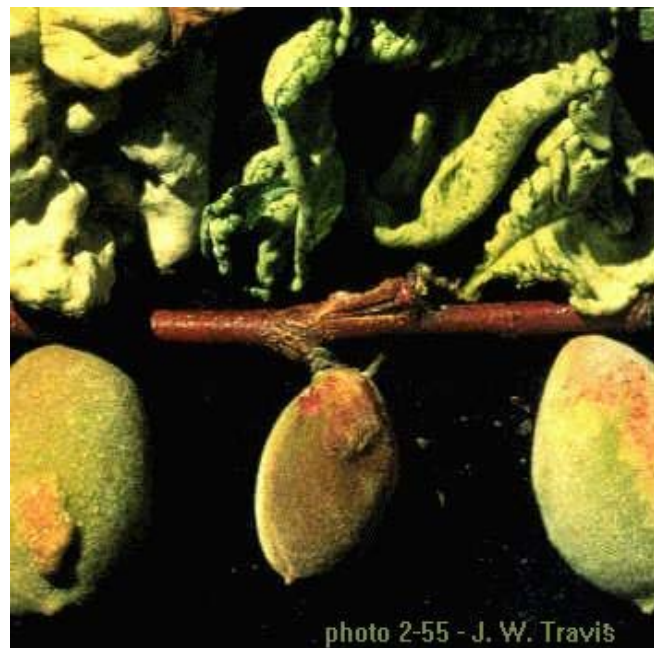


Peach Leaf Curl

Taphrina deformans

I. Introduction: Peach leaf curl is a fungus disease that, under the right conditions, can cause severe early defoliation and crop loss on nearly all peach and nectarine cultivars. Because of weather factors and good grower management practices in most years, however, the disease often causes little or no significant damage or loss. For this reason, the destructive potential of leaf curl is frequently underestimated to the point where important control measures may be forgotten or delayed.

II. Symptoms: As the name of the disease implies, the most common and striking symptom of leaf curl occurs on the foliage. Infected leaves are severely deformed and often display a variety of colors ranging from light green and yellow to shades of red and purple. The fungus causes the meristematic cells at leaf margins to proliferate quickly and randomly, which results in the leaves becoming variously wrinkled, puckered, and curled (photo 2-54). As these infected leaves mature, naked asci containing ascospores of the pathogen are produced on the surface giving them a dusty appearance, after which the leaves turn brown, shrivel, and drop from the tree. Many infected fruits drop early and go unnoticed;



those that remain may become crooked at the stem end like a small yellow squash, while others develop reddish to purple, wart-like deformities on the fruit surface (photo 2-55).

III. Disease Cycle: The pathogen occurs commonly almost wherever peaches are grown, and overwinters as blastospores in protected crevices in the bark and around the buds. Primary infections are the most damaging and occur during the early spring from bud swell, when the bud scales loosen, until the first young leaves are fully emerged from the bud. Infections on young peach leaves occur at temperatures of 50 to 70 F (10-21 C). Little infection occurs below 45 F (7 C). The incidence of infection is greatest when rains wash the overwintered spores into the bud and cool temperatures lengthen the time that the emerging leaves are exposed to the pathogen, before they are fully expanded and can resist penetration by the fungus. When temperatures following bud swell are warm and early leaf development is rapid, infections rarely become established, even when spring rains occur.

IV. Monitoring: Treatments for leaf curl are not effective after infections occur or after symptoms appear. Monitoring during bloom is done largely for the purpose of assessing the effectiveness of the control program and planning for next season. Monitor young leaves on sample trees for early foliar symptoms (photo 2-54) and record the incidence of leaf curl on sample trees.

V. Management: In most areas of the eastern U.S., leaf curl can be controlled with one well-timed fungicide application, either in the autumn after 90% of the leaves have fallen, or in the spring before bud swell. All cultivars are susceptible to leaf curl to some degree, although Redhaven and cultivars derived from Redhaven are more resistant to leaf curl than Redskin and cultivars derived from Redskin. If leaf curl is severe, it is important to maintain tree vigor by thinning more fruit than normal, reducing drought stress with irrigation, and applying extra nitrogen fertilizer.

TEXT PREPARED BY P. W. STEINER AND A. R. BIGGS

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