1-30-84

DATA EVALUATION RECORD

1. Chemical: EL-107

2. Formulation 92.4% active ingredient

3. Citation: Lake, S.G., P.C. Francis and D.W. Grothe. December 1982. The toxicity of EL-107 (Compound 121607) to Algae in a static test system. Study J00682. Prepared by Lilly Research Laboratories. Submitted to Elanco Products. Indianapolis, Ind. EPA Accession No. 250793.

4. Reviewed by: Elizabeth E. Zucker
Wildlife Biologist
EEB/HED

5. Date Reviewed: January 30, 1984

6. Test Type: Toxicity to algae

A. Test Species: Selenastrum capricornutum

7. Reported Results:

The no-observed effect level of EL-107 to Selenastrum capricornutum was greater than 1.4 mg/l

8. Reviewer's Conclusions:

The study is scientificallly sound, but is not of a type normally required for registration.

Materials/Methods

Test Procedures

The unicellular green algae was obtained from stock cultures at the laboratory. Cells in the logarithmic phase of growth (7 to 10 days old) were utilized. Other test specifics include:

Test vessels: 500 ml glass Erlenmeyer flasks containing 100 ml of solution.
Test levels: 0; 0.125; 0.25; 0.50; 1.0; 2.0; 10.0 and 100 mg/l. (3 flasks per level)
Preparation of algal inoculum: to separate stock culture nutrient media from algal cells, 15 mls of stock culture were centrifuged, supernatant discarded, and cells resuspended in sterilized water.
Cell population density was determined on a hemocytometer
0.25 mls of inolculum was added to each flask for a density of 10,000 cells/ml.
Flasks were mildly shaken to prevent clumping.
Reproduction was determined by enumuating densites at 4, 5, 7, 10 and 14 day post-treatment.
To further assess effects, subsamples of solution were cultured and densities determined after 8 days.
Temperature and pH were determind on day 0 and 14.
Test solutions were analysed for residues of EL-107 on days 0, 4 and at the study's termination
Diluent characeristics- Hardness ($CaCO_3$)- 34.2 ppm; Alkalinity ($CaCO_3$)-18ppm

Statistical Analysis

Comparisons between treatment and control responses were made using Dunnett's t-test at an alpha level of 0.05.

Results/Discussion

On Day 5, the mean population densities for the control and 10 mg/l were significantly different. By Day 7 the treatment density had returned to control levels. At day 14, reproduction at all treatments was at least 93% of control value.

Biomass of treatment groups was not significantly different from control biomass. Subsamples after 8 days, were not affected and grew to normal densities when placed in untreated nutrient medium.

Assayed samples of the test solution show that the toxicant was not soluble in diluent, thus algae was exposed only to a maximum of 1.4 mg/l EL-107.

Temperature averaged 24 $\pm$ 0 C. pH ranged between 7.9 and 8.6.

Reviewer's Evaluation

A. Test Procedures

This study is not of a type normally required under current guidelines, however is appears to have been performed under scientifically sound conditions.

B. Statistical Analysis

The reviewer's results are accepted based on visual examination of data.

C. Review/Discussion

The chemical analyses of the test solution showed that algae was exposed to concentrations of the toxicant significantly less than nominal concentrations. This study can only be used to support registrations of EL-107 where expected aquatic environmental residues approach 1 ppm.

D. Conclusions

1. Category: Supplemental

2. Rationale: This study is not of a type normally required under current guidelines. Also, the results will only support registrations where aquatic environmental residues approach 1 ppm.

3. Repairability: None