

9-28-82

CASE 050088

DIMETHUATE

PM

21-5102

CHEM 035001

Dimethoate (O,O-dimethyl S-((methylcar

BRANCH EEB

DISC 40 TOPIC 05100542

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 of the Interior, Fish and Wildlife Service, Patuxent Wildlife Research Center; Unpublished Report)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 = 8.

DIRECT RVN TIME = 1 hr (MH) START-DATE 8/17/82 END DATE 8/17/82

REVIEWED BY: James D. Felkel
TITLE: Wildlife Biologist
ORG: Ecological Effects Branch, Hazard Evaluation Division
LOC/TEL: Crystal Mall #2, Rm. 1112, 557-3113

SIGNATURE:

DATE: 9/28/82

APPROVED BY:

TITLE:

ORG:

LOC/TEL:

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SIGNATURE:

DATE:

The three avian dietary studies with dimethoate cited for dimethoate in this report are considered scientifically sound and demonstrate that dimethoate is slightly toxic to the mallard (LC50 = 1011 ppm) and highly toxic to the ring-necked pheasant (LC50 = 332 ppm) and Japanese quail (LC50 = 346 ppm). As per H. Craven's 10/30/79 memorandum (as amended), "potential core studies conducted by government labs known to have expertise in the area examined will be considered core" (EEB Standard Policy/Procedure #U-2). In this regard, the studies on the mallard and pheasant meet the intent of proposed subpart F guidelines (7/10/78). The study on Japanese quail does not, since this species is not native to the U.S.

Rated the Japanese quail study as supplemental - since the quail was not a species Redesignated - for the FROTR (Dimethoate Standard)

Candy Krawiec
1 9/28/82

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	Toxicity statistics								
	Species	Age (days) ^a	No. of conc. ^b	No. birds/ conc.	LC ₅₀ ^c	(95% C.L.)	Slope ^d (S.D.)	RTD ^e (95% C.L.)	relative toxicity of 1000 ^f
<u>Dieldrin^h</u>									
	Bobwhite	14	6	10	37	(30- 46)	9.257 (2.214)	1	--
	Japanese quail	14	6	10	62	(53- 71)	7.767 (1.552)	1	--
	Ring-necked pheasant	10	6	10	58	(51- 67)	9.973 (2.021)	1	--
	Mallard	10	5	10	169	(131- 217)	4.881 (1.378)	1	--
	Mallard	5	6	10	153	(123- 196)	5.435 (1.137)	1	--
<u>Dimethoate^g - parathion^g was used as vehicle.</u>									
	Japanese quail	14	6	16	346	(303- 394)	6.782 (1.273)	5.8	(4.9 - 7.0)
	Ring-necked pheasant	10	6	8	332	(293- 376)	10.075 (3.872)	7.0	(6.0 - 8.3)
	Mallard	10	6	9	1011	(707-1372)	2.017 (0.931)	10.0	(6.5 -17.2)
<u>Dinoseb</u>									
	Japanese quail	14	6	10	409	(356- 470)	7.018 (1.400)	7.1	(5.8 - 8.5)
	Ring-necked pheasant	10	6	10	515	(473- 562)	13.446 (3.021)	9.2 ^f	--
	Mallard	10	3	8	≈ 540	--	--	≈ 3.0	--
<u>Diethyl phthalate</u>									
	Ring-necked pheasant	10	3	10	>5000	(No mortality to 5000 ppm)			
	Mallard	10	3	12	>5000	(No mortality to 5000 ppm)			
<u>Dioxathion</u>									
	Japanese quail	12	6	14	6640	(5105-9000)	7.195 (1.885)	124	(102 -158)
	Ring-necked pheasant	10	5	9	4067	(3593-4610)	7.769 (2.502)	82.7	(69.1-99.3)
	Mallard	17	4	8	≈ 3600	--	--	≈ 18	--