

DATA EVALUATION RECORD

TRICHLORFON

Subchronic Dermal Toxicity in Dogs

CITATION: Bailey CC, Jr. 1956. Evaluation of the dermal toxicity of malathion, chlorothion and Dipterex to dogs. Master's thesis, Clemson Agricultural College, Dept. of Entomology and Zoology.

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STUDY TYPE: Subchronic Dermal Toxicity in Dogs.

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ACCESSION NUMBER: Not available.

MRID NUMBER: 00081203.

LABORATORY: Clemson College, Department of Entomology and Zoology.

TEST MATERIAL: The pertinent test material was identified as technical Dipterex (trichlorfon); source and purity were not stated.

PROTOCOL:

1. Three female mongrel dogs, one young and long-haired, one old and long-haired, and one old short-haired, were used as the test animals. Three dogs (not described) served as controls.
2. Test dogs were dipped for 30 seconds (up to the neck) in a 1 percent aqueous solution of trichlorfon. They were allowed to dry in a cage and then housed 3 per pen. Treatment was once a week for 6 weeks.
3. Dogs were observed for toxic signs.
4. Cholinesterase activity in plasma and red cells was determined several times pretest, then 24 hours before and after each treatment.

RESULTS:

The treated dogs had normal appetites, activity, and reflexes. Plasma cholinesterase activity was depressed about 50 to 60 percent and returned to normal levels 5 days after each treatment. Erythrocyte cholinesterase activity was decreased and did not fully recover to normal levels at 5 days. Erythrocyte cholinesterase activity was more variable in the dosed animals than the plasma enzyme activity.

CONCLUSIONS:

It appears that Dipterex was rapidly detoxified by dogs, since the depressed cholinesterase activity of the plasma rapidly recovered after each weekly treatment. However, erythrocyte cholinesterase remained inhibited longer than that of the plasma and cumulative effects could occur depending on the frequency of dipping. Although the authors concluded that in terms of safety, dogs should only be dipped for 30 seconds in 1 percent Dipterex, this conclusion is tenuous since there was no quantitative variable time-exposure data to support this and although an inhibitory effect on cholinesterase activity was detected, neither a NOEL nor a LOEL can be determined, since only one exposure level was used.

CORE CLASSIFICATION:

The study is classified as Core Supplemental since it contains some useful information on the effects of trichlorfon on cholinesterase activity in the dog. The study however, is limited in that the exposed group consisted of only 3 animals, only one exposure level was used, and a variable exposure time was not studied.