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DATA EVALUATION REPORT

ECOLOGICAL EFFECTS BRANCH

EFED Document

2002031

1. Chemical: Tilt

2. Formulation: CGA-64250 (90.7% a.i.)

MRID # 00132939

3. Study ID: Data Accession No: 072209 ref: 20
Hollister, Terry. 1981. The Effect of CGA-64250 to the Marine Alga (Skeletonema costatum). An unpublished study prepared by EG&G Bionomics for Ciba-Geigy Corp.

4. Study Type: 11-day EC50 with Skeletonema costatum, marine algae

5. Review By: Daniel Rieder
Wildlife Biologist
Ecological Effects Branch

Date: 10/18/84
Review Time: 3 Hrs

6. Reported Results:

11-day EC_{50} = 21 ppb
95% Confidence Limits = 14-31 ppb
No Observed Effect Level = <18 ppb

7. Reviewers Conclusions:
This study is scientifically sound. It fulfills the guideline requirements for an aquatic plant toxicity EC50. The results show that Tilt is very highly toxic to marine algae.

8. Methods/materials

Test Material: Tilt
Percent active ingredient: 90.7%
Test Organism: Marine algae
Species: Skeletonema costatum
Source: BMRL culture
Age/Stage: 8 days old
Test Containers: glass
Size: 125 ml with 50 ml test medium
Test Medium: Marine Algal Assay Procedure Medium
Conc. per container: $1x10^4$
Replicates: 3
Test Conditions: static
Illumination: 2,000 lux
Temperature: 20° C
Photoperiod: ?
Solvent: acetone
Controls: untreated and solvent
Measured concentrations: yes at initiation of study
Reference: BMRL Testing Protocol for Static Phytotoxicity Tests with Freshwater Algae, February, 1981.

9. Results:

	Reported	Reviewer
11-day	EC_{50}=21 ppb*	21 ppb (moving average method)
95% Confidence Limits	=14-31 ppb	20-22 ppb " " "
No Observed Effect Level	=<18 ppb	

* measured test concentrations

CONCENTRATION ppb Nominal/Measured*	PERCENTAGE CHANGE AS COMPARED TO THE SOLVENT CONTROL: Increase (+) or decrease (-) in production of Chlorophyl a					Dry cell weight
	day 3	day 4	day 7	day 9	day 11	day 11
control	-2	-6	+2	+2	+1	-1
solvent control**	---	---	---	---	---	---
12 / 18	-32	-27	-2	-22	-15	-23
25 / 30	-64	-87	-66	-97	-98	-98
50 / 60	-60	-90	-83	-99	-100	-100
100 /116	-66	-90	-100	-100	-100	-100
200 /218	-66	-90	-100	-100	-100	-100

* at initiation of study
** acetone
[a]Significantly less ($P \leq 0.05$) than the solvent control

10. Statistical Analysis: Dry cell weight was subjected to ANOVA and Williams' method (Williams, 1971) to locate significant differences among treatment means. The 11-day EC50 and 95% C.L. were calculated using the Finney probit method (Finney, 1971).

11. Reviewer Evaluation

a. Methods/Procedure: The protocol is generally consistent with the guidelines in Subdivisioin J, October, 1982.

b. Statistics: Independent statistical analysis was performed and is presented above. It supports the reported results.

c. Discussion/Results: The study results show that Tilt is highly toxic to marine algae.

12. Conclusions

Category: core

REFERENCE

EG&G Bionomics Marine Research Laboratory. 1981. Static Phytotoxicity Test with Freshwater Algae. 6pp.

Finney, D. J. 1971. Probit Analysis. Cambridge University Press, London. 333pp.

Williams, D. A. 1971. A test for difference between treatment means when several dose levels are compared with a zero dose control. Biometrics 27, 103-117