1991

G91-1101 Peach Leaf Curl and Related Diseases

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G91-1011

NebGuide

Published by Cooperative Extension, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln

Peach Leaf Curl and Related Diseases

The identification, causes and control of peach leaf curl and related diseases are discussed.

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Peach leaf curl is a common and widespread disease of peaches. In Nebraska it is found wherever peaches are grown, but it is usually not severe in the drier areas of western Nebraska. The disease is favored by the milder, wetter climate of eastern Nebraska.

Although leaf curl is principally a disease of peaches, nectarines also can be infected. Related fungi of the *Taphrina* genus cause similar diseases such as plum pockets on plums and leaf blisters on oak, maple, and elm.

Symptoms

Peach leaf curl, caused by the fungus *Taphrina deformans*, is easy to recognize. The most characteristic symptom is the curling and crinkling of the leaves as they unfold in spring (*Figure 1*). Usually, the entire leaf is affected, but sometimes only small areas are involved. In addition to the curling, diseased leaves are thickened and often turn red or purple.

Figure 1. Severe peach leaf curl symptoms on peach.

As the season progresses, the diseased leaves turn gray and appear powdery. This is the result of the fungal pathogen producing spores on the leaf surface. Eventually, the leaves turn yellow or brown and are prematurely cast.

This disease also may occur on the fruit, blossoms, and young twigs. Diseased fruits are distorted, swollen, and exhibit discolored areas on the surface. These areas usually are wrinkled and lack the normal peach fuzz. Infected fruits seldom remain on the tree until harvest. A severely

diseased tree does not yield well and is subject to winter injury.

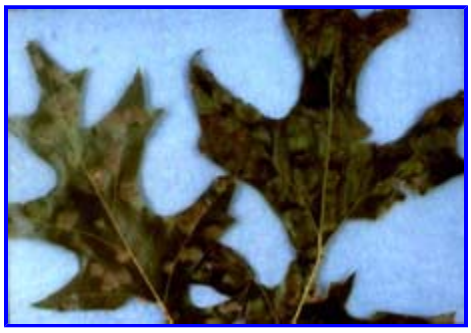
Plum pockets, a disease caused by *Taphrina communis*, causes similar symptoms on the leaves and causes the plums to become distorted and puffy (*Figure 2*). This disease is not considered a serious problem in most cultivated plums. Wild plums, however, are highly susceptible. If necessary, the same control procedures used to prevent the disease in peaches may be used to minimize this disease in plums.

Figure 2. Plum pockets caused by *Taphrina communis*

Leaf blister of oak, maple, and elm, caused by the fungi *Taphrina caerulescens*, *Taphrina sacchari*, and *Taphrina ulmi*, respectively, causes bulges or depressions on the leaf surface (*Figure 3*). Severe leaf curling also may occur. Chemical control of leaf blisters is not warranted or economically justified in most situations.

Cause

Figure 3. Leaf blister symptoms on oak leaves. (*Photo courtesy P. Flynn, Iowa State University*)



The spores of the *Taphrina* fungus are produced on the surface of diseased leaves and are washed or blown onto twigs and leaf buds. When these buds break open in the spring, the spores come in contact with the young, unexpanded leaves. When environmental conditions are cool and wet, the spores germinate and infect the leaf tissue.

Infected cells do not develop normally due to the secretion of growth regulating chemicals by the fungus. This results in abnormal cell division and enlargement giving the leaves a curled and crinkled appearance. Only expanding leaves are susceptible to infection.

Control

Fortunately, peach leaf curl is one of the easiest fruit diseases to control. In most years, leaf curl can be effectively prevented with a single application of an appropriate fungicide (*Table I*). Because infection occurs when the buds begin to swell, the fungicide must be applied during the dormant season. In Nebraska this can be done in the fall, after the leaves have dropped, through late winter.

Remember, for effective disease control the fungicide must be applied at the proper time, and the tree must be thoroughly covered with the fungicide spray. When applying any fungicide, be sure to read the label and follow instructions to the letter. Heed all cautions and warning statements. The plant to be treated must be listed on the label of the product to be used.

No criticism is intended of fungicides not listed, nor is endorsement given by the University of Nebraska to those listed.

Table I. Fungicides[1]; for the control of leaf curl diseases.
Lime sulfur Chlorothalonil (Bravo, Daconil, Multi-Purpose Fungicide) Bordeaux mixture Fixed copper (Kocide 101, Top-Cop Tribasic, Liquid Copper Fungicide) Ferbam (Carbamate WDG) Ziram
[1]Not all of these products are available at the garden center.

File G1011 under: PLANT DISEASES
D-7, Fruits
Issued February 1991; 7,500 printed.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Elbert C. Dickey, Director of Cooperative Extension, University of Nebraska, Institute of Agriculture and Natural Resources.