

US EPA ARCHIVE DOCUMENT

golden 71-1 3-23-89
406126-15

DATA EVALUATION RECORD

1. Chemical: GX-071
2. Test Material: 99% (technical ai)
3. Test Type: Avian Acute Oral LD₅₀
Test Species: Bobwhite Quail (Colinus Virginianus)
4. Study ID: Villegas, P. (1985) GX-071 (Lot 4) - Avian LD₅₀ Test in Bobwhite Quail; Project No. UGA 013; Prepared by Department of Avian Medicine for Griffin Corporation, P.O. Box 1847, Valdosta, Georgia 31603-1847; Accession No. 406126.
5. Reviewed By: Curtis E. Laird
Fishery Biologist
EEB/EFED
Signature: *Curtis E. Laird*
Date: 3-22-89
6. Approved By: Norman J. Cook
Supervisory Biologist
EEB/EFED
Signature: *Norman J. Cook*
Date: 3-23-89
7. Conclusions:

This study appears to indicate GX-071 is moderately toxic to bobwhite quail with an LD₅₀ of 474 mg/kg. This study does not fulfill the requirement in support of registration for an avian acute oral LD₅₀ study for any outdoor uses. It can, however, be used to support the proposed indoor only cockroach use.
8. Recommendation: N/A
9. Background:

This study was submitted in support of GX-071 registration.
10. Discussion of Individual Test: N/A

11. Material and Methods:

- A. Test Animals - Test animals were bobwhite quail from Price's Quail Farm, Swainsboro, GA; Age = 16 weeks and 6 days.
- B. Test Design - Birds were tested in wire cages; size = 36 x 36 x 26"; temperature ranged from 72 to 75 °F; birds were tested indoors.
- C. Dose - Ten birds per dose level; 5 dose levels plus negative control (0, 91, 201, 293, 380, and 470 mg/kg).
- D. Statistical Analysis: Probit Analysis

12. Reported Results:

The study author found the acute oral LD₅₀ to be 473 mg/kg.

13. Study Author's Conclusion/Quality Assurance Measures:

The acute oral LD₅₀ was 473 mg/kg. This study conformed with all applicable laws and regulations as well as to the U.S. Environmental Protection Agency's Good Laboratory Practice Standard (FEDERAL REGISTER 48 (230), 53946, November 29, 1983).

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

- A. Test Procedure - The test procedure complied with the recommended EPA protocol of October 1982.
- B. Statistical Analysis - The statistics were verified with Stephan's computer program as 473 mg/kg.
- C. Discussion/Results - GX-071 appears to be moderately toxic to bobwhite quail with an LD₅₀ of 474 mg/kg and 95% confidence limits of 357 and 2120 mg/kg.
- D. Adequacy of Study:
 - 1) Category: Supplemental
 - 2) Rationale: This study is classified supplemental because the highest doses produced only 40-50% mortality. Higher doses, producing > 50% mortality are required, in order to better bracket the LD₅₀ value.

3) Reparability: None Another study including higher doses is required to support any outdoor uses. This study can be used to support an indoor only cockroach use.

15. Completion of One-Liner for Study: Yes

16: CBI Appendix: N/A

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
470	10	4	40	37.69531
380	10	5	50	62.30469
293	10	2	20	5.46875
201	10	1	10	1.074219
91	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 0

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS
1	2.169064	379.9998	0 +INFINITY

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
3	.6339239	1	.7465863

SLOPE = 3.514854
 95 PERCENT CONFIDENCE LIMITS = .7163503 AND 6.313358

LC50 = 473.7611
 95 PERCENT CONFIDENCE LIMITS = 357.2498 AND 2119.608

LC10 = 206.1747
 95 PERCENT CONFIDENCE LIMITS = 28.62872 AND 280.7944
