

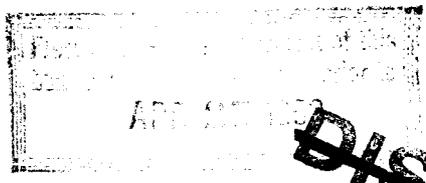
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Control of the
Orange Tortrix
in Oregon

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DISCARD

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Control of the Orange Tortrix

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The orange tortrix has been a greenhouse insect pest for several years in Oregon and has been a pest of oranges in California for many years. Early in 1947 it began to appear in numbers on various cane fruits in Multnomah County. During 1948 field control of the larvae of this moth was worked out and growers who treated their plants as directed escaped injury to their fruit. Samples of fruit from treated fields were analyzed for chemical residue so that a safe and reliable control program could be devised.

The Insect

The larvae of the orange tortrix are yellowish green "worms" with brown heads. The larvae are one-sixteenth of an inch long at the time of hatching and are an inch long when full grown. The larvae feed in the new, tender terminal leaf growth on their host plants where they web the leaves slightly together. When the berries ripen, some of the worms leave the terminal shoots and enter the base of the berries to feed on the inside of the fruits. They have been found in fruit of blackberries, Boysens, Logans, and Youngberries, but have not been observed in raspberry fruits in fields. As the pickers deposit raspberries in their picking baskets, the larvae are disturbed and drop from the leaves on a strand of silk. The pickers contact the silken strands and carry them with the attached larvae to the boxes of fruit. Thus the tortrix larvae get on the fruit and are carried to the canneries where their presence is objectionable.

The orange tortrix declined in numbers after 1948 so that it was scarce in 1950 to 1952. It may return, so berry growers and others should watch for it in the spring of the year.

This insect overwinters in Oregon as both large and small larvae beneath such shelters as dead leaves caught on the thorns of the canes, in galls on the canes, and in other places protected from rain.

The orange tortrix' eggs are laid in flat masses on the smooth canes and on the bottom side of some of the leaves. The pupae are found among webbed leaves on the host plant and in debris. There are several generations of the tortrix each year. Due to the uneven age of the overwintering larvae, the following generations are mixed so that eggs, adults, larvae, and pupae may generally be found in infested crops at any one time during the summer.

Note: In addition to the orange tortrix, the larvae of the oblique-banded leaf roller may be on some of the cane fruits. The large larvae of the oblique-banded leaf roller may be distinguished by their black heads from the brown-headed tortrix larvae. See Experiment Station Circular of Information 352 for oblique-banded leaf roller control by use of DDT.

Note: This publication is revised from and is to supersede Circular of Information 426, now out of print.

Hosts

The orange tortrix has been found feeding outdoors in Oregon on raspberry, Loganberry, Youngberry, Boysenberry, and Himalaya blackberries. It may have other outdoor hosts, as it feeds on many greenhouse plants.

Distribution

The tortrix in 1947 was known to be in a half mile square area located 2 miles southwest of Gresham. By the fall of 1948 it had spread in Multnomah County north to the Columbia River, westward to Portland, and eastward to a line from Troutdale to Pleasant Home. In Clackamas County, tortrix larvae spread as far east as Dodge Park and as far west as 2 miles west of Clackamas. No tortrix larvae were found south of a line through Clackamas and Damascus. Growers within or near the area of infestation would be wise to examine their cane berries closely after a few leaves have unfolded in the spring.

Field Examination

If tortrix larvae are present in the spring or summer they will be in the bud tips or webbing the edges of the leaves. In 1948 the presence of any tortrix larvae in a field in the spring was sufficient cause for recommending treatment. Such procedure would be justified as a means of preventing the increase in tortrix population, particularly in areas where growers had found numerous tortrix the preceding season. Tortrix larvae are not easy for growers to find in the fields unless careful examinations are made at not longer than monthly intervals in the spring in all parts of the field.

Control Measures

During the fall of 1947 and the season of 1948 the following timing of applications of the chemical TDE (Rhothane) was very effective in controlling the orange tortrix on cane berries. The insecticide may be applied either as a dust or as a spray. It should be used at the rate of either 40 pounds per acre of a 5 per cent TDE dust or at the rate of 150 to 180 gallons per acre of a spray mixture containing 1 pound of the 50 per cent wettable powder to 100 gallons of water. If the spray is used it should be directed upward so that the underneath sides of the leaves are thoroughly wetted.

Spring application

When the first leaves are fully open the tortrix larvae break their winter rest and feed on the new foliage and buds. This period in 1948 was May 5 to 15. Before that time some larvae were not yet feeding and after that time some larvae were entering the inactive pupa stage. In the spring the grower has fewer leaves to contact than he would have later in the summer, so spring is the ideal time to control the tortrix. TDE is not compatible chemically with lime sulfur. Consequently, the spring application of TDE should be applied at least 10 days after the lime sulfur spray.

Summer application

If a summer dust or spray treatment is necessary, it should be applied in the period 10 to 20 days before harvest time to avoid having excess chemical residue on the harvested fruit. This period will vary for the different kinds, since raspberries ripen first in the spring followed by Logans, then Boysens, and finally Himalaya blackberries. Not more than one pound of the 50 per cent TDE to 100 gallons should be used in the summer treatment.

TDE in amounts greater than recommended, when applied to infested plants in the summer, may reduce the number of natural tortrix parasites and cause a chemical residue problem. TDE is very effective for orange tortrix control and has considerable residual value. It should not be applied at stronger rates than suggested above and it should not be necessary to apply it more than twice a season and then only in severely infested fields.

Control Summary

Time	Chemical and dosage	Notes
Spring.	5% TDE dust at the rate of 40 pounds per acre or 1 pound of 50% TDE wettable powder per 100 gallons of water. At least 150 gallons per acre of spray should be applied.	Apply in early May when first leaves unfold. Use 2 pounds of TDE 50% wettable powder to 100 gallons of water in severe infestations.
Summer.	5% TDE dust - 40 pounds per acre or 1 pound of 50% TDE wettable powder per 100 gallons of water. At least 180 gallons per acre of spray should be applied.	Apply 10 to 20 days before fruit picking time. Do not use greater amounts than those recommended.