6-12-00

MRID No. 443735-08

DATA EVALUATION RECORD
§ 71-2 - WATERFOWL DIETARY LC_{50} TEST

1. **CHEMICAL:** Mesotrione PC Code No.: 122990

2. **TEST MATERIAL:** ZA1296 Purity: 96.8%

3. **CITATION:**

Authors:	M. Rodgers, D.M. Cameron, and K. Maltby
Title:	ZA1296: Subacute Dietary Toxicity (LC_{50}) to the Mallard Duck
Study Completion Date:	November 29, 1995
Laboratory:	Huntingdon Life Sciences Ltd., Huntingdon, Cambridgeshire, England
Laboratory Report ID:	ISN 346/951543
Sponsor:	ZENECA Ag Products, Wilmington, DE
MRID No.:	443735-08
DP Barcode:	D245475

4. **REVIEWED BY:** Max Feken, M.S., Environmental Toxicologist, Golder Associates Inc.

Signature: [signature] **Date:** 8/25/98

APPROVED BY: Pim Kosalwat, Ph.D., Senior Scientist, Golder Associates Inc.

Signature: P. Kosalwat **Date:** 8/25/98

5. **APPROVED BY:**

Signature: [signature] **Date:** 6/12/00

6. **STUDY PARAMETERS:**

Scientific Name of Test Organism: *Anas platyrhynchos*
Age of Test Organisms at Test Initiation: 10 days
Definitive Study Duration: 8 days

7. **CONCLUSIONS:** This study is scientifically sound and fulfills the guideline requirements for an acute dietary toxicity test using the mallard. The LC_{50} was >5130 ppm, which classifies ZA1296 as practically non-toxic to the mallard duck.

Results Synopsis:

LC_{50}: >5130 ppm 95% C.I.: N/A

NOEC: 5130 ppm Probit Slope: N/A

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8. **ADEQUACY OF THE STUDY:**

   A. Classification: Core

   B. Rationale: N/A

   C. Repairability: N/A

9. **GUIDELINE DEVIATIONS:** The brooder temperature was not reported.

10. **SUBMISSION PURPOSE:**

11. **MATERIALS AND METHODS:**

   A. Test Organisms

Guideline Criteria	Reported Information
Species: A wild waterfowl species, preferably the mallard (*Anas platyrhynchos*).	*Anas platyrhynchos*
Age at beginning of test: 5-10 days old (preferably 5).	10 days old
Supplier	The Country Game Farms, Hothfield, Ashford, Kent
Ducklings appeared healthy and did not have excessive mortality before the test?	Yes
Acclimation period: As long as possible.	3 days

   B. Test System

Guideline Criteria	Reported Information
Pen size: about 70 x 100 x 24 cm	1.80 m x 1.22 m floor pens
Brooder temperature: about 35°C (95°F)	Not reported
Room temperature: 22-27°C (71-81°F)	Mean Min. 23°C Mean Max. 25°C

Guideline Criteria	Reported Information
Relative humidity: 30-80%	Mean relative humidity of 53%
Adequate ventilation?	Yes
Photoperiod Minimum of 14 h of light.	14 hours of light per day
Diet: A commercial gamebird diet.	Standard HRC chick diet supplied by Parker Brothers, Ltd.

C. **Test Design**

Guideline Criteria	Reported Information
Range finding test?	No
Definitive Test **Nominal concentrations:** Four minimum, 5 or 6 strongly recommended, in a geometric scale, unless LC_{50} > 5000 ppm.	163, 325, 650, 1300, 2600, and 5200 ppm, not corrected for purity.
Controls: Control group tested with diet containing the maximum amount of vehicle used in treated diets?	2 control groups, no vehicle
Number of birds per group: 10 (strongly recommended)	10 birds per group
Vehicle: Distilled water, corn oil, propylene glycol, 1% carboxymethylcellulose, or gum arabic.	None
Vehicle amount (% of diet by weight): Not more than 2%	N/A
Test durations: 5 days with treated feed and at least 3 days observation with "clean" feed.	Five day exposure period followed by a 3-day observation period

Guideline Criteria	Reported Information
No mortality during last 72 hr of observations?	Yes

12. REPORTED RESULTS:

Guideline Criteria	Reported Information
Quality assurance and GLP compliance statements were included in the report?	Yes
Body weights measured at beginning and end of study?	Yes, group body weights measured at 0, 5, and 8 days.
Estimated consumption per pen reported for pretreatment, treatment, and observation periods?	Yes, daily from test days 1-5, and then days 6-8
Control Mortality: Not more than 10%	0%
Raw data included?	Yes
Signs of toxicity (if any) were described?	Yes

Mortality

Conc. (ppm)		No. of Birds	Cumulative Number of Dead							
			Day of Study							
Nominal	Measured		1	2	3	4	5	6	7	8
Control	<12	20	0	0	0	0	0	0	0	0
163	160	10	0	0	0	0	0	0	0	0
325	322	10	0	0	0	0	0	0	0	0
650	685	10	0	0	0	0	0	0	0	0
1300	1330	10	0	0	0	0	0	0	0	0
2600	2450	10	0	0	0	0	0	0	0	0
5200	5130	10	0	0	0	0	0	0	0	0

Other Significant Results: There were no signs of toxicity or treatment related mortalities at any concentration tested. When compared to the control, there were no treatment related effects on feed consumption or bodyweight gain. Necropsy results on twenty birds (10 from the 5200 ppm group and 10 from the control group) were unremarkable.

Statistical Results

Statistical Method: visual interpretation (based on nominal concentrations)

LC_{50}: >5200 ppm 95% C.I.: N/A

NOEC: 5200 ppm Probit Slope: N/A

13. VERIFICATION OF STATISTICAL RESULTS:

Statistical Method: visual interpretation (based on measured concentrations)

LC_{50}: >5130 ppm 95% C.I.: N/A

NOEC: 5130 ppm Probit Slope: N/A

14. REVIEWER'S COMMENTS: This study is scientifically sound and fulfills the guideline requirements for an acute dietary toxicity test using the mallard. The LC_{50} was >5130 ppm, which classifies ZA1296 as practically non-toxic to the mallard duck. The NOEC was 5130 ppm, based on a lack of treatment related effects at any of the concentrations tested. The study is classified as **Core**.