(TDR03B) DATA EVALUATION RECORD PAGE 1 OF

CASE GS0315 LINDANE PM PM# 04/05/84

CHEM 009001 Lindane (gamma isomer of benzene hexac

BRANCH EEB DISC 40 TOPIC 05100542

FORMULATION 00 - ACTIVE INGREDIENT

FICHE/MASTER ID 00101191 CONTENT CAT 01

Turtle, E.; Taylor, A.; Wright, E.; et al. (1963) The effects on birds of certain chlorinated insecticides used as seed dressings. J. Sci. Fd Agric. 14(Aug):567-577. (Also In unpublished submission received on unknown date under unknown admin. no.; submitted by Shell Chemical Co., Washington, DC; CDL: 120482-W)

SUBST. CLASS = S.

OTHER SUBJECT DESCRIPTORS
PRIM: EEB -35-05100042

DIRECT RVW TIME = 4 (MH) START-DATE 5/6/85 END DATE 5/7/85

REVIEWED BY: Ann Stavola
TITLE: Aquatic Biologist
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SIGNATURE: Ann Stavola DATE: 5/7/85

APPROVED BY:
TITLE: Section Chief
ORG: EEB
LOC/TEL:
SIGNATURE: Henry T. Craven DATE: 6/6/85

DATA EVALUATION RECORD

1. Chemical: Lindane, Dieldrin, Aldrin, Heptachlor

2. Test Material: Unknown percents ai

3. Study/Action Type: Avian Acute Oral Study
Pigeon (Columba livia)

4. Study ID: Turtle, E.; Taylor, A.; Wright E., et al., (1963) The Effects on Birds of Certain Chlorinated Insecticides used as Seed Dressings. J. Sci. Fd. Agric. 14 (Aug): 567-577. Submitted by Shell Chemical Co., Washington, DC. MRID: 00101191.

5. Reviewed By: Ann Stavola
Aquatic Biologist
HED/EEB
Signature: Ann Stavola
Date: June 5, 1985

6. Approved By: Harry Craven
Supervisory Biologist
HED/EEB
Signature: Henry T. Craven
Date: 6/6/85

7. Conclusions:

The study is not scientifically sound and does not meet our guideline requirements for an avian acute oral study.

8. Recommendations:

N/A

9. Background:

This study was submitted for the data call-in for the Lindane Standard.

10. Materials and Methods:

A. Test animals: Domestic pigeon (Columba livia); purchased from animal suppliers; of heterogeneous stock and unknown history.

B. Dose:

Lindane	- 290, 420, 600 mg/kg
Dieldrin	- 20, 40, 80 mg/kg
Aldrin	- 40, 46, 53, 61, 70, 80 mg/kg
Heptachlor	- 40, 54, 73, 99, 133, 180, 243 mg/kg

All toxicants were administered as acute oral doses in gelatin capsules.

C. Study Design: The birds were transferred to individual cages for the tests and were weighed 24 hrs prior to administration of the toxicants. The birds were deprived of food overnight before receiving the toxicants, and access to food was delayed up to 4 hrs after dosing. There were four birds/dose in the dieldrin test, and eight birds/dose for the other tests. Birds were analyzed for residues at the conclusion of the tests.

D. Statistical Analysis: The method used to calculate the LD_{50} values was not given.

11. Reported Results:

	LD_{50} (mg/kg)
Lindane	> 600
Dieldrin	67 (44-115)
Aldrin	55 (46-65)
Heptachlor	167 (133-245)

The residue analyses indicated that there was a wide variation in the distribution of residues through the flesh and organs. There was only a rough correlation between the occurrence of death and the size of a residue in the body.

The study was undertaken to ascertain if these insecticides were responsible for the deaths of a large number of wild birds in the spring in England.

12. Study Author's Conclusions/QA Measures:

The results of the residue analyses support the view that aldrin, dieldrin, and heptachlor were mainly responsible for the deaths.

The lab tests indicated that lindane has a low toxicity in comparison to the other three organochlorines.

No QA statements.

13. Reviewer's Discussion:

A. Test Procedures:

The test procedure does not follow those recommended by EPA for the following reasons: the report does not indicate the purity of the test substances; inappropriate test species; birds were not from the same stock and their histories and ages were not known; control birds were not used; small group sizes per treatment level.

B. Statistical Analysis:

Neither the raw data nor the method used to calculate the LD_{50} values were given. The results cannot be verified.

C. Discussion/Results:

Based upon problems with the test procedure and failure to include the raw data the results cannot be accepted.

D. Adequacy of the Study:

1. Conclusions: Invalid

2. Rationale: Poor procedures, failure to include raw data.

3. Repairability: None