DATA EVALUATION RECORD

1. Chemical: HOE-33171 OH EC036 (emulsifiable concentrate 126)

2. Formulation: 12.5%

3. Citation: Fischer, R. (1982). The Effect of HOE-33171 OH EC036 on Lepomis gibbosus (pumpkinseed sunfish) in a Static Test. Oekologisches Laboratorium, Pflanzenschutz Forschung Biologie. Frankfurt Hoechst, Federal Republic of Germany. Ref. OEK82/022E. Acc. # 071796.

4. Reviewed by: Carol M. Natella
   Wildlife Biologist
   EEB/HED

5. Data Reviewed: October 13, 1983

6. Test Type: Fish acute 96-hour LC_{50} (pumpkinseed sunfish)

7. Reported Results: LC_{50} = 3.34 ppm (95% C.L. 3.08-3.71)

8. Reviewer's Conclusions: This study is scientifically sound and indicates that HOE-33171 emulsifiable concentrate (12.5%) is moderately toxic to pumpkinseed sunfish. The study would fulfill a requirement for a warm water fish acute LC_{50} performed on this product.

MATERIALS/METHODS

Test Procedures

Test Animals: Pumpkinseed fish (Lepomis gibbosus), obtained from the fish breeding company Tagis Aquarium, Buchschlag, Federal Republic of Germany. Fish were approximately nine months old, had a mean length of 5.61 cm and a mean weight of 3.16 g.

Test Water Quality: Filtered, de-ionized water was reconstituted according to EPA guidelines. The water had a pH of 7.90, a total hardness of 43 mg/l as $CaCo_3$, a total alkalinity of 32 mg/l as $CaCo_3$ and a conductivity of 156 umhos/cm. During testing, fish were maintained at 22°C.

Test Containers: 300 l stainless steel tanks, containing 250 l of water.

Exposure: 10 fish per tank; 10 fish per concentration. 15 concentrations and a control were used.

Date of testing: 4/19/82 - 4/23/82.

Statistical Analysis

LC_{50} values were determined by probit analysis.

Discussion/Results

Percent mortality at 5 of the 15 concentrations tested was as follows (after 96 hours):

ppm: 4.2 3.2, 2.8, 2.4, 2.1, control
%: 100, 20, 10, 10, 0, 0

The 96-hour observed no effect level was 1.55 ppm.

The following LC_{50} values were calculated:

24-hour LC_{50} = 4.63 ppm (95% C.L. 4.21-4.99)
48-hour LC_{50} = 3.2-4.2 ppm
72-and 96 hour LC_{50} = 3.34 ppm (95% C.L. 3.08-3.71)

Behavioral observations made during the test included: slow reaction, narcotic condition, paralysis of fins, and spreading of the fins in a 90° angle from the body. Surface swimming and equilibrium disturbance were also noted in a few fish.

REVIEWER'S EVALUATION

A. Test Procedure

The test procedure complies with U.S. EPA protocol.

B. Statistical Analysis

The LC_{50} value was verified with Stephan's computer program.

C. Conclusions:

1. Category: Core, should a study on this formulation be required.

2. Rationale: N/A

3. Repairability: N/A

NATELLA HOE-33171 PUMPKINSEED 2

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
4.2	10	10	100	.0976563
3.2	10	2	20	5.46875
2.8	10	1	10	1.07422
2.4	10	1	10	1.07422
2.1	10	0	0	.0976563

THE BINOMIAL TEST SHOWS THAT 2.8 AND 4.2 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 3.48595

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
2	.167754	3.43065	3.18713	3.74526

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
5	.235103	1	.122768

SLOPE = 14.1209
95 PERCENT CONFIDENCE LIMITS = 7.27403 AND 20.9677

LC50 = 3.35609
95 PERCENT CONFIDENCE LIMITS = 3.0839 AND 3.77976

LC10 = 2.72833
95 PERCENT CONFIDENCE LIMITS = 2.27487 AND 2.98157

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