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DATA EVALUATION RECORD

1. CHEMICAL: Fenarimol

2. FORMULATION: Technical - 97%

3. CITATION: Wilson, B. (1980) The Acute toxicity of compound 56722 to Bluegills in a 96-hour static test; received 10/19/81 under 1471-EUP-75; unpublished report prepared by EG & G Bionomics for Lilly Research Laboratories, Greenfield, Indiana (in Acc #070429)

4. REVIEWED BY: Stephen M. Hopkins
Plant Physiologist
EEB/HED

5. DATE REVIEWED: 12/2/81

6. TEST TYPE: Fish Acute LC_{50} - Bluegill Sunfish

7. REPORTED RESULTS:

The testing laboratory demonstrated that the 96hr LC_{50} of fenarimol to the bluegill sunfish is 1.8 ppm, with 95% confidence limits of 1.5-2.4 ppm. However, since the DO fell so low during the test, the precision of the LC_{50} determination is in doubt.

8. REVEIWER'S CONCLUSIONS:

This study is scientifically sound, but does not meet EPA requirements for a fish acute LC_{50} study since the dissolved oxygen concentration was extremely low during the second half of the test.

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Testing Laboratory Report

A. Test Procedure

The test procedure generally followed EPA proposed guidelines of July 10, 1978. Some specifics of note include:

Weight of fish	-	0.89 g ave
Number of fish	-	10 per test vessel
Test vessel size	-	20 liter glass vessels containing 15 liters each
Temperature	-	22 ± 1°C
Loading Factor	-	0.6 g/l
Dilution water	-	Soft reconstituted deionized water
Treatment levels	-	0.52, 0.86, 1.4, 2.4, and 4 ppm plus untreated and acetone controls
Chemical Analysis	-	Actual concentrations of toxicant were determined at the beginning and at the end of the test by GLC.
Test initiation	-	December 17, 1979

B. Statistical Analysis

Mortality was analyzed by the moving average angle method

C. Results

Concentration			Mortality
Nominal	Measured		at 96 hrs
	initial	Final	
4 ppm	3.9 ppm	3.8 ppm	100%
2.4	2.6	2.4	90
1.4	1.6	1.4	10
0.86	0.85	0.78	0
.52	0.48	0.45	0
Controls	-	-	0

The author calculated that the 96hr LC_{50} of the test material to the bluegill sunfish is 1.8 ppm, with 95% confidence limits of 1.5-2.4 ppm. The dissolved oxygen (DO) concentration fell to less than 10% of saturation (<0.8 mg/l) during the second half of the test. Fish were observed at the surface in all treatments except the untreated control.

Reviewer's Evaluation

A. Test Procedure

The procedure generally complied with the 1978 EPA guidelines.

B. Statistical Analysis

Mortality was analyzed by an the probit method, the results of which agreed with the findings of the testing laboratory.

C. Results/Discussion

The testing laboratory demonstrated that the 96hr LC_{50} of fenarimol to the bluegill sunfish is 1.8 ppm, with 95% confidence limits of 1.5-2.4 ppm. However, since the DO fell so low during the test, the precision of the LC_{50} determination is in doubt.

D. Conclusion

1. Category: Supplemental
2. Rationale: Low DO during test
3. Repairability: N/A

STEVE FENARIMOL BLUEGILL STATIC ACUTE LC50

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
4	10	10	100	0.09765625
2.4	10	9	90	1.074219
1.4	10	1	10	1.074219
0.86	10	0	0	0.09765625
0.52	10	0	0	0.09765625

THE BINOMIAL TEST SHOWS THAT 1.4 AND 2.4 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 1.83303

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
4	0.1055245	1.837272	1.467888	2.446826

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
6	0.3261933	1	0.9999641

SLOPE = 10.98439
95 PERCENT CONFIDENCE LIMITS = 4.710837 AND 17.25794

LC50 = 1.833142
95 PERCENT CONFIDENCE LIMITS = 1.51468 AND 2.220122

LC10 = 1.40468
95 PERCENT CONFIDENCE LIMITS = 0.9194304 AND 1.65958

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