

US EPA ARCHIVE DOCUMENT

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CASE GS0140 ALDICARB PH 9/29/82

CHEM 098301

BRANCH EEB DISC TOPIC Special Order

FORMULATION 00 Active Ingredient

FICHE/MASTER ID 00022923 CONTENT CAT 02

Hill, E.F.; Heath, R.G.; Spann, J.W.; et al. (1975) Lethal Dietary Toxicities of Environmental Pollutants to Birds: Special Scientific Report--Wildlife No. 191. (U.S. Dept. of the Interior, Fish and Wildlife Service, Patuxent Wildlife Research Center; unpublished report)

SUBST, CLASS = 3.

OTHER SUBJECT DESCRIPTORS

PRIM:
SEC:

DIRECT RVA TIME 4 hrs. (MM) START-DATE 1/9/78 END DATE 1/9/78

REVIEWED BY: Larry Turner
TITLE: Biologist
ORG: EEB
LOC/TEL:

SIGNATURE: *Brian R. Steen* DATE: 1/20/84

APPROVED BY:
TITLE:
ORG:
LOC/TEL:

SIGNATURE: DATE:

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STUDY VALIDATION

DATA REVIEW NUMBER: ES-D-1, ES-D-2, ES-E-1

TEST: Avian subacute dietary LC₅₀

SPECIES: D-1, Ring-necked pheasant
D-2, Japanese quail
E-1, Mallard duck

RESULTS:

<u>SPECIES</u>	<u>TOXICITY</u> (95% Conf. limits)
Ring-neck pheasant	LC ₅₀ > 300 ppm (no mortality at 300 ppm)
Japanese quail	LC ₅₀ = 381 ppm (317-453 ppm)
Mallard (10 days old)	LC ₅₀ < 1000 ppm (70% mortality at 1000 ppm)
Mallard (5 days old)	LC ₅₀ = 594 (507-695 ppm)

CHEMICAL: Aldicarb (% a.i. unknown)

TITLE: Lethal Dietary Toxicities of Environmental Pollutants to Birds. USDI, Fish and Wildlife Service, No. 191

ACCESSION NO: 096397 Pet. No. 6F1849

RESEARCHER: E. F. Hill, R. G. Heath, J. W. Spann, and J. D. Williams

REGISTRANT: Union Carbide Corp.

VALIDATION CATEGORY: ~~D-1~~ and E-1 = CORE
D-1 and D-2 = Supplemental

CATEGORY RATIONAL: Felthousen memo dated 12/12/77, except that the pheasant study was termed supplemental because no dose level higher than 200 ppm was tested. *fw*

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VALIDATION SHEET

CRF # _____ PAGE _____ OF _____

FORMULATION: % a.i. SC # CHEMICAL NAME 99% Aldicarb	IA	IB	T	FW	EC	R			
	Validator: Larry Turner					Date: 1/9/78			
	Test Type: Avian subacute dietary LC ₅₀ Ringneck Pheasant and Bobwhite quail								
	Test ID.# ES D-2								

CITATION: Hill, E. F., R. G. Heath, J. W. Spann, and J. D. Williams. 1975. Lethal dietary toxicities of environmental pollutants to birds. U.S. F&W S Special Report - Wildlife No. 191. 61p. Submitted by Union Carbide Corp. pp 6F1849; Reg. #1016-69/78; Acc.#096397, 10/26/77.

Results: Ring-necked pheasant 8-day dietary LC₅₀ > 300 ppm. Japanese quail 8-day dietary LC₅₀ = 381 ppm (95% C.I. 317-453 ppm). Raw mortality data was not reported.

Validation: Supplemental
Category

Category

Rationale: Although Patuxent data are generally considered core data, Japanese quail are not an acceptable test species, and concentration levels were not high enough to determine a valid LC₅₀ for the ring-necked pheasant.

Abstract: A total of 131 compounds were tested over a ten year period at the Patuxent Wildlife Research Center. Quail were 14 days old; ten birds were tested at each of six concentrations. Pheasants were ten days old; ten birds were tested at each of five concentrations. Testing was "standardized" and basically followed EPA guidelines. LC₅₀s were derived by Finney probit analysis run through computer by the system of Daum and Killereas (1966. Bull. Entomol. Soc. Am. 12(4):365-369).

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VALIDATION SHEET

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OF

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC #	CHEMICAL NAME	Validator:				Date:			
99%		Aldicarb	Larry Turner				1/9/78			
Test Type:			Avian subacute dietary LC ₅₀ Mallard duck							
Test ID.#			ES-EI							

CITATION: Hill, E. F., R. G. Heath, J. W. Spann, and J. D. Williams. 1975. Lethal dietary toxicities of environmental pollutants to birds. U.S. F & WS Special Report - Wildlife No. 191. 61 p. Submitted by Union Carbide Corp. pp 6F1849; Reg#1016-69/78; Acc#096397.10/26/77.

Results: Mallard duck 8 day dietary LC₅₀ = 594 ppm (95% c.i. 507 - 695 ppm). Raw mortality data was not reported.

Validation

Category: Core

Category

Rationale: Pautuxent data presented in this paper are considered core - section memo to Dr. Rogoff.

Abstract:

A total of 131 compounds were tested over a ten year period at Pautuxent Wildlife Research Center. Ducklings tested were five days old at the start of testing. Six concentrations (unspecified) were tested, each with 10 birds. Testing was "standardized" and basically followed EPA guidelines. LC₅₀s were derived by Finney probit analysis run through computer by System of Daum and Killereas (1966. Bull. Entomol. Soc. Am. 12(4); 365-369).

Japanese quail	19	6	16	260	(206- 334)	5.247	(1.047)	5.27	(3.87- 7.34)
Ring-necked pheasant	10	4	8	162	(120- 207)	8.135	(3.332)	3.05	(2.22- 4.05)
Mallard	17	4	8	894	(575- 1910)	2.739	(1.586)	2.79	(1.42- 4.76)
<u>Acetone</u>									
Japanese quail	14	3	10	>40,000	(No mortality to 40,000 ppm)				
Ring-necked pheasant	10	3	10	>40,000	(No mortality to 40,000 ppm)				
<u>Aldicarb</u>									
Japanese quail	14	6	10	381	(317 - 453)	9.716	(1.931)	6.9	(5.5 - 8.7)
Ring-necked pheasant	10	5	10	>300	(No mortality to 300 ppm)				
Mallard	10	1	10	<1000	(70% mortality at 1000 ppm)				
Mallard	5	6	10	594	(507- 695)	5.291	(1.245)	4.8	(3.9 - 6.0)
<u>Aldrin</u>									
Bobwhite	17	6	10	37	(33- 41)	9.867	(2.082)	0.94	(0.82- 1.09)
Japanese quail	6	5	18	34	(28- 41)	5.133	(1.243)	0.81	(0.66- 0.99)
Ring-necked pheasant	8	6	10	57	(50- 64)	10.433	(1.835)	1.05	(0.88- 1.25)
Mallard	8	6	10	155	(129- 186)	4.417	(1.507)	0.76	(0.60- 0.98)
<u>Aminocarb</u>									
Ring-necked pheasant	10	5	10	>2000	(No mortality to 2000 ppm)				
Mallard	10	3	10	2552	(1698-3855)	1.864	(1.139)	20.1	(12.5 -33.2)

*Called wood 3/15/83 Requested above LD50 studies
and LD50 testing result with technical and
granular Aldicarb.*

Table 1. Dietary toxicities of 131 compounds tested in 5-day diets of young bobwhites, Japanese quail, ring-necked pheasants, or mallards (1964-73)--continued

Compound	Species	Age (days) ^a	No. of conc. ^b	No. birds/ conc.	LC50 ^c	Toxicity statistics		
						(95% C.L.)	Slope ^d	RTD ^e (95% C.L.)
Aldicarb	Japanese quail	17	3	16	>5000			