US EPA ARCHIVE DOCUMENT

108801
SHAUGHNESSEY NO.

17
REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 4/6/81 OUT 4/14/81

FILE OR REG. NO. 100-587, 100-597

PETITION OR EXP. PERMIT NO.

DATE DIV. RECEIVED 4/2/81

DATE OF SUBMISSION 3/31/81

DATE SUBMISSION ACCEPTED

TYPE PRODUCT(S): I, D, H, F, N, R, S Herbicide

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. R. Mountfort (23)

PRODUCT NAME(S) Metolachlor

COMPANY NAME Ciba-Geigy

SUBMISSION PURPOSE Submission of mallard duck acute oral LD50 identified as data gap in registration standard

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.

Test - Core

108801

Data Evaluation Record

1. Chemical: Metolachlor

2. Formulation: Technical

3. Citation: Wildlife International Ltd. (1981). Acute Oral LD_{50} - Mallard Duck, Metolachlor Technical, Final Report. Submitted to Ciba-Geigy Corporation, Greensboro, N.C. March 23, 1981.

4. Reviewed By: Mary L. Gessner
Fishery Biologist
HED/EEB

5. Date Reviewed: 9 April 1981

6. Test Type: Avian Acute Oral LD_{50}
Test Species: Mallard Duck

7. Reported Results: The acute oral LD_{50} of metolachlor to mallard ducks was determined to be > 2510 mg/kg. Dosage levels tested were: 398, 631, 1000, 1590, and 2510 mg/kg. Only one death occurred (1590 mg/kg pen) and was attributed to an attack by another drake in the pen.

8. Reviewer's Conclusions: The study is scientifically sound and does fulfill the requirement for an avian acute oral LD_{50} study. Metolachlor is practically non-toxic to mallard ducks.

Materials/Methods

Test Procedure

Age of birds at initiation of study was 6 months. Birds were acclimated to test conditions for two weeks prior to testing. Birds were randomly separated into 6 groups of 10 (5 males and 5 females each) and placed in experimental pens by dosage level. Feed was withheld from control and test birds for 15 hours prior to dosing. Metolachlor was dissolved in corn oil and intubated directly into the crop via a stainless steel catheter. Control birds received a dose of corn oil only.

Body weights were recorded individually at initiation, and by pen at 3, 7 and 14 days. Feed consumption was measured for days 1 - 7 and 8 - 14. Feed and water were available ad libitum throughout the study.

Statistical Analysis

Mortality was analyzed statistically by probit analysis according to Finney, D.J. (1971).

Discussion / Results

The acute oral LD_{50} of Metolachlor to mallard ducks was reported to be greater than 2510 mg/kg. One duck at the 1590 mg/kg level died, but death was attributed to an attack by another drake in the pen. All other birds were normal in both appearance and behavior throughout the test period. No overt symptoms of toxicity were observed at any dosage level. No mortalities occurred in the control group.

Reviewer's Evaluation

A. Test Procedure

Protocol generally followed EPA proposed guidelines of July 10, 1978.

B. Statistical Analysis

Since less than half the birds died at the dosage level above 2000 mg/kg (2510 mg/kg), the LD_{50} is determined to be greater than 2510 mg/kg. Therefore, no median response level or 95% confidence intervals are required.

C. Discussion / Results

The reported LD_{50} value is acceptable.

D. Conclusions

1. Category: Core

2. Rationale: Study is scientifically sound and follows recommended protocol. With an LD_{50} greater than 2000 mg/kg., Metolachlor is practically non-toxic to mallard ducks.

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