

US EPA ARCHIVE DOCUMENT

CASE GS0140 ALDICARB PH 9/29/82

CHEM 098301

BRANCH EEB DISC TOPIC Special Order

FORMULATION 00 Active Ingredient

FICHE/MASTER ID 60102132 CONTENT CAT 01

Fink, R.; Beavers, J.; Brown, R. (1979) Final Report: Eight-day Dietary LC50--Bobwhite Quail; Technical Grade Aldicarb; Project No. 142-118. (Unpublished study received Dec 12, 1979 under 1016-78; prepared by Wildlife International Ltd., submitted by Union Carbide Corp., Arlington, VA; CDL:099120-B)

SUBST. CLASS = 3.

OTHER SUBJECT DESCRIPTORS

PRIM:
SEC:

DIRECT RVA TIME = 4 Hrs. (HH) START DATE 9/24/79 END DATE 9/24/79

REVIEWED BY: Ray Matheny
TITLE:
ORG: EEB
LOC/TEL:

SIGNATURE: *Richard D. Stewart*

DATE: 1/20/84

APPROVED BY:
TITLE:
ORG:
LOC/TEL:

SIGNATURE:

DATE:

Validation Sheet

Formulation: Technical 100%

Chemical Name: Aldicarb

Validator: Ray Matheny

Date: 9/24/79

Test Type: Eight-Day Dietary LC₅₀

Test I.D. #: Project No. 142-118 (WI-447)

Citation: Beavers, J.B. and R. Fink. June 6, 1979. Eight-Day Dietary LC₅₀ - Bobwhite Quail - Technical Grade Aldicarb - Final Report. Submitted to Union Carbide Corp. Wildlife International Ltd. 17 pp. (00102132)

Validation Category: Core

Result:	<u>Species</u>	<u>Test</u>	<u>Confidence Limits</u>
	Bobwhite quail	8-Day Dietary LC ₅₀ : 71 ppm	(59 - 85 ppm)

Validation Category Rationale: The EE Branch, using the Comment Computer terminal determines that the LC₅₀ is 70.7 ppm with confidence limits of 56.5 to 89.1 ppm (probit method). Satisfies registration requirements.

Category Repairability/Rationale: N/A

Abstract: Standard procedures appeared to have been used in the conduct of this test. Fourteen day old chicks were randomly assigned to one of three treatment groups:

<u>Treatment</u>	<u>Pens</u>	<u>Birds/Pen</u>	<u>Dietary Concentration (ppm)</u>
Control	5	10	Basal Diet Only
Lab Standard*	5	10	15.9, 25.1, 39.8, 63.1, 100
Experimental	5	10	10.0, 17.8, 31.6, 56.2 100.0

*dieldrin

The lab standard and experimental material were dissolved in corn oil at the ratio of 2 parts (by weight) of each solution to 98 parts of the standard game bird starter ration. The birds were exposed to the above dietary concentrations for five days, then maintained on toxicant-free diet for an addition three day observation period. Body weights were recorded by pen at initiation and termination of the study. Food consumption, while accurately measured, is presented as an estimate due to unavoidable wastage by the birds.

There was one mortality in the negative control groups. This bird was noted as nostril picked. Its symptoms: depression, reduced reaction to external stimuli, wing droop, ruffled appearance, loss of coordination, and lower limb weakness. The bird died on Day 3. In the lab standard groups there was a 10% mortality rate at the 25.1 ppm, a 50% mortality at the 63.1 ppm and 100 ppm dose levels. Symptoms were typical for dieldrin poisoning.

Symptoms of Toxic Effects/Dosage Level - Experimental Groups

<u>Level(ppm)</u>	<u>Symptoms</u>	<u>Remarks</u>
10.0	No overt symptoms of toxicity	
17.8	" "	
31.6	" "	
56.2	hyperexcitability followed by lethargy, loss of coordination, wing droop, lower limb weakness	- all surviving birds were asymptomatic by Day 7
100.0	lethargy, depression, reduced reaction to external stimuli, wing droop, ruffled appearance, excessive salivation, loss of coordination, lower limb weakness, prostrate posture, loss of righting reflex, lower limb rigidity; several birds comatose prior to death	- single surviving bird lethargic through Day 6, but asymptomatic by Day 7

R. Matheny
9/24/79

Aldicarb (TimeK) Technical
Bobwhite Quail
8 day dietary LC50:

9001 data 100.0,5602,31.6,17.8,10.0
9002 data 10,10,10,10,10
9003 data 9,2,0,0,0
run

79/09/24. 13.31.57.
BASIC PROGRAM A78LC50

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
100	10	9	90.	1.07422
56.2	10	2	20.	5.46875
31.6	10	0	0	9.76563E-2
17.8	10	0	0	9.76563E-2
10	10	0	0	9.76563E-2

THE BINOMIAL TEST SHOWS THAT 31.6 AND 100 CAN BE USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT CONFIDENCE LIMITS SINCE THE ACTUAL CONFIDENCE LEVEL ASSOCIATED WITH THESE LIMITS IS 98.8281 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS 71.3192

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

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
2	.167754	70.1035	57.1425	94.0158

-----RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
7	.365412	1	.999508

SLOPE = 8.60445
95 PERCENT CONFIDENCE LIMITS = 3.40312 AND 13.8058

LC50 = 70.7285
95 PERCENT CONFIDENCE LIMITS = 56.5461 AND 89.1721
