

US EPA ARCHIVE DOCUMENT

9/8/82

CASE 890192

MALED

PM 110 12/22/81

CHEM 034401

Male: (1,2-dichloro-2,2-dichloroethyl) a

BRANCH EEN - DISC 4 TOPIC 5 51547

FORMULATION IS - SINGLE CONCENTRATE

FICHE/MASTER ID 00062358

CONTENT CAT 1

Kelley, F.J., Jr. (1971) A Field Test of the Effects of 4 and 8 oz/Acre Concentrations of Libron 14 Concentrate (aled) Applied from the Air on Estuarine Animals. (Unpublished study received Jan 21, 1971 under 239-1721; submitted by Chevron Chemical Co., Richmond, Calif.; OCL:01375-6)

SUBST. CLASS = 3.

OTHER SUBJECT DESCRIPTORS

SEC: EEN -4 - 5 51543

DIRECT RVM TIME =

(M)

START-DATE

END DATE

REVIEWED BY: Kyle Barbehead

TITLE: Wildlife biologist

ORG: HEDIEB3

LOC/TEL: cm2-111 / 557-1121

SIGNATURE:

Kyle Barbehead

DATE: 9/8/82

APPROVED BY:

TITLE:

ORG:

LOC/TEL:

SIGNATURE:

DATE:

See previous review by Balcom 4/27/78

BEST AVAILABLE COPY

Dibrom

Test Type:

Simulated field test

Test ID.# ES-BB

CITATION: Kelley, B. J. Jr., A Field Test of the Effects of 4 and 6 oz./Acre Concentrations of Dibrom 14 Concentrate (Naled) Applied from the Air on Estuarine Animals.

VALIDATION CATEGORY: Supplemental

RESULTS: "1. A field study has been made of the effects of aerial application of 4 and 6 oz/acre concentrations of Dibrom 14 on several aquatic estuarine animals.

2. Because the test represents a single repetition, a statistical comparison of results cannot be made.

3. By inspection of the data, it seems probable that 6 oz/acre concentrations can not be used without harm to non-target organisms." p.6

VALIDATION CATEGORY RATIONALE: The tests assess the effects of an exposure of only one hour and as such have somewhat limited general applicability. The experimenter applied no statistical tests to his data but believed the data showed significant differences between controls and test organisms. This reviewer applied a non-parametric test (Friedman's test for randomized blocks) and found no significant treatment effect ($X^2 = 3.105$, $X^2(0.05) = 5.99$)*. The experiment is not scientifically unsound, however, the data can only be said to suggest an acute toxic effect to test animals.

* This is the "worst case" situation; i.e., the killifish data, which had control mortality, were eliminated.

REPAIRABILITY: N/A

TEST DETAILS: Species	% Mortality		Control	No. animals at s (Aug)	star
	6oz.	4oz.			
White shrimp	15	21	0	20	<u>P. setiferus</u>
Hardback shrimp	15	4	0	25	<u>Palaeomonetes</u>
Killifish	5	5	25	20	<u>F. heteroditus</u>
Blue crabs	25	0	0	12	<u>C. sapidus</u>

The test animals were netted in estuarine habitat near Charleston, S Carolina. In the laboratory they were maintained in large, aerated fiberglass tanks and shallow "wading pools" (30‰ salinity at 23°C).

Simulated field test
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After acclimatization of 1-14 days the organisms were transported to test site and held in Church Creek in floating cages. Three sites were used with one receiving (aerially) dibrom at the rate of 6 oz/A, another at 4 oz/A and a control receiving no treatment. The animals were permitted a one hour field exposure then returned to laboratory culture tanks. Counts of dead organisms were made at 1, 3, 24, and 48 hours.

Among control animals only killifish suffered mortality during the test. Inspection of preserved specimens indicated the fish may have been suffering from malnutrition. The killifish data were, therefore, eliminated from the Friedman's test discussed previously.