

EXCHANGE
JUL 25 1927

THE QUARTERLY BULLETIN
OF THE
(STATE) PLANT BOARD
OF MISSISSIPPI

VOL. 7

APRIL, 1927

NO. 1

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PUBLISHED BY
STATE PLANT BOARD OF MISSISSIPPI
A. & M. COLLEGE, MISSISSIPPI

Entered as second-class matter July 9, 1921, at the post office at
A. & M. College, Mississippi, under the Act of June 6, 1900.

onies and determine the best methods of destroying them. The case should be reported and specimens sent at once to the State Plant Board, at A. and M. College, and bulletins and other information will be sent immediately. If possible, the nearest inspector will make a personal investigation and advise control measures.

Peach Leaf-Curl

By H. H. Wedgworth, Associate Plant Pathologist

Peach leaf-curl is probably one of the oldest diseases of the peach. It attacks the peach and a few of its derivatives, such as the nectarine and the peach almond. It has also rarely been reported on other fruits. Certain varieties show greater susceptibility to the disease than others. Seedling peaches show marked susceptibility. The Elberta and Carmen are said to be quite susceptible to the disease.

The disease is found throughout the world wherever peaches are grown. It seems to be more serious in cool regions that are either near large bodies of water or have a heavy annual rainfall. It seems to be more prevalent in the northern part of Mississippi than in the southern.

The losses from this disease in America are said to be about three millions of dollars annually. The damage is due to the loss of leaves and to the killing of twigs. The loss of leaves in spring, followed by a forcing of a new crop of foliage the same year, lowers the vitality of the tree. The defoliation may cause the tree to fail to set or hold a crop of fruit and repeated defoliation for several seasons may result in the death of the tree.

Symptoms: The first evidence of the disease in the spring may be observed shortly after the leaves begin to unfold. The leaf blade becomes thickened and puckered along the mid-rib, causing the leaf to become curled. (Fig. 8). The diseased portion of the leaf becomes yellowish and is usually tinted with red. The diseased leaves

of certain varieties, such as the Elberta, may become distinctly reddish. The leaf is thickened and becomes brittle, and finally takes on a silvery appearance over the upper surface. The affected leaves finally die and fall from the tree. A new crop of foliage is then formed from the dormant buds.

Affected twigs exhibit a marked swelling and are somewhat shorter than normal. The disease usually attacks only the current year's growth, but sometimes it

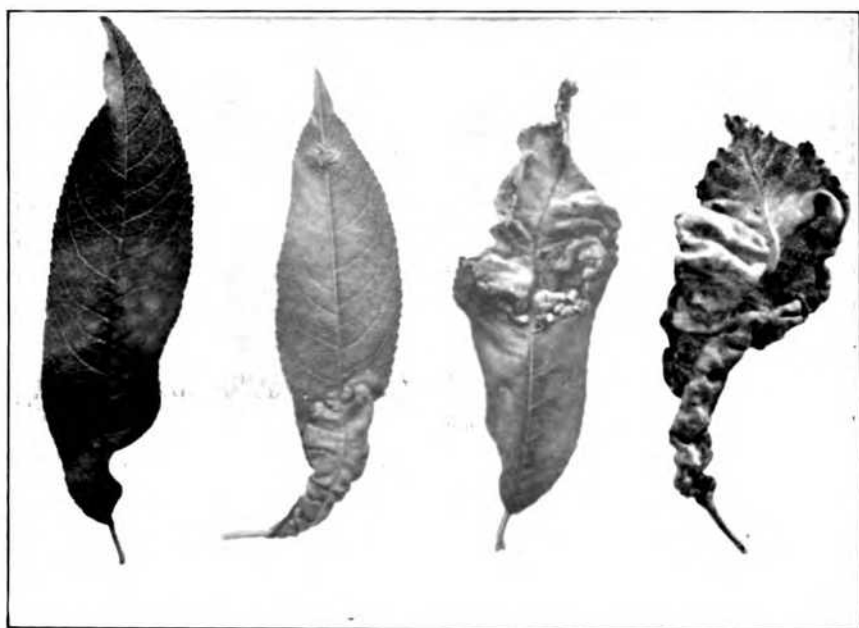


Fig. 8. Typical appearance of peach leaf-curl.

extends down the side of the previous year's growth, forming a swollen ridge. Severely infected twigs usually die, but the growing tip may develop a healthy shoot, leaving an enlarged canker at its base. An exudation of gum may accompany the lesions on the twigs. Generally, the yellow, curled foliage and finally the leafless twigs, followed by the development of new leaves, are the most striking symptoms of the disease.

Cause: Peach leaf-curl is caused by a fungus known as *Exoascus deformans*. The mycelium or vegetative part of the fungus grows between the cells of the leaf, stimulating them to an abnormal increase in size and number, and robbing the leaf of its green color. The fungus produces its spores or seeds in little sac-like structures on the surface of the leaves. These spores are discharged before the leaves fall and lodge among the hairs on the bud scales, where they remain dormant until the following spring. When the buds begin to unfold, the spores germinate and penetrate the young leaf tissues.

Environmental conditions play an important part in the development of the disease. A cold, wet period following a warm spring is said to be most favorable for the disease. As already pointed out, peach leaf-curl is more severe near large bodies of water. This is probably due to the high humidity in these regions. Heavy dews do not seem to be of sufficient duration to exert a marked influence on the development of the disease, while heavy rainfall is very conducive to its development.

Control: One thorough application of any good fungicide during the winter will control peach leaf-curl. Ordinarily, lime-sulphur solution of standard Baume test of 32 degrees at a strength of 1 to 15 or 1 to 20 is effective. Since, however, San Jose Scale is usually present in Mississippi orchards, it is usually necessary to use the fungicide at scale strength, which is 1 part of the lime-sulphur concentrate to 7 parts of water. Bordeaux mixture will control peach leaf-curl, but does not have any noticeable effect on San Jose Scale. Fall applications seem to be just as effective as spring applications. The applications must be made before the buds begin to swell in the spring.

Never spray more than once for this disease, as it is a waste of time and materials; and do not spray for leaf-curl after the leaves are expanded, for such an operation is useless and dangerous.