

US EPA ARCHIVE DOCUMENT

CASE GS0140

ALDICARB

PM

9/29/82

CHEM 098301

BRANCH EEB DISC TOPIC Special Order

FORMULATION 04 Granular

FICHE/MASTER ID 00080706 CONTENT CAT 01

Bailes, R.P.; Knott, W.; Wright, L. (1966) UC-21149: Safety Evaluation on Fish and Wildlife: (Bobwhite Quail and Rainbow Trout). (Unpublished study received Mar 2, 1967 under 7F0573; prepared by Woodard Research Corp., submitted by Union Carbide Corp., Charleston, W.Va.; CDL:090072-0)

SUBST. CLASS = 6.

OTHER SUBJECT DESCRIPTORS

PRIM:
SEC:

DIRECT RVN TIME (MM) START-DATE END DATE

REVIEWED BY: RICHARD R. STEVENS
TITLE: ECOLOGIST
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DATE: 4/4/84

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DATA EVALUATION RECORD

CHEMICAL: Aldicarb, 10 G

CITATION: Beliles, R.P.; Knott, W.; Wright, L. (1966) UC-21149: Safety Evaluation on Fish and Wildlife: (Bobwhite Quail and Rainbow Trout). (Unpublished study received March 2, 1967 under 7F0573; prepared by Woodard Research Corp., submitted by Union Carbide Corp., Charleston, W.Va.; CDL:090072-0) (00080706).

REVIEWED BY: Richard R. Stevens
Ecologist, EEB/HED
March 22, 1984

STUDY TYPE: Aquatic Acute 96-hour LC₅₀.
Rainbow trout.

RESULTS: The 96-hour LC₅₀ is 8.8 (6.2 - 12.5) ppm.

CONCLUSIONS: This study is sufficient to demonstrate that aldicarb is moderately toxic to rainbow trout (96-hour LC₅₀ = 8.8 ppm). It does not satisfy guideline requirements for acute testing for the technical of the active ingredient.

Materials/Methods

Test Procedures

"Rainbow trout (*Salmo gairdneri*) were received from the Virginia Trout Company, Inc., Monterey, Virginia, and held for a minimum acclimation period of 10 days. During the acclimation period, they were fed Purina Trout Chow daily. After the acclimation period, 130 fish were selected to give a population uniform in size and held for 48 hours without food in deionized water which was reconstituted by adding CaSO₄ (30 mg/l), MgSO₄ (30 mg/l), NaHCO₃ (48 mg/l), and KCl (3 mg/l)."

"Tests were conducted in glass jars containing 15 liters of reconstituted water which was oxygenated prior to the addition of the toxicants and fish. [Aldicarb] 10% and p-p' DDT (77.2%) were used, with the DDT being a positive control. The DDT was dissolved in acetone and the aliquots required to attain the desired concentrations were pipetted into the test jars. [Aldicarb] 10% was added directly to water in the test jars."

"Only five fish were placed in each jar (15 liters of water). The mean weight of the fish was about 3.5 gm (N=15). The water temperature remained at 52°F during the course of the experiment."

Statistical Procedures

Data were examined by the method of Litchfield and Wilcoxon (1979).

Reported Results

The fish observed frequently during the course of the experiment, and deaths during each 24-hour period were recorded as follows:

Compound	Concentrations ppm	Cumulative Mortality			
		24 hours	48 hours	72 hours	96 hours
Control	-	0/10	0/10	0/10	0/10
Control	(acetone - 5 ppt)	0/10	0/10	0/10	1/10
Aldicarb 10%	18.0	6/10	10/10	10/10	10/10
Aldicarb 10%	10.0	1/10	3/10	6/10	6/10
Aldicarb 10%	5.6	0/10	1/10	3/10	3/10
Aldicarb 10%	3.2	0/10	1/10	1/10	1/10
Aldicarb 10%	1.8	0/10	0/10	0/10	0/10
Aldicarb 10%	1.0	0/10	0/10	0/10	0/10
Aldicarb 10%	0.56	0/10	0/10	0/10	0/10
DDT (77.2%)	0.0069	10/10	10/10	10/10	10/10
DDT (77.2%)	0.0039	0/10	3/10	3/10	7/10
DDT (77.2%)	0.0022	0/10	2/10	2/10	6/10
DDT (77.2%)	0.0012	0/10	0/10	0/10	0/10

The 96-hour LC₅₀ reported for Aldicarb 10% and DDT were 8.8 (6.2 - 12.5) and 0.0015 (0.0010 - 0.0021) ppm respectively.

"Within six hours after the start of the exposure, signs of intoxication were seen at levels of 18.0 and 10.0 ppm aldicarb 10%. This was limited to loss of equilibrium. It was noted that the aldicarb granules settled to the bottom of each aquaria. DDT exposure at 0.0069, 0.0039, and 0.0022 ppm resulted in loss of equilibrium."

Reviewers Evaluation

Validation Category: Supplemental

Category Rationale: Study was not conducted with technical aldicarb. this study is acceptable for the formulated product. Statistical verification of the data confirmed authors LC₅₀ findings.

Category Repairability: N/A