US EPA ARCHIVE DOCUMENT

9/23/82

(TDR 38) DATA EVALUATION RECORD PAGE 1 OF

CASE GS0092 NALED PM 110 12/22/81

CHEM 034401 Naled (1,2-dibromo-2,2-dichloroethyl d

BRANCH EEB DISC 35 TOPIC 05250043

FORMULATION 00 = ACTIVE INGREDIENT

FICHE/MASTER ID 05000819 CONTENT CAT 01

Korn, S.; Earnest, R. (1974) Acute toxicity of twenty insecticides to striped bass,"Morone saxatilis#". California Fish and Game 60(3):128-131.

SUBST. CLASS = S.

OTHER SUBJECT DESCRIPTORS
PRIM: EEB -4 -05054543 PM-R-50-0525
SEC: EEB -4 - 5103543

DIRECT RVW TIME = (MH) START-DATE END DATE

REVIEWED BY: Kyle Barbehenn
TITLE: Wildlife Biologist
ORG: HED-EEB
LOC/TEL: CM2-1121 /557-1121

SIGNATURE: [signature] DATE: 23 Sept 82

APPROVED BY:
TITLE:
ORG:
LOC/TEL:

SIGNATURE: DATE:

See attached review by Resmovic 9/10/79 ✓ GS

PM GW* 06/19/79

CASE GS0006 TEMEPHOS

CEEB 059001 Temephos (C,O'-(thiodi-4,1-phenylene)

BRANCH EEB DISC 35 TOPIC 05250043

FORMULATION CC - ACTIVE INGREDIENT

FICHE/MASTER ID C50C0819 CONTENT CAT C1

Korn, S.; Earnest, B. (1974) Acute toxicity of twenty insecticides to striped bass, "Morone saxatilis". California Fish and Game 60(3):128-131.

SUBST. CLASS = S.

CIBER SUBJECT DESCRIPTORS
PRIM: EEB -4C-05054543 PH-R-50-0525
SEC: EEB -4C-05103543

DIRECT RVW TIME = 4 hrs (MH) START-DATE 9/10/79 END DATE 9/10/79

REVIEWED BY: Miachel Rexrode
TITLE: Fishery Biologist
ORG: EEB/HED
LOC/TEL:
SIGNATURE: Miachel Rexrode DATE:

APPROVED BY:
TITLE:
ORG:
LOC/TEL:
SIGNATURE: DATE:

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Data Evaluation Record

1. Chemical: Endrin, Endosulfan, DDT, Dursban, Carbaryl, Abate, DDD, Heptachlor, Methoxychlor, Toxaphene, Aldrin, Lindane, Chlordane, Malathion, Parathion, Dieldrin, E.P.N., Fenthion, Dibrom, and Methyl Parathion.

2. Formulation: Endrin, 99% a.i.; Endosulfan ? a.i.; DDT 77.2% a.i.; Duraban 99 + % a.i.; DDD 99% a.i.; Heptachlor 99 + % a.i.; Methoxychlor 89.5% a.i.; Toxaphene 100% a.i.; Aldrin 90% a.i.; Lindane 100% a.i.; Chlordane 60% a.i.; Malathion 95% a.i.; Parathion ? a.i.; Dieldrin 85% a.i.; E.P.N. 87.7% a.i.; Fenthion ? a.i.; Dibrom 90% a.i.; Methyl Parathion 80% a.i.; Carbaryl 98% a.i.; Abate 90% a.i.

3. Citation: Korn, Sid and Earnest, Russell (1974), "Acute Toxicity of Twenty Insecticides to Striped Bass, *Morone saxatilis*", Calif. Fish and Game, 60(3):128-131. (ID #05000819)

4. Reviewed By: Miachel Rexrode
Fishery Biologist
EEB/HED

5. Date Reviewed: 9/15/79

6. Test Type: Aquatic acute LC_{50} 96-hr. (Estuarine)

A. Test Species: Striped Bass *Morone saxatilis*

7. Reported Results:

Endrin, Endosulfan, DDT, and Dursban proved to be the most toxic to striped bass, TL_{50} <1 mg/l. Carbaryl and Abate were at the other end of the scale, proving to be relatively non-toxic with TL_{50} >1000 µg/l.

8. Reviewer's Conclusions:

This study contains data derived from studies which have been determined to be scientifically sound but do not satisfy the intent of the proposed guidelines.

9. Material/Methods

Test Procedures:

Size of Fish - 14-83 mm. SL, 0.06-4.8g.; Acclimation to test water - 1 wk; Bioassay method - intermittent (96-hr) flow proportional diluters; Temperature - was not controlled 13-18°C Temp. mean; D.O. levels - Winkler oxygen determination - indicated that "satisfactory oxygen levels are maintained with the biomass per tank used in these tests." Stock solutions - prepared by dissolving the insecticides in ethanol. Sample size - 10 fish per concentration in 80 liter aquaria.

10. Statistical Analysis

The LD_{50} values were determined by converting the data to logs and probits and calculating a linear regression according to a modification of the Litchfield and Wilcoxin (1949) method. Refer to Table 1 for LD_{50} values.

Table 1 - Toxicity of Insecticide to Striped Bass Listed in Descending Order

Insecticide	Mean length (mm)	Mean weight (g)	Temp mean (C°)	Salinity mean (°/oo)	Turbidity mean (J.T.U)	LC_{50} (95% C.I.) (ug/1)
Endrin	70	2.7	17±1*	28±2*	2	0.094 (0.045-0.19)
Endosulfan	33	0.3	16±1	30±1	1	0.1 (0.048-0.21)
DDT	70	2.7	17±1.5	28±1	2	0.53 (0.38-0.84)
Dursban	36	0.6	13±0.5	30±2	1	0.58 (0.35-0.07)
DDD	40	0.6	17±1	30±2	1	2.5 (1.6-4)
Heptachlor	33	0.5	13±1	28±1	1	3 (1-6)
Methoxychlor	70	2.9	15±0.5	28±	2	3.3 (2.1-5.1))
Toxaphene	60	2.30	17±1.5	30±2	1	4.4 (2.9)
Aldrin	70	4.3	13±1.5	28±2	2	7.2 (3.4-15.2)
Lindane	65	2.4	13±1	28±1	2	7.3 (4.5-11.9)
Chlordane	83	4.8	15±0.5	28±2	2	11.8 (5.7-24)
Malathion	34	0.4	13±1	30±1	1	14 (13-15)
parathion	83	4.8	15±1	27±2	2	17.8 (4.8-65.7)
Dieldrin	78	4.3	14±0.5	28±2	3	19.7 (9.8-33.4)
E.P.N.	37	0.36	18±1.5	30±1	1	60 (25-150)
Fenthion	35	0.33	13±1	29±1	1	453 (216-955)
Dibron	46	0.8	13±1	30±1	1	500 (100-2400)
Methyl Parathion	34	0.4	13±1	30±2	1	790 (170-1400)
Carbaryl	31	0.42	17±0.	30±1	1	1000
Abate	14	0.6	13±1	30±1	1	1000

*Range

Reviewer's Evaluation

A. Test Procedure

This test procedure does not comply, entirely, with the recommended EPA 1978 protocol.

B. Statistical Analysis

Mortalities were recorded daily but only the 96-hr. results are reported. No comparison of solvent controls or standard controls was mentioned in this report.

C. Discussions/Results

The data derived from these studies appear to be scientifically sound but do not satisfy the intent of the proposed EPA 1978 guidelines.

These studies are classified as "supplemental" because of the following:

1. Temperature - was not controlled, ranged from 13-18°C.

2. D.O. levels - not specified, - "satisfactory oxygen levels are maintained."

3. Controls - no discussion on standard controls or solvent controls; no mention of control mortalities.

4. Percentage concentration of active ingredient - Endosulfan, Aldrin, Parathion, and Fenthion percent concentration not specified.

Repairability: If ever the above rationale can be satisfied, this study will be reevaluated and may be upgraded.