

US EPA ARCHIVE DOCUMENT

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Leibovich GS-0104-102

TOXICOLOGY BRANCH: DATA REVIEW

Chemical: Trichlorfon (TCF)

Caswell No.: 385  
Shaughnessey No.: 057901

Study Type: Reproduction study in rats

Citation: "Assessment of Embryotropic Action of Small Doses of Phosphororganic Pesticides Chlorophose, Metaphose and Carbophose", by D.L. Leibovich, Gig. Sanit. 8:21-24, 1973 (trans. fr. Russian)

Accession No./MRID No.: NA/NA

Sponsor/Contracting Lab.: (Published article)

Report No./Date: N/A

Test Material: Trichlorfon ("chlorophose") of unstated source and purity.

Procedures: 12 Pregnant "mongrel" rats per group were intubated during the entire course of pregnancy (and presumably during weaning of pups, since treatment was stated as "one month") at levels of 0.1, 1.0 and 10.0 mg/kg/day test compound; a control group received "water containing OP-7 emulsifiers". Two series of tests were performed: (i) Reproductive and post-natal: evaluating maternal conception, fertility (index), pre-implantation and embryonic losses in relation to c.l.; (ii) pathologic examination of fetuses from a portion (unstated) of each group of treated females sacrificed on day-20 (soft tissue and skeletal); plus evaluation of post-natal development from spontaneous deliveries of the remainder. Gross pathology was performed on treated females and live-born pups one month post-partum. Statistical analyses were performed (unstated tests), and significance determined by the "peak-to-peak value method" (not further identified or described).

Results: Dose-dependent decreases in pregnancy rate were noted at all levels of trichlorfon treatment (45%, 38% and 25% at the low, mid and high-dose, respectively, compared to 90% in control); "fertility" (litter size) also was reduced by treatment varying between "5.5 to 7.4 in test group(s)", compared to 9.6 "ratlings" per female among controls. Growth and development of pups were also affected by trichlorfon: Slight but significant decreases in average pup weights as well as crown-to-rump measurements were tabulated at birth and at three other sampling periods throughout the one-month observation period in all dosage groups, but other indices of postnatal development (time for eyes to open, ear detachment, appearance of teeth and pelage) were

comparable to control in all test groups (no data, however, were presented in the article). Survival of pups to weaning was stated to be "considerably lower" at all doses of TCF, but no data were presented. The test substance was also said to cause "hemodynamic disturbances" (edema, etc.) as well as "dystrophic changes", but again no details or data were presented.

Conclusions: The author concluded that trichlorfon had adverse effects on reproductive indices as well as being fetotoxic at oral levels as low as 0.1 mg/kg/day administered throughout pregnancy.

TB Evaluation: This report is deficient in a number of important supporting details and is judged Supplementary Data:

- (1) No identification of test compound (source, purity, etc.; nor whether technical or formulation)
- (2) Use of unknown strain of rats
- (3) Insufficient tests group size
- (4) Insufficient reporting of fetal and litter data (e.g., results of soft-tissue and skeletal examinations w.r.t. malformations).
- (5) No post-mortem maternal observations reported
- (6) Males were not treated



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