DATA EVALUATION RECORD

TRICHLORFON

SUBCHRONIC TOXICITY

CITATION: Karmilov VA. 1973. Subacute experimental chlorofos poisoning. Farmakol. Toksikol. 36(5):727-728 [English translation].

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DATA EVALUATION RECORD

STUDY TYPE: Subchronic oral toxicity in rats.

CITATION: Karmilov VA. 1973. Subacute experimental chlorofos poisoning. Farmakol. Toksikol. 36(5):727-728 [English translation].

ACCESSION NUMBER: Not available.

MRID NUMBER: Not available.

LABORATORY: Not specified.

TEST MATERIAL: Trichlorfon Technical.

PROTOCOL:

1. Chlorofos technical, (Trichlorfon) served as the test compound.

2. Ninety white rats (source, age, sex, and strain unspecified) served as the test species. Their body weights ranged from 120-200 g.

3. Technical chlorofos was administered per os at a dose level of 300 mg/kg daily for 5 days.

4. Animals were sacrificed by decapitation and tissues were prepared for histologic examination in 10 percent formalin. Succinate dehydrogenase, cytochrome oxidase, and cholinesterase activities were measured from homogenates of brain, liver, kidney, and heart tissues. Frozen tissue sections were used to determine content and distribution of lipids, cytochrome oxidase, and succinate dehydrogenase.

5. A concurrent control group (30 animals) was present, but treatment was not specified (vehicle or untreated).

RESULTS:

The treated animals were reported to be unkempt, lethargic, cyanotic, and with reduced muscle tone.

As shown below, enzyme assays of tissue homogenates produced a general decrease in activity with succinate dehydrogenase showing the greatest effect:

Organ	Cholinesterase	Succinate Dehydrogenase	Cytochrome Oxidase
Brain	decreased 79.2 percent	decreased 3 fold	reduced 17-18 percent
Heart	---	decreased 3 fold	reduced 17-18 percent
Kidney	---	decreased 2 fold	decreased 2 fold
Liver	decreased 58.6 percent	decreased 4 fold	decreased 2 fold

Gross pathological findings included cerebral edema and polyemia of the internal organs, the latter supported by histologic examination. Histologic findings included dystrophic changes, especially to the liver parenchyma, and lung changes (atelectasis, emphysema, bronchiospasm, and focal pneumonia with serous-leukocytic exudates). Liver cells showed fat deposits, and both liver and heart cells had decreased glycogen.

CONCLUSIONS:

Administration of 300 mg/kg of chlorofos for 5 days to white rats resulted in effects including lethargy and cyanosis, while chemical studies of enzyme activities showed depression in cholinesterase, succinate dehydrogenase, and cytochrome oxidase. Additionally, polyemia of internal organs and dystrophic changes especially to liver and lungs were seen.

CORE CLASSIFICATION: Supplementary.

This study was performed at only one dosage level, and the rationale for its selection was not given. A range of at least three levels would have provided more valuable information relative to evaluating the compound's effect. Although histopathology was conducted, the number of tissues examined was not specified.