Effects of Combinations of Pesticides on Reproduction in Mice

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Aldrin, dieldrin, chlordane and DDT were incorporated into the diet of mice for three generations. The individual experiments were designed to determine the effects in the young caused by absorption of a pesticide or a mixture of pesticides, by way of the placenta, by ingestion in mother's milk, and/or by ingestion with contaminated food. Evaluation of the accumulated data suggests the following:

Little or no effect was noted through five or six generations of mice fed toxaphene 25 ppm, chlordane 25 ppm, or DDT 25 ppm. Marked effects in regard to fertility, gestation, viability, lactation, or survival were noted in parent, or second generation and their offspring, fed: aldrin 25 ppm; dieldrin 25 ppm; aldrin 10 ppm plus chlordane 100 ppm; aldrin 25 ppm plus chlordane 25 ppm; aldrin 25 ppm plus DDT 25 ppm; and aldrin 25 ppm plus DDT 25 ppm plus chlordane 25 ppm. Significant but less marked effects were noted after feeding aldrin 3, 5, and 10 ppm; dieldrin 3 and 10 ppm; chlordane 50 and 100 ppm; DDT 100 and 250 ppm; aldrin 5 ppm plus chlordane 50 ppm; aldrin 5 ppm plus chlordane 25 ppm; dieldrin 10 ppm plus chlordane 100 ppm; aldrin 10 ppm plus DDT 100 ppm; aldrin 5 ppm plus DDT 25 ppm; and aldrin 5 ppm plus DDT 25 ppm plus chlordane 100 ppm plus DDT 25 ppm plus chlordane 25 ppm. Significant but less marked effects were noted after feeding aldrin 3, 5, and 10 ppm; dieldrin 3 and 10 ppm; chlordane 50 and 100 ppm; DDT 100 and 250 ppm; aldrin 5 ppm plus chlordane 50 ppm; aldrin 5 ppm plus chlordane 25 ppm; dieldrin 10 ppm plus chlordane 100 ppm; aldrin 10 ppm plus DDT 100 ppm; aldrin 5 ppm plus DDT 25 ppm; and aldrin 5 ppm plus DDT 25 ppm plus chlordane 100 ppm plus DDT 25 ppm plus chlordane 25 ppm. Significant but less marked effects were noted after feeding aldrin 3, 5, and 10 ppm; dieldrin 3 and 10 ppm; chlordane 50 and 100 ppm; DDT 100 and 250 ppm; aldrin 5 ppm plus chlordane 50 ppm; aldrin 5 ppm plus chlordane 25 ppm; dieldrin 10 ppm plus chlordane 100 ppm; aldrin 10 ppm plus DDT 100 ppm; aldrin 5 ppm plus DDT 25 ppm; and aldrin 5 ppm plus DDT 25 ppm plus chlordane 100 ppm plus DDT 25 ppm plus chlordane 25 ppm. Significant but less marked effects were noted after feeding aldrin 3, 5, and 10 ppm; dieldrin 3 and 10 ppm; chlordane 50 and 100 ppm; DDT 100 and 250 ppm; aldrin 5 ppm plus chlordane 50 ppm; aldrin 5 ppm plus chlordane 25 ppm; dieldrin 10 ppm plus chlordane 100 ppm; aldrin 10 ppm plus DDT 100 ppm; aldrin 5 ppm plus DDT 25 ppm; and aldrin 5 ppm plus DDT 25 ppm plus chlordane 100 ppm plus DDT 25 ppm plus chlordane 25 ppm. Significant but less marked effects were noted after feeding aldrin 3, 5, and 10 ppm; dieldrin 3 and 10 ppm; chlordane 50 and 100 ppm; DDT 100 and 250 ppm; aldrin 5 ppm plus chlordane 50 ppm; aldrin 5 ppm plus chlordane 25 ppm; dieldrin 10 ppm plus chlordane 100 ppm; aldrin 10 ppm plus DDT 100 ppm; aldrin 5 ppm plus DDT 25 ppm; and aldrin 5 ppm plus DDT 25 ppm plus chlordane 100 ppm plus DDT 25 ppm plus chlordane 25 ppm. Significant but less marked effects were noted after feeding aldrin 3, 5, and 10 ppm; dieldrin 3 and 10 ppm; chlordane 50 and 100 ppm; DDT 100 and 250 ppm; aldrin 5 ppm plus chlordane 50 ppm; aldrin 5 ppm plus chlordane 25 ppm; dieldrin 10 ppm plus chlordane 100 ppm; aldrin 10 ppm plus DDT 100 ppm; aldrin 5 ppm plus DDT 25 ppm; and aldrin 5 ppm plus DDT 25 ppm plus chlordane 100 ppm plus DDT 25 ppm plus chlordane 25 ppm. Significant but less marked effects were noted after feeding aldrin 3, 5, and 10 ppm; dieldrin 3 and 10 ppm; chlordane 50 and 100 ppm; DDT 100 and 250 ppm; aldrin 5 ppm plus chlordane 50 ppm; aldrin 5 ppm plus chlordane 25 ppm; dieldrin 10 ppm plus chlordane 100 ppm; aldrin 10 ppm plus DDT 100 ppm; aldrin 5 ppm plus DDT 25 ppm; and aldrin 5 ppm plus DDT 25 ppm plus chlordane 100 ppm plus DDT 25 ppm plus chlordane 25 ppm.

Microscopic examination of the organs and tissues revealed changes in the liver of all groups, and in the kidneys, lungs, and brains of most groups.
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