

US EPA ARCHIVE DOCUMENT

CASE GS0315

LINDANE

PM PM# 04/05/84

CHEM 009001

Lindane ( gamma isomer of benzene hexac

BRANCH EEB DISC 40 TOPIC 05050542

FORMULATION 00 - ACTIVE INGREDIENT

FICHE/MASTER ID 00099594

CONTENT CAT 01

Grolleau, G. (1965) Toxicity of Seed-dressing Products for Partridge and Pheasant. (Unpublished study received Nov 22, 1978 under 42567-1; prepared by Centre National de Recherches Zootechniques, France, submitted by La Quinoleine S.A., c/o Registration Consulting Assoc., Pacifica, CA; CDL:237443-E)

SUBST. CLASS = S.

DIRECT RVW TIME = 2 (MH) START-DATE 5/13/85 END DATE 5/13/85

REVIEWED BY: Ann Stavola  
TITLE: Aquatic Biologist  
ORG: HED/EEB  
LOC/TEL: Cm2 801 557 7560

SIGNATURE: Ann Stavola

DATE: 5/13/85

APPROVED BY:  
TITLE: Section Chief, EEB  
ORG:  
LOC/TEL:

SIGNATURE: H. T. Craven

DATE: 8/6/85

CASE GSV122

INIRAM

PM 300 10/26/82

CHEM 079501

Iniram ( tetramethylthiuram disulfide )

BRANCH EEB

DISC 4, TOPIC 05050542

FORMULATION 01 - TECHNICAL CHEMICAL

FIGURE/MASTER ID 00099594

CONTENT CAT 01

Grolleau, G. (1965) Toxicity of Seed-dressing Products for Partridge and Pheasant. (Unpublished study received Nov 22, 1978 under 42507-1; prepared by Centre National de Recherches Zootechniques, France, submitted by La Quinoleine S.A., c/o Registration Consulting Assoc., Pacifica, CA; CDL:237443-E)

SUBST. CLASS = S.

DIRECT RVW TIME =

(MH)

START-DATE

END DATE

REVIEWED BY: JOHN J. BASCIETTO

TITLE: Wildlife Biologist

ORG: EEB/HED

LOC/TEL: 559-9307

SIGNATURE:

*John J. Basciello*

DATE: 8/18/83

APPROVED BY:

TITLE:

ORG:

LOC/TEL:

SIGNATURE:

DATE:

1. Chemical: Thiram; Dithiocarbamate; Copper dimethyl-Copper oxyquinolate; Methylmercury dicyandiamide; Phonylmercury acetate; Methoxyethylmercury; Lindane; Heptachlor; Aldrin; Dieldrin.
2. Formulation: Technicals  
Lindane 99%
3. Citation: Grolleau, G. (1965). Toxicity of Seed-Dressing Products for Partridge and Pheasant. (Unpublished study by Centre National de Recherches Zootechniques, France, submitted by La Quinoleine S.A. c/o Registration Consulting Assoc. Pacifica, CA; CDL: 237443E) MRID: 00099594

4. Reviewed by: John J. Bascietto  
Wildlife Biologist  
EEB/HED

Signature: *Ann Stavola JJB*

Date: *June 5, 1985*

Ann Stavola  
Aquatic Biologist  
EEB/HED

Signature: *Ann Stavola*

Date: *June 5, 1985*

5. Date Reviewed: August 8, 1983/Revised May 13, 1985

6. Test Type: Avian acute toxicity and dietary toxicity; dwarf cock, partridge, red-legged partridge, pheasant.

7. Reported Results:

	<u>Acute</u>	<u>Dietary</u>
Dwarf cock	LD <sub>0</sub> = 60 mg/kg LD <sub>100</sub> = 175 mg/kg	LD <sub>0</sub> = 75 mg/kg LD <sub>100</sub> = 105 mg/kg
Partridge	LD <sub>0</sub> = 65 mg/kg LD <sub>100</sub> = 175 mg/kg	LD <sub>0</sub> = 105 mg/kg LD <sub>100</sub> = 300 mg/kg
Red-legged Partridge	LD <sub>0</sub> = 35 mg/kg LD <sub>100</sub> = 85 mg/kg	LD <sub>0</sub> = 75 mg/kg LD <sub>100</sub> = 135 mg/kg
Pheasant	LD <sub>0</sub> = 75 mg/kg LD <sub>100</sub> = 100 mg/kg	LD <sub>0</sub> = 60 mg/kg LD <sub>100</sub> = 120 mg/kg

8. Reviewer's Conclusions:

The study is not scientifically sound. EEB cannot use the results of this study for any purpose, because the methodology was unsound and the statistical analysis was extremely weak (particularly unsound for the dietary test). Also, the translation to English was very poor.

9. Materials and Methods

A. Test Procedures:

- dwarf cock	<u>Gallus gallus</u>	(hybirds)
- partridge	<u>Perdix perdix</u>	
- red-legged partridge	<u>Alectoris rufa</u>	
- ring-necked pheasant	<u>Phasianus colchicus</u>	

Birds were placed in nine m<sup>2</sup> outdoor aviaries and had food and water.

15 - 20 partridges	per aviary
15 pheasants	per aviary
15 - 20 dwarf cock	per aviary

Some animals were dosed with unknown substances in previous experiments. Single oral doses were in gelatin capsules followed by some water.

"Dietary" doses were administered as single oral doses x3 trials, one per day. It was not clear if mixture of dose was in food or in capsules.

B. Statistical Analysis

None was described. No method was cited.

10. Results (For lindane)

(See tables appended.)

No LD<sub>50</sub> calculated. No LC<sub>50</sub> calculated.

	<u>Single Dose (mg/kg)</u>	<u>Triple Dose (mg/kg)</u>
Cock	LD <sub>0</sub> = 60 LD <sub>100</sub> = 175	LD <sub>0</sub> = 75 LD <sub>100</sub> = 105
Partridge	LD <sub>0</sub> = 65 LD <sub>100</sub> = 175	LD <sub>0</sub> = 105 LD <sub>100</sub> = 300
Red-legged partridge	LD <sub>0</sub> = 35 LD <sub>100</sub> = 85	LD <sub>0</sub> = 75 LD <sub>100</sub> = 135
Pheasant	LD <sub>0</sub> = 75 LD <sub>100</sub> = 100	LD <sub>0</sub> = 60 LD <sub>100</sub> = 120

11. Reviewer's Evaluation

A. Test Procedures:

The procedures were totally inappropriate for EPA purposes. Numbers of birds, facilities, dietary dosing, and experimental design were not in any close agreement with guidelines protocols. The use of previously dosed animals (especially without records of what was used) is specifically grounds for rejection of the test under the guidelines.

B. Statistics:

None necessary

C. Results:

No description of how the researchers arrived at the "approximate" LD<sub>0</sub> and LD<sub>100</sub>. LD<sub>50</sub> were specifically listed as "not computerisable." LC<sub>50</sub> results were simply 3X acute exposures.

The entire paper was a poor translation into English, further complicating this evaluation.

I recommend ignoring these data completely.

D. Conclusions:

1. Category: Invalid

2. Rationale: - previously dosed animals were used with no records  
- inappropriate dietary exposure  
- no controls  
- no LD<sub>50</sub> or statistics to back up the LD<sub>0</sub> and LD<sub>100</sub> results

3. Repairability: None possible

Table 2

## Toxicity of seed dressing product by single ingestion

Product	Species	Number of tested animals	LD 0	LD 100	LD 50
			in mg per kg		
Dieldrin	dwarf cock	43	20	65	52
	partridge	15	8	25	13
	red-legged partridge	9	5	15	not computerisable
	pheasant	15	15	45	not computerisable
Aldrin	dwarf cock	19	20	40	31
	partridge	10	5	10	not computerisable
	red-legged partridge	6	5	10	not computerisable
	pheasant	15	8	35	15
Heptachlor	dwarf cock	12	190	240	215
	partridge	10	15	45	32
	red-legged partridge	25	5	20	8
	pheasant	22	55	120	81
Lindane	dwarf cock	18	60	175	not computerisable
	partridge	26	65	125	not computerisable
	red-legged partridge	21	35	85	not computerisable
	pheasant	16	75	100	not computerisable
Methoxyethyl-mercury silicate	dwarf cock	19	20	40	38
	partridge	9	10	15	not computerisable
	red-legged partridge	13	15	30	18
	pheasant	18	8	30	18
Phenylmercury acetate	dwarf cock	63	200	300	251
	partridge	19	30	45	37
Methylmercury dicyandiamide	dwarf cock	20	8	25	17
	partridge	8	10	15	not computerisable
Copper oxyquinolate	dwarf cock	64	540	> 670	655
	partridge	20	35	70	not computerisable
	red-legged partridge	24	130	190	157
	pheasant	27	40	> 120	not computerisable
Cuprobame	dwarf cock	55	300	> 380	not computerisable
	partridge	25	35	110	59
	red-legged partridge	12	70	100	not computerisable
	pheasant	20	100	250	not computerisable
Thiran	dwarf cock	52	600	> 1600	not computerisable
	partridge	10	400	600	not computerisable

Table 3

Toxicity by triple ingestion of seed dressing products

Product	Species	Number of tested animals	LD 0	LD 100	LD 50
			in mg / kg		
Dieldrin	dwarf-cock	17	$8 \times 3 = 24$	$40 \times 3 = 120$	$26 \times 3 = 78$
	dwarf-cock	9	$2 \times 3 = 6$	$10 \times 3 = 30$	not computer.
Aldrin	partridge	12	$< 2 \times 3 = 6$	$8 \times 3 = 24$	not computer.
	pheasant	9	$5 \times 3 = 15$	$15 \times 3 = 45$	not computer.
Heptachlor	dwarf-cock	24	$20 \times 3 = 60$	$45 \times 3 = 135$	not computer.
	partridge	9	$10 \times 3 = 30$	$20 \times 3 = 60$	not computer.
	red-legged partridge	18	$10 \times 3 = 30$	$25 \times 3 = 75$	not computer.
	pheasant	27	$40 \times 3 = 120$	$70 \times 3 = 210$	not computer.
Lindane	dwarf-cock	42	$25 \times 3 = 75$	$35 \times 3 = 105$	not computer.
	partridge	45	$35 \times 3 = 105$	$100 \times 3 = 300$	not computer.
	red-legged partridge	18	$25 \times 3 = 75$	$45 \times 3 = 135$	not computer.
	pheasant	18	$20 \times 3 = 60$	$40 \times 3 = 120$	not computer.
Methoxyethyl mercury silicate	dwarf-cock	24	$45 \times 3 = 135$	$55 \times 3 = 165$	not computer.
	partridge	12	$10 \times 3 = 30$	$20 \times 3 = 60$	not computer.
	red-legged partridge	18	$15 \times 3 = 45$	$40 \times 3 = 120$	$16 \times 3 = 48$
	pheasant	18	$15 \times 3 = 45$	$35 \times 3 = 105$	$22 \times 3 = 66$
Phenylmercury acetate	dwarf-cock	24	$55 \times 3 = 165$	$70 \times 3 = 210$	not computer.
	partridge	12	$15 \times 3 = 45$	$25 \times 3 = 75$	not computer.
Copper xyquinolate	dwarf-cock	18	$380 \times 3 = 1140$	$400 \times 3 = 1200$	not computer.
	partridge	27	$25 \times 3 = 75$	$> 65 \times 3 = 195$	not computer.
	red-legged partridge	34	$30 \times 3 = 90$	$50 \times 3 = 150$	not computer.
	pheasant	15	$< 50 \times 3 = 150$	$90 \times 3 = 270$	$64 \times 3 = 192$
Cuprobane	dwarf-cock	42	$90 \times 3 = 270$	$210 \times 3 = 630$	not computer.
	partridge	24	$< 20 \times 3 = 60$	$50 \times 3 = 150$	$25 \times 3 = 75$
	red-legged partridge	13	$40 \times 3 = 120$	$70 \times 3 = 210$	$55 \times 3 = 165$
	pheasant	13	$120 \times 3 = 360$	$130 \times 3 = 390$	not computer.
Thiram	dwarf-cock	12	$290 \times 3 = 870$	$320 \times 3 = 960$	not computer.
	partridge	24	$130 \times 3 = 390$	$200 \times 3 = 600$	not computer.