DATA EVALUATION RECORD

1. Chemical: HOE 33171 OH AT 206

2. Formulation: 95.8%

3. Citation: Fischer, R. (1982). The Effect of HOE 33171 OH AT 206 on Lepomis macrochirus (Bluegill) in a Static Test. Oekologisches Laboratorium, Pflanzenschutz Forschung Biologie. Frankfurt Hoechst, Federal Republic of Germany. Ref. OEK82/047E. Acc. # 071796.

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

5. Date Reviewed: October 13, 1983

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

7. Reported Results: LC_{50} = 0.31 ppm (95% C.L. 0.26 - 0.35)

8. Reviewer's Conclusions:

This study is scientifically sound and indicates that HOE 33171 is highly toxic to bluegill. The study does fulfill the requirements for a warm water fish acute 96-hour LC_{50}.

MATERIALS/METHODS

Test Procedures

Test Animals: Bluegill (Lepomis macrochirus), obtained from Osage Catfisheries, Osage Beach, Mo. Fish were approximately 4 months old, had a mean length of 4.55 cm and a mean weight of 2.01 g.

Test Water Quality: Filtered, de-ionized water was reconstituted according to EPA guidelines. The water had a pH of 8.08, a total hardness of 47.7 mg/l as $CaCO_3$, a total alkalinity of 31.2 mg/l as $CaCo_3$ and a conductivity of 144 umhos/cm. During testing, fish were maintained at 22°C.

Test Containers: 300 l stainless steel tanks, containing 200 l of water.

Exposure: 10 fish per tank; 10 fish per concentration. 11 concentrations, a control and a solvent control (acetone) were used.

Date of testing: 8/23/1982 - 8/27/1982.

Statistical Analysis

LC_{50} values were determined by probit analysis.

Discussion/Results

Percent mortality at 6 of the 11 concentrations tested is as follows (after 96 hours):

ppm:	0.75,	0.56,	0,42,	0.32,	0.24,	0.18,	control,	solvent control
%:	100,	90,	90,	70,	20,	0,	0,	0

The 96-hour observed no effect level is 0.18 ppm.

The following LC_{50} values were calculated:

24 hours LC_{50} = 0.82 ppm (95% C.L. 0.72 - 0.95)
48 hours LC_{50} = 0.45 ppm (95% C.L. 0.40 - 0.50)
72 hours LC_{50} = 0.35 ppm (95% C.L. 0.31 - 0.40)
96 hours LC_{50} = 0.31 ppm (95% C.L. 0.26 - 0.35)

The most important behavioral observations made during the test include a narcotic condition and slow reactions. The following observations were also noted in a few fish: horizontal turns, surface swimming, head down swimming, and equilibrium disturbance.

REVIEWER'S EVALUATION

A. Test Procedure

The test prcedure complies with US EPA protocol.

B. Statistical Analysis

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

C. Conclusions

1. Category: Core

2. Rationale: N/A

3. Repairability: N/A

NATELLA HOE-33171 BLUEGILL

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
.75	10	10	100	.0976563
.56	10	9	90	1.07422
.42	10	9	90	1.07422
.32	10	7	70	17.1875
.24	10	2	20	5.46875
.18	10	0	0	.0976563

THE BINOMIAL TEST SHOWS THAT .18 AND .42 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 .285896

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
4	.183614	.300347	.248391	.353554

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
5	.185791	1	.441114

SLOPE = 7.38401
95 PERCENT CONFIDENCE LIMITS = 4.20124 AND 10.5668

LC50 = .304497
95 PERCENT CONFIDENCE LIMITS = .259853 AND .353543

LC10 = .204922
95 PERCENT CONFIDENCE LIMITS = .142464 AND .243772

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