

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD

- 1. Chemical: Monoammonium-2-amino-4-(hydroxy methyl) phosphinyl butanate.
- 2. Test material: HOE 39866 tech.; 95.3% ai.
- 3. Study Type: Avian Dietary LC<sub>50</sub> - 8-day  
Species tested: Colinus virginianus  
Bobwhite quail
- 4. Study ID: Ebert and Weigand. 1984. 8-day dietary LC<sub>50</sub> Test in Bobwhite Quail HOE 039866 Tech. Performed by Hoechst AG, Frankfurt, Germany; submitted by American Hoechst Somerville, NJ. Accession No. 256761.

5. Reviewed By: John J. Bascietto  
Wildlife Biologist  
EEB/HED  
Signature: John J. Bascietto  
Date: 5/14/85

6. Approved By: Dave Coppage  
Supervisory Biologist  
EEB/HED  
Signature: Dave Coppage  
Date: 5/14/85

7. Conclusions:

The study is scientifically sound. With an LC<sub>50</sub> > 5000 ppm the technical grade HOE 39866 is considered "practically nontoxic" to bobwhite quail. The study fulfills a requirement of the Pesticide Assessment Guidelines, Subdivision E.

8. Recommendations:

N/A

9. Background:

The study was submitted to support an EUP for soybeans, noncrop, groundskeeping and nonbearing tree and vine crops.

10. Discussion of Individual Studies:

N/A

11. Materials and Methods:

A. Test Animals:

Bobwhite quail chicks (Colinus virginianus); 14-days old at initiation of treatment (male and female) obtained from Hoechst AG, breeder at Kastegrund ("conventional breed"). Initial mean weight = 16.2 g, n = 40.

Test System:

Quail housed in subgroups of five each in Type 4 Makrolon cages with wire mesh floors, 55 x 18 x 35 cm. Average temperature = 27 to 29 °C; RH = 40 to 45 percent; 16 hr light/8 hr dark. Quail fed special chick starter ration. Food and water were available ad libitum.

B. Dose:

Five days experimental diet followed by 3 days "clean" diet. Experimental diets contained the test material HOE 39866 (see below).

C. Design:

Controls - 10 birds: 0 ppm test material in diet ("clean").

Experimentals - 10 birds per dose as follows:

test material = 1250/2500/5000 mg/kg food (ppm)

D. Statistics:

None

12. Reported Results:

Mortality

<u>Dose</u> <u>(mg/kg)</u>	<u>No. Dead by Day 8</u>	<u>% Dead</u>
0	0	0
1250	1	10
2500	2	20
5000	4	40

.... "very few animals showed signs of intoxication in the form of disequilibrium, standing on hocks, sun-bath position and ruffled feathers on day 5 of treatment" (report p. 8).

No macroscopically visible abnormalities upon necropsy of survivors. Blackish brown mass in intestines of dead birds. Light color to liver in one bird from 5000 ppm group.

13. Study Author's Conclusions/Q.A. Measures:

"Based on these results, the 8-day dietary LC<sub>50</sub> for HOE 039866, active ingredient technical, in bobwhite quail chicks (Colinus virginianus) is approximate 5000 mg/kg diet (ppm)." (report p. 9).

Q.A. - Study states: "The present study was conducted in accordance with EPA Guidelines..... and in accordance with the currently valid OECD Principles of Good Laboratory Practice Annex 2 of 'OECD Guidelines for Testing of Chemicals', OECD 1981."

p. 19 - (3) Q.A. inspections were reported to have been performed - signed by: Apoth. S.J. Harston.

14. Reviewer's Discussion and Interpretation of the Study:

A. Test Procedures:

The procedures were generally in accordance with the Pesticide Assessment Guidelines. There were no major deviations of experimental procedures from guidelines.

B. Statistical Analysis:

None were necessary. The LC<sub>50</sub> was estimated by EEB to be greater than 5000 ppm (see attached sheet).

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
5000	10	4	40	37.6953
2500	10	2	20	5.46875
1250	10	1	10	1.07422

THE BINOMIAL TEST SHOWS THAT 1250 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 0

THE MOVING AVERAGE METHOD CANNOT BE USED WITH THIS DATA SET BECAUSE NO SPAN WHICH PRODUCES MOVING AVERAGE ANGLES THAT BRACKET 45 DEGREES ALSO USES TWO PERCENT DEAD BETWEEN 0 AND 100 PERCENT.

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
2	1.57972	1	.89535

SLOPE = 1.73408  
 95 PERCENT CONFIDENCE LIMITS = -.445431 AND 3.91358

LC50 = 7177.18  
 95 PERCENT CONFIDENCE LIMITS = 3479.18 AND +INFINITY

LC10 = 1329.15  
 95 PERCENT CONFIDENCE LIMITS = 0 AND 2649.41

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