

US EPA ARCHIVE DOCUMENT

1. Chemical: Baquacil
2. Formulation: 20% a.i.
3. Citation: Wheeler, A.G. (1980) Acute Toxicity of Vantacil^R IB to Bluegill (*Lepomis Macrochirus*), Mix No. 1857, EPA Registration No. 10182-Ro, Producer Name ICI Americas, Inc; Tested by EG&G Bionomics, Wareham, Mass. 02571.
4. Reviewed By: Curtis Laird
Fishery Biologist
EEB/HED
5. Date Reviewed: Aug. 26, 1980
6. Test Type: Fish acute 96-hour LC50
 - A. Test Species: Bluegill Sunfish
7. Reported Results: The 96-hour LC50 value was 0.62 ppm (0.46 to 0.83 ppm). There were no mortalities at any dose level after 24 hours.
8. Reviewer's Conclusion: This study indicates that Baquacil is highly toxic to bluegill sunfish. However this study does not fulfill the guidelines requirements.

In regard to the registrant's letter dated July 17, 1980, with a saturation of 21% dissolved oxygen does not meet the guideline requirements according to the

In regard to the registrant's letter dated August 29, 1980 concerning mortality after 24-hour. The Ecological Effects Branch realizes certain compounds reach their peak of toxicity around the 24-hour period, but there was no information in the submission indicating this process took place with Baquacil.

Material/Methods

Test Procedures

The test procedures generally complies with the EPA protocol of April 1975 (Stephan's); except for dissolved oxygen.

Statistical Analysis

Not given

Discussion Results

In addition to the 96-hour LC50 the author provided the following:

Organism	LC50 mg/L	95% Conf. Limit mg/L
Bluegill	24-h 0.62	(0.46-0.83)
	48-h 0.62	(0.46-0.83)
	96-h 0.62	(0.46-0.83)
	(No effect level 0.24 mg/L)	

Reviewer's Evaluation

Test Procedure

The test generally complies with the recommended US EPA 1975, except, for dissolved oxygen.

B. Statistical Analysis

The LC50 value was verified with Stephan's computer programs, binomial, moving average and probit method. See attached sheet.

3. Repairability: Not repairable

BIV-11

ic,old,s79lc50
READY:
9000 data 5
9001 data 1.6,.75,.56,.42,.24
9002 data 10,10,10,10,10
9003 data 10,6,3,1,0
run

80/08/27. 08.02.21.
BASIC PROGRAM S79LC50

	EXPOSED	DEAD	DEAD	CONC.	PROB.(PERCENT)	B	PEF
1.6	10	10		100	9.76563E-2		
.75	10	6		60.	37.6953		
.56	10	3		30.	17.1875		
.42	10	1		10.	1.07422		
.24	10	0		0	9.76563E-2		

THE BINOMIAL TEST SHOWS THAT .42 AND 1.6 CAN BE USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT CONFIDENCE LIMITS SINCE THE ACTUAL CONFIDENCE LEVEL ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS .681216

-----RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS
3	.274069	<u>.695051</u>	.556508 .941588

-----RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
6	.346393	1	.988398

SLOPE = 6.71453
95 PERCENT CONFIDENCE LIMITS = 2.75129 AND 10.6778

LC50 = .671384
95 PERCENT CONFIDENCE LIMITS = .563195 AND .891737

SRU 1.323 UNTS.
RUN COMPLETE.

The 24, 48 AND 96-hour LC50 VAL
Are the SAME