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### Insect pest - control of tobacco pests in Western Australia

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# INSECT *Pests* AND THEIR CONTROL

By B. A. B. EDWARDS, B.Sc. (Hons.), Entomologist

## CONTROL OF TOBACCO PESTS IN W.A.

**R**ECENT experiments have shown that most of the local insect pests of tobacco can be controlled by DDT either as a 0.1% spray or as a 2% dust. The insects commonly found attacking tobacco plants in South-Western Australia are the leaf miner, the stem borer (budworm), cutworms, loopers, grasshoppers and wireworms. Minor damage is also caused by a variety of beetles and other insects.

During the 1952-53 growing season, in co-operation with officers of the Tobacco Branch of the Department of Agriculture, an experiment was carried out at Manjimup to compare the effectiveness of various insecticide treatments against the major insect pests of the district.

The insecticides were first applied one week after planting out and thereafter at equal intervals during the remainder of the growing period (approximately four months). The effectiveness of three and five applications of each insecticide during the season was tested. Dusts were applied with a hand rotary duster and sprays with a knapsack spray pump. Application rates varied from 10 to 30 lb. per acre for dusts and 16 to 48 gallons per acre with sprays depending on the size of the tobacco plants.

The following table summarises the results of the experiment in which a total number of 8,950 leaves were individually examined. The results were divided into leaf miner damage and damage caused by other chewing insects.

Treatment.	Average No. of Leaf Miners per leaf.	Per cent. leaves damaged by other insects.
1. Control—no treatment	2.20	25.8
2. 50 per cent. lead arsenate dust three applications	1.29	18.1
3. 50 per cent. lead arsenate dust five applications	1.16	15.6
4. 2 per cent. DDT dust—three applications	0.83	12.2
5. 2 per cent. DDT dust—five applications	0.42	7.7
6. 0.1 per cent. DDT spray—three applications	0.42	9.8
7. 0.1 per cent. DDT spray—five applications	0.28	5.9

The results of this experiment have been statistically analysed and will be published elsewhere.

These results show that DDT both as a 2 per cent. dust and a 0.1 per cent. spray was superior to 50 per cent. lead arsenate dust while the spray treatments of DDT were slightly better than the dust application.

A similar experiment was carried out during the 1953-54 season to compare aldrin and dieldrin with DDT. Although



detailed results are not available, the indications are that DDT was superior to both of these insecticides.

### RECOMMENDATIONS

From the results of the experiment it is considered that four applications of a 0.1 per cent. DDT spray should give a good control of leaf miners and other chewing

insects. These applications should be spaced evenly over the tobacco growing season with the first spray applied approximately one week after planting out. The amount of spray used should vary between 16 to 48 gallons per acre depending on the size and development of the plants.

As an alternative treatment between 10 and 30 lb. per acre of a 2 per cent. DDT dust (four applications) may be used.

Sprays can be applied with a knapsack spray although a low-volume boom spray may be used while the plants are small. Powders are best applied with some type of mechanical duster.

### Grasshoppers.

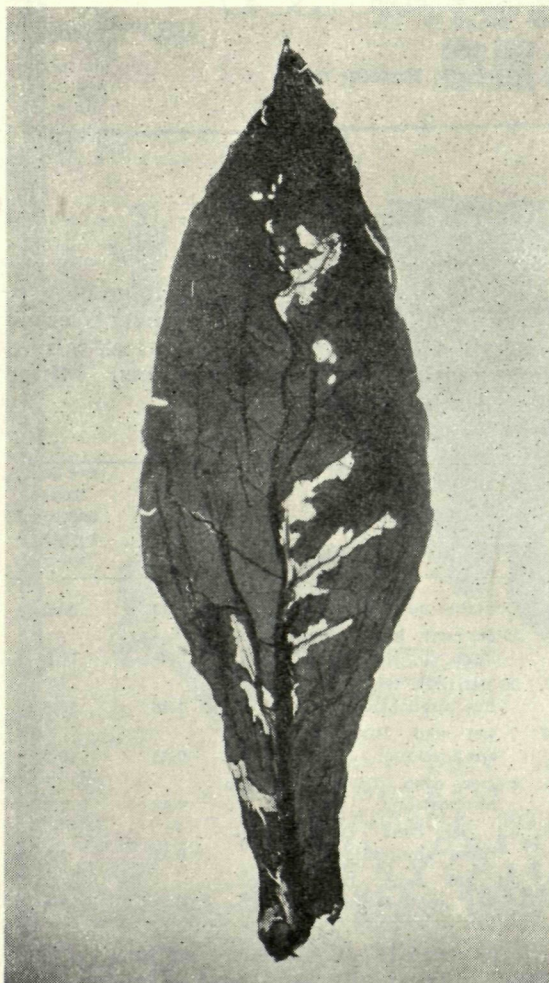
Several species of grasshopper have been found eating tobacco crops in Western Australia. In trials it has been found that these can be controlled by spraying (to a depth of about a chain) the grassland or bush adjacent to the crop with a 0.1 per cent. dieldrin spray. If grasshoppers are found to be already in the crop 0.1 per cent. dieldrin sprayed on the butts of the plants will give effective control.

### Wireworms.

No tests for the control of wireworms have yet been carried out in Western Australia but new insecticides have been used with promising results in other tobacco-growing areas and it is hoped that trials with these materials will be carried out in the near future.

### ACKNOWLEDGMENTS

The work here reported has been carried out under the direction of the Government Entomologist (Mr. C. F. H. Jenkins), for which acknowledgment is given. Thanks are due to the officers of the Tobacco Branch for their help and co-operation during trials and experiments at Manjimup.

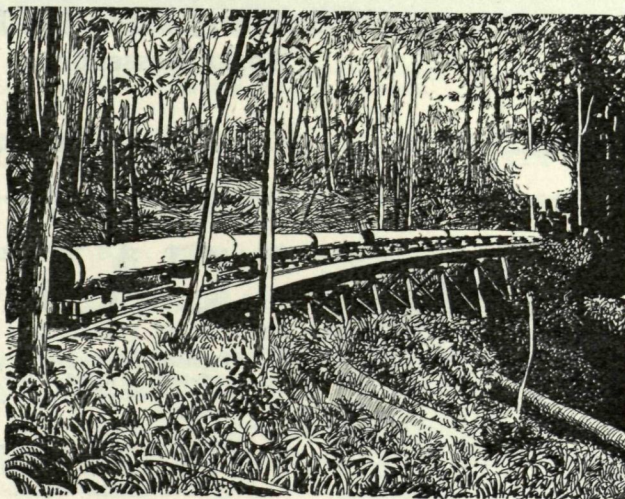
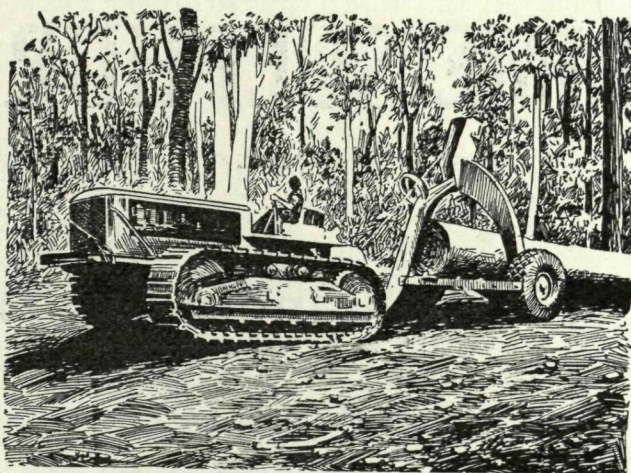


A tobacco leaf badly damaged by leaf miner





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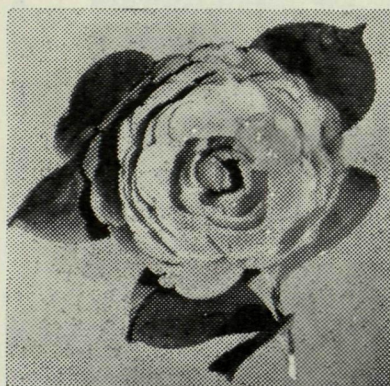
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