gdln 71-2 3-23-89
MRID 406126-17

DATA EVALUATION RECORD

1. Chemical: GX-071

2. Test Material: 99% (technical ai)

3. Test Type: Avian Dietary LC_{50}

   Test Species: Bobwhite Quail (Colinus virginianus)

4. Study ID: Villegas, P. (1985) GX-071 (Lot No. 4) A Dietary LC_{50} Study with the Bobwhite Quail; Project No. VAG-014; 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 highly toxic to bobwhite quail with an LC_{50} of 461 ppm. This study does not fulfill the requirement in support of registration for avian dietary LC_{50} study for any outdoor uses. It can be used, however, 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 10-day-old bobwhite quail from Prices' Quail Farm, Swansboro, Georgia.

B. Test Design - Birds were tested in modified Horofall-Bauer Isolation Units; temperature ranged from 82 to 90 °F.

C. Dose - Ten birds per dose level; five dose levels plus control (0, 50, 150, 250, 375, and 500 ppm).

D. Statistical Analysis - The statistics were verified with probit procedure of SAS, 1982 edition, 460 ppm, 95% fiducial limits of 382-770 ppm.

12. Reported Results:

The study author found the 8-day dietary LC_{50} value to be 460 ppm.

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

The 8-day dietary LC_{50} was 460 ppm. This study conformed with all applicable laws and regulations as well as conforming to the U.S. EPA Good Laboratory Practice standards (FEDERAL REGISTER, 48 (230), 53946, November 29, 1983).

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

A. Test Procedure - The test procedures complied with the recommended EPA Protocol of October 1982. Note, however that soybean oil was used as a diluent. Also, mixing of diet was done in plastic bag for 10 minutes.

B. Statistical Analysis - The statistics were verified with Stephan's computer program as 461 ppm, 95% CL = 381-794 ppm.

C. Discussion/Results - GX-071 appears to be highly toxic to bobwhite quail with an LC_{50} of 461 ppm.

D. Adequacy of Study:

1) Category: Supplemental

2) Rationale: This study is considered supplemental until it can be shown that nominal and actual concentrations are similar using the mixing technique described, The study can be used, however, to support the indoor only cockroach use.

3) Reparability: Possible, if residue analyses data indicate GX-071 nominal and actual concentrations are similar under the conditions of the study.

15. Completion of One-Liner for Study:

16. CBI Appendix: N/A

Laird GX-071 Bobwhite Quail 05-27-88

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
500	10	7	70	17.1875
375	10	1	10	1.074219
250	10	1	10	1.074219
150	10	0	0	9.765625E-02
50	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 457.0492

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
1	.5098017	457.0492	409.3264	571.0271

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
19	.5576503	1	.4001812

SLOPE = 6.512571

95 PERCENT CONFIDENCE LIMITS = 1.649245 AND 11.3759

LC50 = 460.6657

95 PERCENT CONFIDENCE LIMITS = 381.3415 AND 793.8086

LC10 = 294.0209

95 PERCENT CONFIDENCE LIMITS = 110.4884 AND 359.7689

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