

DATA EVALUATION RECORD

1. **CHEMICAL:** Pyrazon
Shaughnessey No. 069601
2. **TEST MATERIAL:** Pyrazon technical, 95% active ingredient
3. **STUDY TYPE:** Avian Dietary LC50
Species used: Mallard duck (Anas platyrhynchos)
4. **STUDY ID:** Munk, R. 1990. Avian dietary LC-50 test of Reg. No. 13 033 - 95% (pyrazon) in the mallard duck (Anas platyrhynchos L.). conducted by BASF Aktiengesellschaft, Ludwigshafen/Rhein, Federal Republic of Germany for BASF Corporation, Research Triangle Park, NC. EPA MIRD No. 416098-04.
5. **REVIEWED BY:**

Clyde R. Houseknecht
Wildlife Biologist
EEB/EFED

Signature: *Clyde Houseknecht*
Date: 11/5/90
6. **APPROVED BY:**

Henry T. Craven, Head
Review Section #4
EEB/EFED

Signature: *Henry T. Craven*
Date: 11/6/90
7. **CONCLUSIONS:** This study is scientifically sound and fullfills the guideline requirements. The LC50 of pyrazon to the mallard duck is 4332 ppm (95% c.l. 2871 and 12778) based on mean measured concentrations. Thus, pyrazon can be described as being slightly toxic to this species. There was a slight reduction in feed uptake in the 2500 ppm test group and a significant reduction in the 5000 ppm group. There was a statistically significant reduction in body weights between the highest treatment group and the controls.
8. **RECOMMENDATIONS:** N/A

9. **BACKGROUND:** N/A
10. **DISCUSSION OF INDIVIDUAL TESTS:** N/A
11. **MATERIALS AND METHODS:**
- A. **Test Animals:** The mallard ducks used in this study were purchased from a commercial supplier in the Federal Republic of Germany. They were indistinguishable from wild birds. Chicks were 8 days old at the beginning of the study.
- B. **Test System:** At arrival at the testing laboratory, chicks were placed into an air conditioned room in one flock in a mesh wire cage. Temperature was maintained using ceramic radiant heaters. The photoperiod was 12 hours light and 12 hours dark. Three days prior to the test chicks were randomly allocated to the test groups and were put into test cages. Stainless steel cages measuring 1.30 x 0.65 x 1.3 m housed 10 birds each.
- Food and water were provided ad lib throughout the maintenance period and the test. Food consumption was measured for two days prior to the administration of the test substance and each day of the test. Body weights were determined on days 0, 5, and 8.
- C. **Dosage:** Nominal concentrations of test substance (mg/kg diet) were 0, 313, 625, 1250, 2500, and 5000. Mean measured concentrations were determined for the lowest, middle, and highest concentrations. These values were 305, 1247, and 5133, respectively.
- D. **Design:** Avian Dietary LC50 Study.
- E. **Statistics:** The statistical evaluation of the body weight data was performed by one-way analysis of variance followed by Dunnett's test. The LC50 value was calculated by probit analysis.
12. **REPORTED RESULTS:** The LC50 value was reported to be 4,260 mg/kg diet. There was a significant reduction in food consumption in the group receiving the highest concentration of test substance but no significant reduction in weight in any group.
13. **STUDY AUTHOR'S CONCLUSION/QUALITY ASSURANCE MEASURES:** This study does not meet the requirements for 40 CFR Part 160, Good Laboratory Practices Standards. This study was performed in accordance with OECD Principles of Good Laboratory Practice (Paris, 1981).
14. **REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:**
- A. **Test Procedures:** The procedures utilized in this study

were in compliance with the EPA's Standard Evaluation Procedure (SEP) for the Avian Dietary LC50 Study.

B. Statistical Analysis: The reviewer used EPA's toxinal program to calculate the LC50. Body weight results were analyzed by ANOVA followed by a one-tailed Dunnett's test.

C. Discussion/Results: The LC50 results were in general agreement with those reported by the author with differences due to the reviewer's use of mean measured concentrations rather than nominal concentrations. The reviewer found a significant difference in body weight between the highest treatment group and the controls.

D. Adequacy of the Study:

(1) Classification: Core

(2) Rationale: N/A

(3) Repairability: N/A

15. **COMPLETION OF ONE-LINER:** Yes, October 31, 1990

Shaughnessy No: _____ Chemical Name _____ Chemical Class _____ Page 1 of _____

Study/Species/Lab/ Access # _____ Chemical # & i _____ Results _____ Reviewer/ Date _____ Validation Status _____

14-Day Single Dose Oral LD50.
Species: _____ LD50 = mg/kg (95% C.L.) Contr. Mort.(%) = _____
Lab.: _____ Slope = # Animals/Level = _____ Age(Days) = _____
Acc. #: _____ 14-Day Dose Level mg/kg/(% Mortality) Sex = _____
Comments: _____

14-Day Single Dose Oral LD50.
Species: _____ LD50 = mg/kg (95% C.L.) Contr. Mort.(%) = _____
Lab.: _____ Slope = # Animals/Level = _____ Age(Days) = _____
Acc. #: _____ 14-Day Dose Level mg/kg/(% Mortality) Sex = _____
Comments: _____

8-Day Dietary LC50.
Species: MALLARD DUCK 95%
Lab.: BASF
Acc. #: 416098-04
LC50 = 4332 ppm (2871 - 1278) 95% C.L. Contr. Mort.(%) = 10
Slope = 2.84 # Animals/Level = 10 Age(Days) = 8 CR#
Sex = ♂ + ♀ 11/5/90 CORE
8-Day Dose Level ppm/(% Mortality)
305 (0), 625 (0), 1247 (10), 2500 (20), 5133 (60)
Comments: _____

8-Day Dietary LC50.
Species: _____ LC50 = ppm (95% C.L.) Contr. Mort.(%) = _____
Lab.: _____ Slope = # Animals/Level = _____ Age(Days) = _____
Acc. #: _____ 8-Day Dose Level ppm/(% Mortality) Sex = _____
Comments: _____

96-hour LC50.
Species: _____ LC50 = PP (95% C.L.) Contr. Mort.(%) = _____
Lab.: _____ Slope = # Animals/Level = _____ Sol. Contr. Mort.(%) = _____
Acc. #: _____ 96-Hour Dose Level pp/(% Mortality) Temperature = _____
Comments: _____

96-hour LC50.
Species: _____ LC50 = PP (95% C.L.) Con. Mor(%) = _____
Lab.: _____ Slope = # Animals/Level = _____ Sol. Con. Mort.(%) = _____
Acc. #: _____ 96-Hour Dose Level pp/(% Mortality) Temp. = _____
Comments: _____

48-hour Invertebrate,
Species: _____ LC50 = PP (95% C.L.) Con. Mort.(%) = _____
Lab.: _____ Slope = # Animals/Level = _____ Sol. Con. Mort.(%) = _____
Acc. #: _____ 96-Hour Dose Level pp/(% Mortality) Temp. = _____
Comments: _____

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
5133	10	6	60.00001	37.69531
2500	10	2	20	5.46875
1247	10	1	10	1.074219
625	10	0	0	9.765625E-02
305	10	0	0	9.765625E-02

THE BINOMIAL TEST SHOWS THAT 0 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 4318.382

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS
1	1.25215	4318.382	2112.376 +INFINITY

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
4	.4351921	1	.924059

SLOPE = 2.84402
 95 PERCENT CONFIDENCE LIMITS = .9678461 AND 4.720195

LC50 = 4332.377
 95 PERCENT CONFIDENCE LIMITS = 2871.21 AND 12778.14

LC10 = 1549.442
 95 PERCENT CONFIDENCE LIMITS = 405.7244 AND 2371.663

PAGES 9.6 THROUGH 9.14 HAVE BEEN REMOVED FROM THIS DOCUMENT. THOSE PAGES
CONSIST OF REGISTRANT-SUBMITTED DATA.