

TOXICITY OF DDT TO FISH. By Joseph M. Ginsburg, New Jersey Agricultural Experiment Station, New Brunswick. Author's abstract of a paper read at the Entomological Society meetings in New York City, December 13-15, 1944.

Observations in the course of field experiments with mosquito larvicides containing DDT have shown this chemical to be toxic to black bass, catfish and salt water minnows. Laboratory experiments, conducted during the summer of 1944, with various concentrations of DDT in the form of (1) colloidal solutions, (2) oil emulsions, and (3) dusts, have brought out its rather high toxicity to goldfish. It appears from these experiments that DDT is most toxic to goldfish when in colloidal solution, less toxic in the form of oil emulsion applied on the surface, and least toxic when applied on the surface in the form of dust. In each case, however, the toxicity is sufficiently high to caution against unrestricted use of DDT on mosquito breeding waters where fish, worth preserving, prevail. Author's Abstract.

DDT RESIDUAL HOUSE SPRAYING IN RURAL AREAS—COSTS AND EFFECTIVENESS. By Frederick L. Knowles and Clinton S. Smith. Abstract of a paper read at the Entomological Society meetings in New York City, December 13-15, 1944.

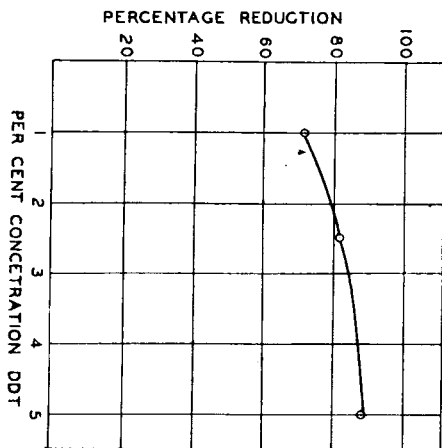


Fig. 1. Percentage reduction of resting female *A. quadrimaculatus* adults in sprayed houses compared to unsprayed houses plotted against DDT concentration of spray (a 5% DDT spray produces a deposition of 6.4 mgs. of DDT per sq. ft.)

To determine the effectiveness as well as the cost of DDT residual house spraying as a possible practical method of malaria control in rural areas, the Office of Malaria Investigations, during the summer of 1944, sprayed 513 tenant houses in a rural area, approximately 36 square miles in extent, near Helena, Arkansas.

Detailed records were kept of the time required for each operation and the quantity of materials used. For a two-month period following the spraying operations, the sprayed houses as well as unsprayed houses were carefully searched for resting adult *A. quadrimaculatus* mosquitoes.

The operations data show that an average of 2,400 square feet in each of 20 houses were sprayed per day; that the average amount of spray material per house was 0.82 gallons and that the total time per house was 21.8 minutes, approximately half of which was traveling time. Two operators were employed, so that in terms of man-hours and cost each house required 0.73 man-hours at a cost of 35 cents, and 0.82 gallons of spray is estimated at 39 cents, so that labor and material costs for each house were 74 cents.

Inspection of 166 unsprayed houses and 174 sprayed houses for resting adult *A. quadrimaculatus* showed for the two-month period following spraying a reduction of the mosquito population in the sprayed houses of 94, 81, and 66 per cent for the 5, 2½, and 1 per cent DDT concentration spray, respectively. Author's Abstract.

TOXICITY OF DDT FOR MAMMALS. By Herbert O. Calvery, Chief, Division of Pharmacology, Food and Drug Administration, Federal Security Agency, Washington, D. C. Abstract of a paper read at the Entomological Society meetings in New York City, December 13-15, 1944.

This presentation consists of a brief resume of our toxicological studies of DDT along the following lines:

1. Acute and subacute application to the skin of rabbits, rats, guinea pigs and dogs.
2. Acute and subacute feeding to rats, mice, guinea pigs, chicks, rabbits, dog, sheep, horse, cow.
3. Chronic feeding to rats and dogs.
4. Skin irritation and sensitization.
5. Pharmacological investigations as to the site and mode of action.
6. Gross and microscopic pathology and blood studies of poisoned animals.

In solid form DDT applied topically to the skin is nonirritating, nonsensitizing and not appreciably absorbed. In solution, either in oil or in organic solvent, it does readily penetrate the skin, is very mildly irritating and a very mild sensitizing agent.

In single and multiple dose administration (acute and subacute) there are wide individual as well as wide species variations.

In the prolonged feeding experiments (chronic toxicity) rats have been fed for about 18 months diets containing 100, 200, 400 and 800 p.p.m. Guinea pigs, dogs and monkeys have been studied for shorter periods.

The pharmacological manifestations of effect from DDT are principally loss of appetite, mild to severe tremors of central nervous system origin, convulsions and death. Tremors can be prevented or abolished by general anesthetics and narcotics.