

US EPA ARCHIVE DOCUMENT

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6-2-80

- 1. Chemical: Aquatreat DNM-30
- 2. Formulation:

Sodium dimethyldithiocarbamate	15%
Nabam (disodium ethylene-bis-dithiocarbamate)	15%
Inert Ingredients	70%

3. Citation:  
  
Ferrer, L. 1979. Report on Subacute Dietary LC<sub>50</sub> in Mallard Ducks. An unpublished report prepared by Wells Laboratories, Inc. for Alco Chemical Corporation. (Accession No. 241378)

4. Reviewed By: Daniel Rieder  
Wildlife Biologist

5. Date Reviewed: June 2, 1980

6. Test Type:  
  
Avian Dietary with the Mallard Duck and Aquatreat DNM-30 (30% active ingredient).

7. Reported Results:  
  
The 8-day dietary LC<sub>50</sub> for Mallard Ducks exposed to the formulated product of Aquatreat was reported as 7500 ppm.

8. Reviewer's Conclusion:  
  
The acute eight-day dietary test indicated that the formulated product Aquatreat is practically non-toxic to mallard ducks. This study was scientifically conducted but does not meet the requirements in the EPA proposed guidelines. The study does not meet regulatory requirements because the formulated product was used rather than the technical grade of each active ingredient.



## METHODS

### A. Test Procedure

Protocol essentially followed EPA proposed guidelines of July 10, 1978. Ten ducks (seventeen days old) were used per concentration level. The formulated product rather than the technical grade was used. Six concentrations levels (1000, 2500, 5000, 7500, 10,000 and 12,500 ppm) as well as a control were tested. The birds were weighed at the beginning of the test, but their weights at termination were not reported.

### B. Statistical Analysis

The statistical method for determining the dietary LC<sub>50</sub> was not identified.

### C. Results

The reported dietary LC<sub>50</sub> = 7500 ppm for Aquatreat (formulated product). There were no deaths in the control. Food consumption was less for the test ducks than the control ducks.

## Reviewer's Evaluation

### A. Test Procedure

The primary deficiency with this avian dietary toxicity test was that the formulated product rather than the technical or pure grade was used.

### B. Statistical Analysis

The test data were used to calculate an avian 8-day dietary LC<sub>50</sub> using Stephens statistical computer program. The result was an LC<sub>50</sub> of 7021 ppm using the probit method, the printout is included with the original review on file at the Ecological Effects Branch.

### C. Discussion

According to this test, Aquatreat is practically non-toxic to birds.

### D. Conclusions

1. Category: Supplemental

2. Rationale

The formulated product, rather than the technical grade of the active ingredients was tested.

3. Repairability: N/A

AQUATREAT DNM-30  
 8-DAY DIETARY TEST WITH MALLARD DUCKS  
 D. Rieder (6/4/80)

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
12500	10	9	90.	1.07422
10000	10	6	60.	37.6953
7500	10	5	50	62.3047
5000	10	3	30.	17.1875
2500	10	1	10.	1.07422
1000	10	0	0	9.76563E-2

THE BINOMIAL TEST SHOWS THAT 2500 AND 12500 CAN BE USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT CONFIDENCE LIMITS SINCE THE ACTUAL CONFIDENCE LEVEL ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS 7500.

-----RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
5	.244326	6941.14	5198.33	9349.19

-----RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
5	.268612	1	.85725

SLOPE = 3.31355  
 95 PERCENT CONFIDENCE LIMITS = 1.59621 AND 5.0309

LC50 = 7021.47  
 95 PERCENT CONFIDENCE LIMITS = 5131.89 AND 9597.9

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