CASE: GS0062
CONT-CAT: 01 GUIDELINES: 72-1

MRID: 147125


REVIEW RESULTS: VALID / INVALID / INCOMPLETE
GUIDELINE: SATISFIED / PARTIALLY SATISFIED / NOT SATISFIED
DIRECT RWV TIME = START DATE: END DATE:

REVIEWED BY: Otto Guttensohn
TITLE: Biologist
ORG: EEB
LOC/TEL: 557-3444
SIGNATURE: Otto Guttensohn DATE: 10/31/88

APPROVED BY: Henry T. Crow
TITLE: Supervising Biologist
ORG: EEB
LOC/TEL: 
SIGNATURE: Henry T. Crow DATE: 10/31/88
Data Evaluation Record

1. Chemical: Atrazine

2. Test Material: Atrazine tecnica-100% ai

3. Study Type: Freshwater Fish Actue Static Test
   Species Tested: Lepomis macrochiries


5. Reviewed By:
   Otto Gutenson
   Biologist
   Ecological Effects Branch
   Environmental Fate & Effects Division

   Signature: [Signature]
   Date: [10/26/88]

6. Approved By:
   Harry Cravén
   Supervisory Biologist
   Ecological Effects Branch
   Environmental Fate & Effects Division

   Signature: [Signature]
   Date: [ ]

7. Conclusions: This study is scientifically sound and meets the guideline requirements for the freshwater fish acute test. With a 96-hour LC50 value of 57ppm, atrazine is considered slightly toxic to bluegill. The NOEL was determined to be 10ppm.

8. Recommendations: N/A


10. Discussion of Individual Tests: N/A

11. Materials and Methods:

   A. Test Animals:

   The bluegill were obtained from a commercial fish hatchery in Connecticut and had a mean wet weight of 1.0g and mean length of 35mm. The fish were acclimated to test conditions over a 48-hour period.
B. Test System:

Static bioassay was conducted in 19.6 liter glass jars containing 15 liters of test solution at 21 ± 1.0°C. Test solutions were not aerated during the test. The pH concentration ranged from 7.2 to 6.9 and D.O. ranged from 8.8 mg/L to 3.7 mg/L.

C. Dosage:

96-hour acute static LC₅₀ test.

D. Design:

The nominal test concentrations were 10, 12, 18, 28, 32, 42, 65, 100, 140, 210, 320 ppm. There was a single introduction of the test compound 30 minutes prior to exposing test fish. Ten fish were randomly assigned to each test level, actone control and dilution water control.

E. Statistics:

Test concentrations and corresponding observed percentage mortality were converted to logs and probits, respectively, and these values were utilized in a least squares regression analysis. The LC₅₀'s were calculated from the regression equation.

12. Reported Results:

The LC₅₀ values were 185 ppm for 24 hours, 110 ppm for 48 hours and 57 ppm for 48 hours. The NOEL was 10 ppm. Fish generally became dark and lethargic, lost equilibrium and died. All fish displayed dark coloration at test concentrations equal to or greater than 12 ppm.

13. Study Author's Conclusions/Quality Assurance Measures:

No conclusion was made by the author and no quality assurance measures were reported.

14. Reviewer's Discussion and Interpretation of Study Results:

A. Test Procedure:

The test procedure generally followed guideline recommendations.
B. **Statistical Analysis:**

The reviewer agrees with the statistical methods used and results obtained.

C. **Discussion/Results:**

The 96-hour LC$_{50}$ value of atrazine is 57 ppm and is considered to be slightly toxic to bluegill. The NOEL was determined to be 10 ppm based on dark coloration of test fish.

D. **Adequacy of the Study:**

1) Classification: Core
2) Rationale: N/A
3) Repairability: N/A

**tension atrazine bluegill 10-26-88**

<table>
<thead>
<tr>
<th>CONC.</th>
<th>NUMBER EXPOSED</th>
<th>NUMBER DEAD</th>
<th>PERCENT DEAD</th>
<th>BINOMIAL PROB. (PERCENT)</th>
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<tr>
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<td>10</td>
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<tr>
<td>210</td>
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<td>9</td>
<td>90</td>
<td>1.074219</td>
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<tr>
<td>140</td>
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</table>

The binomial test shows that 28 and 210 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 31.23069.

Results calculated using the moving average method:

<table>
<thead>
<tr>
<th>SPAN</th>
<th>LC50</th>
<th>95 PERCENT CONFIDENCE LIMITS</th>
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<tbody>
<tr>
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<td>54.51</td>
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Results calculated using the probit method:

<table>
<thead>
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<th>ITERATIONS</th>
<th>GOODNESS OF FIT PROBABILITY</th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>9.359077E-02, 1, 0.1432326</td>
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</table>

Slope = 2.705471
95 percent confidence limits = 1.877797 and 3.533145

LC50 = 51.52053
95 percent confidence limits = 39.62071 and 67.90363

LC10 = 17.4808
95 percent confidence limits = 10.18423 and 24.32819