

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD

TRICHLORFON

Mutagenicity in Drosophila melanogaster Strains D-32 and Muller-5

CITATION: Brzheskiy V. 1973. Possibility of inducing mutations in Drosophila melanogaster through the action of trichlorfon. Med. Parazitol. Parazit. Bolezni 42:703-706.

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DATA EVALUATION RECORD

STUDY TYPE: Mutagenicity in Drosophila melanogaster strains D-32 and Muller-5.

CITATION: Brzheskiy V. 1973. Possibility of inducing mutations in Drosophila melanogaster through the action of trichlorfon. Med. Parazit. Parazit. Bolezni 42:703-706.

ACCESSION NUMBER: Not available.

MRID NUMBER: Not available.

LABORATORY: Not stated.

TEST MATERIAL: Trichlorfon, 0,0-dimethyl (1-oxy-2,2,2-trimethyl)fonphonate [sic] [source and purity not stated].

PROTOCOL:

1. The strains of Drosophila melanogaster used in this study were strain D-32 (normal near-Moscow low mutable) and strain $sc^{S1w^a}JnSsc^8$ (Muller-5). A suitable test dose was determined by exposing males to trichlorfon vapors in test tubes containing filter paper impregnated with trichlorfon. The dose selected was the dose that caused the death of approximately 50 percent of the males: a 3-hour exposure to 0.075 ml of a 15 percent solution of trichlorfon [solvent not stated].

Recessive sex-linked lethal and sublethal mutations were detected in the second generation by the Muller-5 method, with consideration for different stages of spermatogenesis (mature sperm, spermatids, spermatocytes, and spermatogonia). Cultures with mutations (gray females) were taken and mated to males from the Muller-5 strain for analysis of third generation mutations, to differentiate "partial mutations" from "completely lethal or sublethal mutations." Male fertility was analyzed successively by transferring males to virgin females (1:5) on a daily basis for 12 days (spermatogenic cycle).

RESULTS:

The lethal and sublethal mutation rates for control and treated organisms did not differ. The total number of chromosomes examined (for all stages of spermatogenesis) was not clear [barely legible to reviewer because of poor copy], but appeared to range from approximately 4,100 for treated organisms to approximately 6,000 for controls.

"Fertility in the first generation does not differ for certain from that of the control."

CONCLUSIONS:

The author concluded that trichlorfon was not mutagenic to Drosophila. However, positive controls were not tested.

CORE CLASSIFICATION: Unacceptable.

The following deficiencies were noted:

- o Trichlorfon is an insecticide and the assay organism was an insect.
- o The purity of the test material was not stated.
- o Positive controls were not tested.
- o The solvent used was not stated, and it was not stated whether negative controls included a solvent control.
- o Only one concentration was tested.
- o The fertility test data were not given.
- o "Partial mutations" and "completely lethal or sublethal mutations" were not defined.