FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator: R. Balcomb			Date: Oct. 7, 1977				
Technical		Permethrin PP557	Test Type: Avian Acute Oral Mallard Duck							
			Test ID # ES-C-1							

CITATION: Ross, D.B., Cameron, D.M., and Roberts, N.L. "The Acute Oral Toxicity (LD_{50}) of PP557 (Permethrin) to the Mallard Duck According to EPA Guidelines." Huntingdon Research Center, Report No. ICI 68 WL/77205 (July, 1977).

VALIDATION CATEGORY: Core

RESULTS: Twenty male and 20 female Mallard ducks (Anas platyrhynchus p.) were evenly divided into test and control groups. Test ducks were dosed with 10 ml of technical material and controls received 10 ml of corn oil.

Group	Birds per Group	Sex	Dose level	Mortalities	(0-21 days) Body Weight Change
1	10	M	0	0	-1 g
2	10	M	9868 mg/kg	0	-27 g
3	10	F	0	0	+24 g
4	10	F	10,327 mg/kg	0	+10 g

All birds were subdued for 1-2 hours after dosing. Several birds in groups 2 and 4 made unsuccessful attempts to vomit but no other abnormal signs were observed. The birds appeared to remain in good health throughout the study and post-mortem examination revealed no abnormalities.

Male ducks showed slight body weight loss (3% controls, 4.8% test) during first 9 'days' after dosing but returned to near normal weight by day 21. Losses were not considered abnormal.

Due to the lack of mortalities, the LD_{50} values were estimated as > 10327 mg/kg for females and > 9869 mg/kg for males.

VALIDATION CATEGORY/RATIONALE: The study follows EPA guidelines. LD_{50} was not established as maximum practicable dose level was relatively non-toxic.

CATEGORY REPAIRABILITY/RATIONALE: NA

DATA REVIEW NUMBER : (ES) (103.0) C.1

TEST : Acute Oral LD_{50}: Avian Species

SPECIES : Mallard Duck, Anas platyhynchos

RESULTS :

Acute Oral LD_{50} = > 11,275 mg/kg

Bodyweight depression observed.

CHEMICAL : Permethrin (PP557): 92% a.i.

TITLE : The Acute Oral Toxicity (LD_{50}) of PP 557 (Permethrin) to mallark ducks

ACCESSION NO : 227722

STUDY DATE : March 5, 1976

RESEARCHER : Ross, David B., et.al., Huntingdon Research Centre

REGISTRANT : ICI United States, Inc.

VALIDATION CATEGORY : Invalid

CATEGORY REPAIRABILITY : No.

ABSTRACT :

Avian acute oral LD_{50} of mallard ducks tested against 92% a.i. Permethrin was determined.

ADDITONAL INFORMATION/COMMENTS

A. Additional Test Data

1. Intent of Study: To determine the acute oral LD_{50} of technical permethrin to young adult mallard ducks.

2. Methodology/Protocol

a. 30 young adult mallard ducks were used in the study. 18 birds were used for initial range finding and the remaining 12 birds were allocated to treatment as follows:

Group No.	No. Birds	Dog Level (Mg PP557/kg. bird)
1	6	0
2	6	11275

Post-dose observations lasted for 14 days.

b. Birds were housed in groups of 6 in floor pens measuring 200x133 cm (78.74 x 52.36 inches). The ambient temperature was maintained at 15°C and the ventilation fans were adjusted to allow 15 air changes per hour.

c. Feed and water was offered ad libitum at all times.

d. Preliminary range finding indicated that the toxicity of the compound was low and it would not be possible to obtain sufficient mortalities to calculate the LD_{50} value. The researcher decided to confirm these results by dosing six birds with the maximum practicable does volume (15 ml) using the material as supplied (92% w/v active ingredient). Six birds were dosed with 15 ml of corn oil only to act as the controls.

The compound was administered by oral gavage, one operator holding the bird's beak open and the other administering the test compound using a CH 14 Nelaton rubber catheter and disposable syringe. Care was taken to ensure that the bird had ingested all the test material before being returned to its pen.

e. Food consumption was not recorded because of spillage.

3. Additional Test Results

a. No mortalities were observed in either the test or control groups.

b. No signs of intoxication or unusual behavior were observed.

c. Bodyweight depression was recorded. See table below:

GROUP MEAN BODYWEIGHT AND BODYWEIGHT CHANGES (G/BIRD)

Group	No. of birds	Dose (mg PP557 /kg)	Total mortalities	Day of Study 0	7	14	Bodyweight changes 0-7	7-14	0-14
1	6	0	0	1212	1215	1217	+3	+2	+5
2	6	11,275	0	1224	1210	1207	-14	-3	-17

B. Validation Category/Rationale

This study is scientifically invalid. A sample size of six treated birds and six control birds provides for one dose-response point on a dosage mortality line. Such methodology is not scientifically valid. Further, the body weight depression observed at the one level tested indicates that dosing at lower levels is in order to determine if body weight depression and/or food consumption depression occur at lower dosage levels.

Note also that other vital information is lacking; sex of birds used, age of birds, photoperiod, food consumption data, etc.