Crayfish w/ TGAI

EFED Document

2002029

DATA EVALUATION REPORT

ECOLOGICAL EFFECTS BRANCH

1. Chemical: Tilt

   Shaughnessey Number: 122101

2. Formulation: 90.7%

MRID # 132935

3. Study ID: Data Accession No: 072209, Reference 16
   Elwood, David and Larisa Altshul. 1981. Acute Toxicity of CGA-64250 to Crayfish (Procambrus sp.). Prepared by EG&G Bionomics for Ciba-Geigy Corp.

4. Study Type: 96-hour LC50, Crayfish (Procambrus sp.)

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

   Date: 9/11/84
   Review Time: 3 Hrs

6. Results:

	Reported	Reviewer
96-hour LC_{50}	42 ppm*	49 ppm*
95% Confidence Limits	29-67 ppm*	35-88 ppm*
Slope		3.5
No Observed Effect Level	16 ppm*	16 ppm*

*measured concentrations of CGA-64250 100% a.i.

7. Reviewers Conclusions:
   This study is scientifically sound and provides useful supplemental information. However, it does not fulfill any guideline requirement because there is no requirement for a toxicity test on crayfish. The results show that Tilt is slightly toxic to crayfish.

8. Methods/materials

Test Material: Tilt, CGA-64250
Percent active ingredient: 90.7%
Test Organism: Crayfish
Species: Procambrus sp.
Size: length=19 mm (range 14-21 mm) weight=3 g (range 1.3-4.8 g)
Source: commercial supplier
Acclimation: held 9 weeks at test conditions
Number per concentration: 10
Test Containers: glass
Size: 20 liter
Replicates: 2
Organisms per container: 5
Aerated: yes
Test Conditions: "Methods for acute toxicity tests with fish, macroinvertebrates and amphibians" (USEPA, 1975)
Temperature: 22°C
Controls: untreated but no solvent control
Solvent: triethylene glycol
Way test was begun: crayfish added 30 minutes after test material
Test Solution: deioniaed well water

9. Results:

	Reported	Reviewer
96-hour LC_{50}=42 ppm*	:	
95% Confidence Limits=29-67 ppm*	:	
Slope=	:	
No Observed Effect Level=around 16 ppm*	:	

*measured concentration

CONCENTRATION PPM	MORTALITY PERCENT				CONDITIONS	
Nominal/Measured	24HRS	48HRS	72HRS	96HRS	DO%	pH (96HRS)
100 / 74	20	40	50	80	82-84	6.9-7.1
60 / 44	20	20	20	30	82-84	7.0-6.9
36 / 30	20	40	40	50	72-80	6.8-6.9
22 / 16	0	11*	11	11	73-85	6.8-7.0
control	0	0	0	10	76-89	6.9-7.0

*one crayfish escaped at this level so only 9

10. Statistical Analysis:
Reported: Probit analysis
Reviewer:

11. Reviewer Evaluation: This study does not fulfill any guideline requirement because there is no requirement for a crayfish study. It does provide useful supplemental information and shows that Tilt (CGA-64250) is slightly toxic to crayfish.

12. Conclusions:
Category: Supplemental
Rationale: The test species is not acceptable.
Repairability: Not repairable.

NOTE: BECAUSE THERE WAS CONTROL MORTALITY, AND NONE
OF THE LOWER CONCENTRATIONS PRODUCED ZERO MORTALITY,
THE DATA HAS BEEN SUBJECTED TO ABBOTT'S CORRECTION.

122101 DATA ACC NO: 072209 REF 16 : TILT CRAYFISH LC50

****

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
74	9	7	77.7778	8.98437
44	9	2	22.2222	8.98437
30	9	4	44.4444	50
16	9	0	0	.195312

THE BINOMIAL TEST SHOWS THAT 16 AND +INFINITY 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 57.0614

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
2	2.04946	57.0614	0	+INFINITY

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
4	.432779	1	.103671

SLOPE = 3.47227
95 PERCENT CONFIDENCE LIMITS = 1.18801 AND 5.75654

LC50 = 48.9764
95 PERCENT CONFIDENCE LIMITS = 35.2248 AND 88.6768

LC10 = 21.0976
95 PERCENT CONFIDENCE LIMITS = 5.25008 AND 30.539

****

3