 ducks each were utilized. The birds were fed Wildlife International's own formulated gamebird ration during acclimation and testing. Body weights were measured by group at test initiation, on day 5, and on day 8. Estimated food consumption (includes feed consumed and feed spillage) was determined for days 0-5 and days 6-8.

**Diet Preparation:** Corn oil was used as the vehicle and controls received the amount equivalent to that contained in the highest concentration diet. The nominal estimated concentrations were 562 ppm, 1000 ppm, 1780 ppm, 3160 ppm, and 5620 ppm of active ingredient. Corn oil content comprised two percent of all diets. Diets were prepared on May 16 and held frozen until test initiation. Homogeneity testing of samples by Hazelton Laboratories in Madison, WI yielded 74-88 percent of the nominal concentration estimate before correcting for control estimate yield error. The diet samples tested were taken during acclimation and at test initiation for all test levels.

**Test Materials and Methods:** The test birds were randomly selected and assigned to galvanized steel wire holding pens measuring 72 x 90 cm and 24 cm high. Each pen was numbered to identify individual groups. Temperature was maintained at 31±2°C in the brooding compartment of each pen. A humidity of 62% was maintained, as well as a photo-period of 16 hours daylight using fluorescent tubes with an output of 12 foot candles. The test birds were observed twice per day during testing and signs of toxicity, mortality, and behavior were noted.

11. **Study Results:** No mortality occurred in the controls, 562 ppm, 1000 ppm, or 1780 ppm test groups. Ten percent mortality was recorded in the 3160 ppm and 5620 ppm test concentration. Signs of toxicity were noted in all test concentrations on the first day. Single mortalities occurred at 3160 ppm on day 4 and at 5620 ppm on day 7. Reductions in feed consumption and subsequent reduction in

body weight gain were seen at all test levels and were significant in comparison to controls. Birds returned to normal rates of food consumption when returned to regular laboratory diets. Variation in food consumption between controls and test birds ranged from 67% to 85% during administration of the test diet but returned to levels within 24-15% of control group feed consumption by day 8.

12. **Study Author's Conclusions:** "The dietary LC<sub>50</sub> value of methazole technical in the mallard was determined to be greater than 5620 ppm active ingredient (a.i.), the highest concentration tested. The no-observed effect concentration was less than 562 ppm based on signs of toxicity, loss in body weight, and a reduction in feed consumption at 562 ppm concentration."
13. **Reviewer's Discussion:** Inadequate mortality makes an accurate computation of the actual LC<sub>50</sub> value difficult. The fact that weight loss occurred at the lowest concentration also makes determination of an accurate NOEL difficult. The weight loss is felt to be related to the fact that test birds all displayed an apparent aversion to feed containing the toxicant at concentrations as low as 562 ppm. The compound appears to be nearly non-toxic to mallards based on lack of significant mortality. However it is toxic to a low degree at concentrations above 3160 ppm. These values are well above EEC's predicted from present use patterns and application rates. The fact that a NOEL has not been established may require that chronic effects be tested before a complete risk assessment can be performed.

#### **Adequacy of Study**

**Classification:** Core

**Rationale:** The study has established that the LC<sub>50</sub> is above 5000 mg/Kg and therefore satisfies EPA testing requirements.

**Repairability:** N/A

14. **One liner:** Entered May, 1990.