

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD

1/2/85

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1. CHEMICAL: α -butyl- α -(4-chlorophenyl)-1H-1,2,4-triazole-1-propanenitrile

SHAUGHNESSY NUMBER 128857

2. TEST MATERIAL:

RH-53,866 (Technical), 84.5% a.i.

3. STUDY IDENTIFICATION:

Fletcher, D.W., 1984. Eight-day dietary LC₅₀ study with RH-53,866 technical in bobwhite quail. Bio-Life Associates Ltd. Neillsville, Wisconsin. Report #84RC16 EPA Eup Nos. 707-EUP-RNL and 707-EUP-RNU, Acc. No. 072894

4. STUDY TYPE:

Avian dietary LC₅₀

5. REVIEWED BY:

Robert W. Pilsucki
Microbiologist
Ecological Effects Branch/HED

Robert W. Pilsucki

1/2/85

6. APPROVED BY:

for Raymond Matheny
Head, Review Section 1

Dennis M. Lane

7. REPORTED CONCLUSIONS:

The dietary LC₅₀ in bobwhite quail was > 5000 ppm.

8. REVIEWER S CONCLUSIONS:

This study is scientifically sound and with an LC₅₀ of > 5000 ppm RH-3866 is slightly toxic to bobwhite quail. This study fulfills the requirement for an avian dietary LC₅₀.

Sam

9. MATERIALS AND METHODS:

Species: Bobwhite quail

Age of birds: 14 days

Source and rearing history:

Oak Ridge Farms
Gravette, Arkansas

The birds were hatched from eggs at Bio-Life Associates laboratory. They were then quarantined for 13 days and acclimatized.

Selection of test birds:

Birds were "arbitrarily" selected and assigned to test groups (no reference was made as to randomization procedure). Groups were not balanced for sex.

Housing conditions:

Temperature: 91-104°F (32.7-40°C)
Humidity: 24-30%
Lighting: Constant illumination
Pen size: 45.7 cm x 61 cm x 45.7 cm wire pens

Weight gain and food consumption:

See attached tables.

Diet:

During the test, the birds were fed Purina Gamebird StarTeena (ingredient listing not supplied). Test material residue measurements were made after mixing and are as follows:

<u>Calculated Dose (ppm)</u>	<u>Actual Level Found (ppm)</u>	<u>Actual Calculated</u>
312	246	0.79
625	641	1.03
1250	1150	0.92
2500	3000	1.20
5000	4530	0.91

The diet was mixed 68 hours prior to testing.

Concurrent controls and diluent:

Concurrent vehicle control groups, each containing 10 birds, were run with the test doses. Diluent was mixed with the feed to yield a concentration equal to that in the test feed. Controls showed no mortality. The diluent used was acetone.

Number of birds/concentration: 10

Test duration:

5 days on treatment
3 days observation

Concentrations - mortalities:

Conc. (ppm)	Number Exposed	Number Dead	Percent Mortality
4530	10	1	10
3000	10	2	20
1150	10	0	0
641	10	0	0
246	10	0	0

Toxic Symptoms:

Anorexia and lethargy were observed in birds in the 2500 and 5000 ppm groups, starting at day 2 and ending at day 4. After day 4, all birds appeared normal.

Necropsy:

All dead birds and 19 surviving birds (10 control and 9 from the 5000 ppm group) showed no pathological findings.

10. STATISTICAL ANALYSIS:

No statistical analysis was performed.

11. DISCUSSION: There was no Discussion section in this study.

12. REVIEWER S EVALUATION:

Test procedures: The test procedures generally follow EPA s guidelines for an avian dietary LC50 using bobwhite quail.

Statistical analysis: Because no dose level produced 50% or greater mortality, a statistically meaningful LC50 could not be obtained.

Discussion: The conclusions reached generally are in agreement with those attained by EEB. The results show that RH-3866 is slightly toxic to bobwhite quail under the conditions tested.

13. Conclusions:

Category: Core

Rationale: This study follows EPA's guidelines for an avian dietary LC50.

Repairability: N/A

PILSUCKT RH 3866 AVIAN DIETARY LC50

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
4530	10	1	10	1.07422
3000	10	2	20	5.46875
1150	10	0	0	.0976563
641	10	0	0	.0976563
246	10	0	0	.0976563

THE BINOMIAL TEST SHOWS THAT 1150 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 0

THE MOVING AVERAGE METHOD CANNOT BE USED WITH THIS DATA SET BECAUSE NO SPAN WHICH PRODUCES MOVING AVERAGE ANGLES THAT BRACKET 45 DEGREES ALSO USES TWO PERCENT DEAD BETWEEN 0 AND 100 PERCENT.

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
13	1.75963	1	.623123

SLOPE = 2.06318
95 PERCENT CONFIDENCE LIMITS = -.673652 AND 4.80002

LC50 = 12567
95 PERCENT CONFIDENCE LIMITS = 4926.6 AND +INFINITY

LC10 = 3045.63
95 PERCENT CONFIDENCE LIMITS = 0 AND +INFINITY

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