PEACH LEAF CURL

by

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This disease affects the leaves, twigs, blossoms and fruit of the peach tree and sometimes causes severe injury by depriving the tree of a large percentage of the leaves in the midst of the growing season. Varieties of the flowering peach also are very susceptible to this disease.

Symptoms

On Leaves.—The most noticeable symptom consists of the thickening and distortion of the leaves. The leaves become very much curled and deformed. At first the diseased leaves are yellowish, then reddish in color, later turning silvery-grey with the maturing of the spores on the leaf surface, then yellow and brown to almost black as the leaves die and dry up. The leaf symptoms are more conspicuous than those on the twigs and fruits and are usually the only ones to attract attention.

On Twigs.—In some cases the young shoots also are infected, resulting in much shortened and deformed twigs. Severely diseased and deformed twigs usually die by the end of the first season.

On Flowers and Fruits.—Both flowers and fruits are occasionally attacked and deformed, but since the leaf curl symptom is usually the most abundant and the most conspicuous, the diseased flowers and fruits are seldom noticed.

Damage Caused by Leaf Curl

Although the twigs, blossoms and fruit are sometimes infected by the leaf curl fungus, it is chiefly the leaves that show the most direct effect of attacks by this disease. Before midsummer the diseased leaves die and dry up, becoming yellow, then brown or much darkened in color. Since the diseased leaves die early in the summer, there is a tendency for the trees to force a new crop of leaves the same season. Successive attacks of this disease summer after summer, with loss of the first crop of leaves and forcing of a second crop, causes failure to produce fruit and, if uncontrolled, may eventually result in the death of the tree. In case of young trees in a new orchard, a single season's attack may kill the trees if no preventive measures are used.
Nursery stock may be severely attacked and may not survive transplanting if not properly sprayed or dipped before being shipped out by nurserymen.

Life History

Since feasible control measures depend upon the life history of the causal fungus, it is necessary to understand the essential features of the life cycle before one can appreciate the reasons for any particular spray procedure.

The causal fungus produces spores on the surfaces of diseased leaves. These spores are mature at or before midsummer. They are scattered by the winds and presumably lodge on the twigs, especially on the newly forming buds which will produce the leaves and flowers the next spring. Here the spores remain in a dormant condition like particles of dust clinging to the buds and twigs. Early next spring when the buds begin to swell and burst, exposing the very young leaves folded in the bud, the hidden spores germinate and infect the young leaves, sometimes before they are out of the bud.

The fact that the young leaves become infected so early makes it necessary that control measures be applied before the buds swell because after the leaves are infected, it is too late to control the disease.

Control

Since the spores are present on the buds all winter and infect the leaves as they begin to emerge from the buds, it follows that a killing spray applied to the twigs and buds at any time during the winter before the buds swell will kill the spores clinging on these parts and thus prevent infection. Since in western Oregon the winters are likely to be quite rainy, it frequently happens that growers put off spraying for peach leaf curl until toward spring, and then find that bad weather prevents their applying the spray until it is too late to get good control. For this reason it is advisable to spray early in the dormant season and thus avoid the danger of waiting too long. The spray program may be summarized as follows:

SPRAY PROGRAM FOR PEACH LEAF CURL IN THE ORCHARD

(1) Spray once with Bordeaux, 12-12-100, after the leaves are off in the fall and preferably not later than December.

(2) Use the best of materials in making up the spray.

(3) Do a thorough job. Cover every bud.

(4) If at all possible, spray on a clear day so that the spray may dry on the tree before it rains.
CONTROL PROGRAM FOR PEACH LEAF CURL ON NURSERY STOCK

(1) If spraying is practiced, use the same program as given above for orchards, but be sure (a) that the leaves are off before spraying, and (b) that every twig and bud is thoroughly covered.

Since nursery stock is planted very close in the row and the rows are close together, it is difficult to spray effectively. Consequently, it is advisable to dip rather than spray.

(2) Dipping.—The most practical and effective method for nurserymen, after digging the stock, is to dip it in a tank of Bordeaux mixture.

Since nursery stock is not always dug in time to dip in December, as suggested for spraying, it may be dipped later provided it is done while the stock is still completely dormant. After dipping, the stock should be thoroughly dried under cover before exposing to rain.

(3) Keep Bordeaux fresh.—In order to keep Bordeaux mixture in the dipping tank fresh for successive dippings, common sugar should be added at the rate of one-eighth ounce for each pound of copper sulphate in the mixture. For example, if a 200-gallon tank of 12-12-100 Bordeaux is used, it would require 3 ounces of sugar to preserve the 200 gallons of the mixture. (200 gallons of 12-12-100 Bordeaux would contain 24 pounds of copper sulphate. It requires 1 ounce of sugar for each eight pounds of copper.) A 500-gallon tank of 12-12-100 Bordeaux would require seven and one-half ounces of sugar. (See Oregon Experiment Station Bulletin 393 for preparing sprays.)

MISCELLANEOUS SUGGESTIONS

(1) Avoid spraying when the wind is blowing. Spraying on a windy day is likely to result in poor coverage and consequently poor control. Thorough coverage is essential.

(2) Nothing is to be gained by picking off diseased leaves after they appear in the spring. It is then too late.

(3) It is useless to spray or dust after the leaves come out and the disease shows up.

(4) Growers make a fatal mistake by waiting until the buds begin to open before spraying.