

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD

1. CHEMICAL: Acetochlor
2. FORMULATION: Mon-097 91.3% A.I.
3. CITATION: Static Acute Bio Assay Report # 24016, Acute Toxicity of CP 55097 (AB-79-077) to Rainbow trout (Salmo gairdneri) by Analytic Bio chemistry Laboratories, Inc. for Monsanto Company, July 20, 1979
4. REVIEWED BY: Russel Farringer, III
Wildlife Biologist
Ecological Effects Branch, HED
5. DATE REVIEWED: 1/26/80
6. TEST TYPE:
 - A. Test Species: Rainbow Trout
7. REPORTED RESULTS:

The 96-hour LC₅₀ was 0.45 mg/L (C.L. 95% 0.36 to 0.57 mg/L).
8. REVIEWER'S CONCLUSIONS: This study was scientifically sound and with a LC₅₀ of 0.45 mg/L is highly toxic to Rainbow trout. The study will not support registration, unless the actual statistical technique used to get the LC₅₀ is supplied by the chemical company.

Materials / Methods
Test Procedures

This test generally follows USEPA guideline requirements. There were 5 dose levels with 10 fish per level. The DO and Temperature were within acceptable ranges. All other criteria appear to have been met.

Statistical Analysis

The exact statistical technique used for analyzing the data was not stated in the paper.

Reviewer's Evaluation
Test Procedure

The test procedure generally complies with the recommended USEPA 1978 protocol.

Statistical Analysis

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CONC.          NUMBER          NUMBER          PERCENT          BINOMIAL
              EXPOSED          DEAD            DEAD            PROB.(PERCENT)
1              10              10              100              9.76563E-2
.56            10              9               90.              1.07422
.32            10              1               10.              1.07422
  
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THE BINOMIAL TEST SHOWS THAT .32 AND .56 CAN BE USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT CONFIDENCE LIMITS SINCE THE ACTUAL CONFIDENCE LEVEL ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS .42332

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-----RESULTS CALCULATED USING THE MOVING AVERAGE METHOD
SPAN          G          LC50          95 PERCENT CONFIDENCE LIMITS
2              .167754        .42332        .307527        .519495
  
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-----RESULTS CALCULATED USING THE PROBIT METHOD
ITERATIONS    G          H          GOODNESS OF FIT PROBABILITY
5              .3383        1          .983798
  
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SLOPE = 10.5524
 15 PERCENT CONFIDENCE LIMITS = 4.41474 AND 16.69

LC50 = .423297
 15 PERCENT CONFIDENCE LIMITS = .346086 AND .517272

C. Conclusion

Category: Invalid .

Rationale: Statistical technique used by the Lab to determine the LC₅₀ could not be determined.

Repairability: 1) To core if the registrant can provide the statistical technique the Lab used to report the LC₅₀, provided the technique is valid for this type of data.
2) EEBR would like an explanation by the Analytical Bio Chemistry Laboratories, Inc. as to why they chose the dose levels of 0.32, 0.56, 1.0, 1.8, 3.2 mg/L when their range finding test showed that, at 72 hours, all fish at 1.0 mg/L had died. It would appear that a logarithmic or arithmetic progression from 0.1 to 1.0 mg/L would have been more scientifically and statistically helpful.