

4-6-98

DATA EVALUATION RECORD
ALGAE OR DIATOM EC₅₀ TEST
GUIDELINE 122-2 OR 123-2 (TIER I OR II)

1. CHEMICAL: SAN 836H (Diflufenzopyr) PC Code No.:005107

2. TEST MATERIAL: SAN 836H Purity:99.47%

3. Citation

Author: Hoberg, James R

Title: SAN836H-Toxicity to the freshwater Green Alga, *Selenastrum capricornutum*

Study Completion Date: February 6, 1995

Laboratory: Springborn Laboratories, Inc.

Sponsor: Sandoz Agro, Inc.

Laboratory Report ID: 95-4-5787

MRID No.: 443074-25

DP Barcode:D238406

4. REVIEWED BY: Fred Jenkins, Aquatic Biologist, ERBII, EFED

Signature:

Fred Jenkins

Date:

4/6/98

5. APPROVED BY: Mike Davy, Agronomist, ERBII, EFED

Signature:

Michael Davy

Date:

4-6-98

6. STUDY PARAMETERS

Scientific Name of Test Organism: *Selenastrum capricornutum*

Definitive Test Duration: 5 days

Type of Concentrations: Mean measured

7. CONCLUSIONS:

Results Synopsis

EC₅₀: 0.1 ppm A.E.

NOEL: 0.0078 ppm A.E.

95% C.I.: 0.1-7.8 ppm A.E.

Slope: N/A

8. ADEQUACY OF THE STUDY

A. Classification: Core

B. Rationale: The study meets guidelines.

C. Repairability: N/A

9. **GUIDELINE DEVIATIONS**

The light intensity reported in the study (3.2-5.4 K Lux) falls outside the recommended light intensity (2 K Lux) of The Hazard Evaluation Division Standard Evaluation Procedure for Non-Target Plants: Growth and Reproduction of Aquatic Plants-Tiers 1 and 2 (SEP).

10. **SUBMISSION PURPOSE:** Section 3 Registration.

11. **MATERIALS AND METHODS**

A. Test Organisms

Guideline Criteria	Reported Information
<u>Species</u> <i>Skeletonema costatum</i> <i>Anabaena flos-aquae</i> <i>Selenastrum capricornutum</i> <i>Navicula pelliculosa</i>	<i>Selenastrum capricornutum</i>
<u>Initial Number of Cells</u> 3,000 - 10,000 cells/ml	10000 cells/ml
<u>Nutrients</u> Standard formula, e.g. 20XAAP	AAP medium prepared with sterile, and deionized water.

B. Test System

Guideline Criteria	Reported Information
<u>Solvent</u>	N/A
<u>Temperature</u> Skeletonema: 20°C Others: 24-25°C	24±°C
<u>Light Intensity</u> Anabaena: 2.2 K lux (±15%) Others: 4.3 K lux (±15%)	3.2-5.4 K Lux
<u>Photoperiod</u> Skeletonema: 14 h light, 10 h dark or 16 h light, 8 h dark Others: Continuous	Continuous

Guideline Criteria	Reported Information
<u>pH</u> Skeletonema: approx. 8.0 Others: approx. 7.5	7.2 to 7.6 at test initiation. 8.3 to 9.6 at test termination

C. Test Design

Guideline Criteria	Reported Information
<u>Dose range</u> 2X or 3X progression	2X progression
<u>Doses</u> at least 5	Mean Measured (ppm A.E.): 0.0041, 0.0078, 0.018, 0.041, 0.066, 0.15, 0.31. Nominal (ppm A.E.): 0.0063, 0.013, 0.025, 0.05, 0.10, 0.20, 0.40.
<u>Controls</u> negative and/or solvent	Negative
<u>Replicates per dose</u> 3 or more (4 or more for Navicula)	3
<u>Duration of test</u> 120 hours	120 hours
Daily observations were made?	Yes
<u>Method of Observations</u>	Cellular counts
<u>Maximum Labeled Rate</u>	0.2 lb A.E./acre

12. REPORTED RESULTS

Guideline Criteria	Reported Information
Quality assurance and GLP compliance statements were included in the report?	Yes
Initial and 120 h cell densities were measured?	Yes

Guideline Criteria	Reported Information
Control cell count at 120 hr $\geq 2X$ initial count?	Yes
Initial chemical concentrations measured? (Optional)	Yes
Raw data included?	Yes

Dose Response

Mean Measured Dose ¹ (ppm A.E.)	Cell Density ($\times 10^4$ cells/ml)	% Inhibition	120-Hour pH
Control	120	N/A	9.6
0.0041	128	-6.2	9.6
0.0078	112	6.5	9.4
0.018	99	18	9.3
0.041	79	34	9.2
0.066	65	46	9.0
0.15	46	61	8.9
0.31	46	62	8.3

¹Nominal test concentration were as follows (ppm A.E.): 0.0063, 0.013, 0.025, 0.050, 0.10, 0.20, and 0.40. The mean measured concentrations ranged from 60% to 82% of the nominal concentrations.

Other Significant Results:Statistical Results

Statistical Method:

The Williams test was used to determine the NOEC. The EC₅₀ values and their 95% confidence limits were determined by linear regression of response vs. mean measured exposure concentration over the range of test concentration where a clear exposure-response relationship was observed.

EC₅₀: 0.1 ppm A.E.

95% C.I.: 0.05 and 0.22 ppm A.E.

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Slope: N/A

NOEC: 0.0078 ppm

13. Verification of Statistical Results

Statistical Method: Moving Average Method (For LC₅₀);
Williams Test (For NOEC)

EC₅₀: 0.1 ppm

95% C.I.: 7.8×10^{-2} -0.14 ppm A.E.

Slope: N/A

NOEC: 0.0078 ppm A.E.

14. REVIEWER'S COMMENTS:

The study was scientifically sound and meets all core the guideline requirements of the SEP. There was a deviation from the guidelines (see Guideline Deviations), but this deviation did not seem to significantly impair the results of the study.