



2002035

72-3 Spot
Acute
W/T.G.P.

DATA EVALUATION REPORT

ECOLOGICAL EFFECTS BRANCH

1. Chemical: TiltShaughnessy No: 1221012. Formulation: 3.6E (41.8%)3. Study ID: Ward, G. Scott. 1983. Acute Toxicity of Tilt 3.6E to Spot (Leiostomus xanthurus). Prepared EG&G Bionomics for Ciba-Geigy Corp. Data Acc. # 072209. Ref No. 5.4. Study Type: 96-hour acute with spot5. Review By: Daniel Rieder
Wildlife Biologist
EEB/HEDDaniel Rieder
Date: 11/17/84
Review Time 3 Hrs.6. Reported Conclusions:

The 96-hour LC₅₀ = 4.42 ppm measured a.i. This value is estimated visually as there was 50% mortality at 4.42 ppm, the highest level tested. No 95% C.L. can be determined. Based on final measurement values, the LC₅₀ = 3.9 ppm.

7. Reviewer's Conclusions:

This study is scientifically sound and fulfills guideline requirements for an estuarine fish LC₅₀. It shows Tilt to be moderately toxic to estuarine fish. The concentrations were measured and higher test concentrations would not have resulted in a lower LC₅₀.

MRID 00132924

8. Methods and Materials:

Twelve fish were tested per level in 5 concentrations (0.29, 0.68, 1.09, 2.52, 3.90 ppm measured a.i.). The fish were collected from Big Lagoon and held 29 days. Control fish were 24-39 mm std. length and 0.26 - 1.08 grams in weight; this was typical of all test fish. The test was conducted in 19-liter glass jars containing 15 liters of seawater (salinity 190/00 and temperature 21°-22° C). Three fish were tested per jar, 4 jars per test level. Loading was 0.12 g/liter. All test containers were aerated.

9. Results:

<u>Measured</u> <u>Conc. 96 hrs</u> <u>ppm</u>	<u>No.</u> <u>Tested</u>	<u>Mortality</u>
control	12	0
solvent control	12	0
0.29	12	0
0.68	12	0
1.09	12	0
2.52	12	0
3.90	12	6

Visually estimated LC₅₀ = 3.9 ppm 100% a.i.

10. Reviewer's Evaluation:

There were several deviations from guideline protocol.

1. Test material was formulation 3.6E (41.8%).
This is negated by the fact that concentrations were measured.

2. Containers were aerated. Again measured concentrations negate this problem.

3. Test levels were not high enough to result in 100% mortality. However, even if one level higher resulted in 100% mortality it would not result in a lower LC₅₀ than 3.9 ppm.

11. Conclusions:

Category: Core

122101 TILT CGA-64250 SPOT LC50 072209 REFERENCE 5

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
3.9	12	6	50	61.2793
2.52	12	0	0	.0244141
1.09	12	0	0	.0244141
.68	12	0	0	.0244141
.29	12	0	0	.0244141

THE BINOMIAL TEST SHOWS THAT 2.52 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 3.9

WHEN THERE ARE LESS THAN TWO CONCENTRATIONS AT WHICH THE PERCENT DEAD IS BETWEEN 0 AND 100, NEITHER THE MOVING AVERAGE NOR THE PROBIT METHOD CAN GIVE ANY STATISTICALLY SOUND RESULTS.
