

US EPA ARCHIVE DOCUMENT

CASE 68065

ALACHLOR

PP 200 06/10/82

CHEM 0905.1

Alachlor (2-chloro-2',6'-diethyl-4-me

BRANCH EEB

DISC # TOPIC 05.51542

FORMULATION 30 - ACTIVE INGREDIENT

FICHE/MASTER ID 00179523

CONNECT CAT 01

Fink, R.; Beavers, J.S.; Brown, R.; et al. (1979) Final Report:
Acute Oral LD50--Bobwhite Quail: Project no. 139-179. (Unpub-
lished study received Jun 2, 1981 under 524-285; prepared by
Wildlife International, Ltd., submitted by Monsanto Co., Wash-
ington, D.C.; D.L:245290-A)

SUBST. CLASS = 8.

DIRECT Rvw FILE = (000) START-DATE 10-29-82 END DATE

REVIEWED BY: *Curtis E. Laird*
TITLE: *Fishery Biological*
ORG: *EEB/HED*
LOC/TEL: *Cm #2, Rm 1125B*

SIGNATURE: *Curtis E. Laird*

DATE: 3-24-83

APPROVED BY:

TITLE:

ORG:

LOC/TEL:

SIGNATURE:

DATE:

1. Chemical: Alachlor
2. Formulation: 92.3% (technical a.i.) pinkish -amber waxy crystalline material).
3. Citation: Fink, R.; Beavers, J.B.; Brown, R. (1979) Acute Oral LD50 Bobwhite Quail; Project # 139-179; prepared by Wildlife International, Ltd for Monsanto Company, Washington, D.C.
4. Reviewed By: Curtis E. Laird
Fishery Biologist
EEB/HED
5. Date Reviewed: 10-29-82
6. Test Type: Acute Oral LD50
 - A. Test Species: Bobwhite Quail
7. Reported Results: The reported Acute Oral LD50 was approximately 1536 mg/kg.
8. Reviewer's Conclusion: This study is scientifically sound and shows Alachlor is slightly toxic to bobwhite quail with an LC50 of 1554 mg/kg. This study does fulfill the requirement in support of registration.

Material/Methods

Test Procedure

The test procedure complied with the recommended EPA protocol of July 1978.

Statistical Analysis

Finney Probit

Discussion/Results

The acute oral LD50 was 1536 mg/kg

Controls- There were no mortalities in the negative control group. All birds were normal in both appearance and behavior throughout the test period.

Experimental Material - There was a 60% mortality rate at the 1590 mg/kg dosage level, and 100% mortality at the 2510 mg/kg dosage level.

All birds at both the 398 mg/kg and 631 mg/kg dosage levels appeared normal during the course of the study. At the 1000 mg/kg dosage level, some lethargy was noted on Day 4. At all other times, all birds were asymptomatic.

At the 1590 mg/kg dosage level, lethargy reduced reaction to external stimuli (sound and movement), and a ruffled appearance noted within six hours after dosing. One hen was noted exhibiting lethargy, reduced reaction to external stimuli (sound and movement), wing droop, and a ruffled appearance on Day 2. Other surviving birds at this dosage level were asymptomatic on Day 2. A few birds were noted as lethargic on Days 3 and 4, with two hens also exhibiting depression, reduced reaction to external stimuli (sound and movement), wing droop, and a ruffled appearance on Day 4. One hen continued to exhibit these symptoms of toxicity until death on Day 6, while all other birds at this dosage level were asymptomatic on Day 5, and remained so until the termination of the study.

Symptoms of toxicity noted prior to death at the 2510 mg/kg dosage level included depression, reduced reaction to external stimuli (sound and movement), wing droop, loss of coordination, and lower limb weakness.

At the 631 mg/kg through 2510 mg/kg dosage levels, there was a dose related reduction in feed consumption for the first seven day period, and a loss in average body weight at Day 3. Both body weight and feed consumption of surviving birds had returned to normal by the termination of the study.

Reviewer's Evaluation

A. Test Procedure

The test procedure complied with the recommended EPA protocol July 1978.

B. Statistical Analysis

LAIRD ALACHLOR ACUTE ORAL LD50 00079523 Bobwhite Quail LD50

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
2510	10	10	100	0.09765625
1590	10	6	60	37.69531
1000	10	0	0	0.09765625
631	10	0	0	0.09765625
398	10	0	0	0.09765625

THE BINOMIAL TEST SHOWS THAT 1000 AND 2510 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 1499.199

WHEN THERE ARE LESS THAN TWO CONCENTRATIONS AT WHICH THE PERCENT DEAD IS BETWEEN 0 AND 100, NEITHER THE MOVING AVERAGE NOR THE PROBIT METHOD CAN GIVE ANY STATISTICALLY SOUND RESULTS.

C. Conclusion

1. Category: Core
2. Rationale: N/A
3. Repairability: N/A