# DATA EVALUATION RECORD
## § 72-1 - ACUTE $LC_{50}$ TEST WITH A WARMWATER FISH

1. **CHEMICAL:** Metolachlor PC Code No.: 108801

2. **TEST MATERIAL:** CGA-51202 Purity: Not reported

3. **CITATION:** Author: A. Vial
   Title: Report on the Acute Toxicity Test of CGA-51202 to Common Carp (*Cyprinus carpio*)
   Study Completion Date: August 12, 1991
   Laboratory: Ciba-Geigy Limited, Crop Protection Division, Basle, Switzerland
   Sponsor: Novartis Crop Protection, Inc., Greensboro, NC
   Laboratory Report ID: 918151
   MRID No.: 449295-02
   DP Barcode: D260006

4. **REVIEWED BY:** Karl Bullock, M.S., Environmental Scientist,
   Golder Associates Inc.
   **Signature:** **Date:** 11/99

   **APPROVED BY:** Pim Kosalwat, Ph.D., Senior Scientist,
   Golder Associates, Inc.
   **Signature:** **Date:**

5. **APPROVED BY:** Brian Montague, Fisheries Biologist
   Environmental Fate and Effects Division, OPP
   **Signature:** **Date:** March 2000

6. **STUDY PARAMETERS: Age or Size of Test Organism:** 32-43 mm
   **Definitive Test Duration:** 96 hours
   **Study Method:** Static
   **Type of Concentrations:** Mean measured

7. **CONCLUSIONS:** This study is scientifically sound but does not fulfill Agency guideline requirements. The 96-hour $LC_{50}$ for carp exposed to CGA-51202 was determined to be >100 ppm nominal (>93.1 ppm mean measured), which classifies this compound as practically non-toxic to the carp.
   **Results Synopsis**
   $LC_{50}$: >100 ppm nominal (>93.1 mean measured) 95% C.I.: N/A
   NOEC: 100 ppm nominal


8. **ADEQUACY OF THE STUDY:** **A. Classification:** Invalid

B. **Rationale:** The percent purity of the test substance was not reported. Study was conducted with de-chlorinated tapwater. See deviations below.

C. **Repairability:** No.

9. **GUIDELINE DEVIATIONS:**

1.The percent purity of the test material was not reported.
2.The test was conducted with a species other than the recommended species.
3. Dilution water was dechlorinated tap water.
4. Pretest mortality was not reported.
5. Test solutions were aerated.

10. **SUBMISSION PURPOSE:** To support reregistration of metolachlor.

11. **MATERIALS AND METHODS:**

**A. Test Organisms**

| Guideline Criteria | Reported Information |
|---|---|
| **Species**<br>Preferred species is the bluegill sunfish (*Lepomis macrochirus*) | Carp, *Cyprinus carpio* |
| **Mean Weight**<br>0.5-5 g | Mean: 0.74 g<br>Range: 0.41-0.96 g |
| **Mean Standard Length**<br>Longest not > 2x shortest | Mean: 39 mm<br>Range: 32-43 mm |
| **Supplier** | P. Hohler / CH-4314 Zeiningen |
| **All fish from same source?** | Yes |
| **All fish from the same year class?** | Not reported |

**B. Source/Acclimation**

| Guideline Criteria | Reported Information |
|---|---|
| **Acclimation Period**<br>Minimum 14 days | 24 days |

| Guideline Criteria | Reported Information |
|---|---|
| **Wild caught organisms were quarantined for 7 days?** | N/A |
| **Were there signs of disease or injury?** | Not reported |
| **Feeding** No feeding during the study | Last fed 24 hours prior to testing |
| **Pretest Mortality**<br>< 3% mortality 48 hours prior to testing | Pretest mortality not reported |

C. **Test System**

| Guideline Criteria | Reported Information |
|---|---|
| **Source of dilution water**<br>Soft reconstituted water or water from a natural source, **not** dechlorinated tap water | Carbon filtered dechlorinated tap water |
| **Does water support test animals without observable signs of stress?** | Yes |
| **Water Temperature** 17°C or 22°C | 23 °C |
| **pH** Prefer 7.2 to 7.6 | 7.6 - 8.4 |
| **Dissolved Oxygen**<br>Static: ≥ 60% during 1st 48 hrs and ≥ 40% during 2nd 48 hrs, flow-through: ≥ 60% | ≥87% of saturation during the test |
| **Total Hardness**<br>Prefer 40 to 200 mg/L as $CaCO_3$ | 164 mg/L as $CaCO_3$ |
| **Test Aquaria**<br>1. Material: Glass or stainless steel<br>2. Size: Volume of 18.9 L (5 gal) or<br>30 x 60 x 30 cm<br>3. Fill volume: 15-30 L of solution | Glass<br><br>20-L<br>15 L |
| **Type of Dilution System**<br>Must provide reproducible supply of toxicant | N/A |
| **Flow Rate** | N/A |

| Guideline Criteria | Reported Information |
|---|---|
| **Biomass Loading Rate**<br>Static: ≤ 0.8 g/L at ≤ 17°C, ≤ 0.5 g/L at > 17°C; flow-through: ≤ 1 g/L/day | 0.50 g/L |
| **Photoperiod**<br>16 hours light, 8 hours dark | 16 h light, 8 h dark |
| **Solvents**<br>Not to exceed 0.5 mL/L for static tests or 0.1 mL/L for flow-through tests | Solvent: none<br>Maximum conc.: N/A |

**D. Test Design**

| Guideline Criteria | Reported Information |
|---|---|
| **Range Finding Test**<br>If $LC_{50}$ >100 mg/L with 30 fish, then no definitive test is required. | Pretests were conducted, however, the results were not reported. |
| **Nominal Concentrations of Definitive Test**<br>Control & 5 treatment levels; dosage should be 60% of the next highest concentration; concentrations should be in a geometric series | Control, 10, 18, 32, 58, and 100 mg/L |
| **Number of Test Organisms**<br>Minimum 10/level, may be divided among containers | 10 fish per treatment level or control |
| **Test organisms randomly or impartially assigned to test vessels?** | Yes |
| **Biological observations made every 24 hours?** | Yes |

| Guideline Criteria | Reported Information |
|---|---|
| **Water Parameter Measurements**<br>1. Temperature<br>Measured constantly or, if water baths are used, every 6 hrs, may not vary > 1°C<br>2. DO and pH<br>Measured at beginning of test and ever 48 h in the high, medium, and low doses and in the control | Temperature, DO, and pH measured daily in each control and treatment replicate |
| **Chemical Analysis**<br>Needed if solutions were aerated, if chemical was volatile, insoluble, or known to absorb, if precipitate formed, if containers were not steel or glass, or if flow-through system was used | Yes, solutions collected at 0 and 96 hours were analyzed by HPLC |

## 12. REPORTED RESULTS:

### A. General Results

| Guideline Criteria | Reported Information |
|---|---|
| **Quality assurance and GLP compliance statements were included in the report?** | Yes, but compliance was with OECD and Swiss GLP. A QA statement was also included in the report. |
| **Recovery of Chemical**<br>**1.** Percent of nominal<br>**2.** Limit of detection<br>**3.** Method validation | 1. 85 - 93%<br>2. 1 mg/L<br>3. Not reported |
| **Control Mortality**<br>Not more than 10% control organisms may die or show abnormal behavior. | 0% control mortality |

| Guideline Criteria | Reported Information |
|---|---|
| **Raw data included?** | Yes |
| **Signs of toxicity (if any) were described?** | No signs of test material toxicity were reported |

Analytical Results

| Toxicant Concentration (mg/L) | | | | |
|---|---|---|---|---|
| Nominal | Hour of Study | | Mean Measured (SD) | Percent of Nominal |
| | 0 | 96 | | |
| Control | <1 | <1 | - | - |
| 10 | 8.50 | 8.80 | 8.70 (0.21) | 87 |
| 18 | 16.70 | 16.60 | 16.70 (0.07) | 93 |
| 32 | 27.20 | 27.20 | 27.20 (0.0) | 85 |
| 58 | 54.50 | 52.30 | 53.40 (1.56) | 92 |
| 100 | 92.50 | 93.70 | 93.10 (0.85) | 93 |

Mortality

| Concentration (ppm) | | Number of Fish | Cumulative Number Dead | | | |
|---|---|---|---|---|---|---|
| | | | Hour of Study | | | |
| Nominal | Mean Measured | | 24 | 48 | 72 | 96 |
| Control | - | 10 | 0 | 0 | 0 | 0 |
| 10 | 8.7 | 10 | 0 | 0 | 0 | 0 |

| Concentration (ppm) | | Number of Fish | Cumulative Number Dead | | | |
|---|---|---|---|---|---|---|
| | | | Hour of Study | | | |
| Nominal | Mean Measured | | 24 | 48 | 72 | 96 |
| 18 | 16.7 | 10 | 0 | 0 | 0 | 0 |
| 32 | 27.2 | 10 | 0 | 0 | 0 | 0 |
| 58 | 53.4 | 10 | 0 | 0 | 0 | 0 |
| 100 | 93.1 | 10 | 0 | 0 | 0 | 0 |

Other Significant Results: No signs of test material toxicity were reported.

**B. Statistical Results**

Statistical method: Visual observation using nominal concentrations

96-hr $LC_{50}$: >100 ppm 95% C.I.: N/A

Probit Slope: N/A NOEC: 100 ppm

**13. VERIFICATION OF STATISTICAL RESULTS:**

| Parameter | Result |
|---|---|
| Binomial Test $LC_{50}$ (C.I.) | N/A |
| Moving Average Angle $LC_{50}$ (95% C.I.) | N/A |
| Probit $LC_{50}$ (95% C.I.) | N/A |
| Probit Slope | N/A |
| NOEC | 100 ppm (93.1 ppm mean measured concentration) |

**14. REVIEWER'S COMMENTS:** This study is scientifically sound but does not fulfill the

guideline requirements for an acute toxicity test using a freshwater fish. The percent purity of the test material was not reported. Aeration of test dilution water was employed during study. De-chlorinated tap water was employed as dilution water. The 96-hour $LC_{50}$ for carp was determined to be >100 ppm (>93.1 ppm mean measured concentration), which classifies CGA-51202 as practically non-toxic to the carp. The NOEC was determined to be 100 ppm (93.1 ppm mean measured concentration).

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