



Stone Fruit IPM for Beginners

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Chapter 12

Peach leaf curl

William Shane, Michigan State University Extension

Peach leaf curl

Taphrina deformans (Berk.) Tul.

Hosts

Peach, nectarine

Time of concern

Pre-bud burst in spring and late fall.

Damage, symptoms, disease cycle

The pathogen infects young, undeveloped tissue of leaves and fruit. Infection occurs in spring under extended cool, wet conditions. Infections can occur at the first hint of swelling. Infected leaves curl and blister, leaving them severely deformed. Blisters may become discolored, ranging from white, light green, red to purple. Severely infected leaves eventually shrivel and fall to the ground.

Infected fruit either drop prematurely or remain on the tree and develop red blisters or wart-like deformities on their surfaces. The pathogen persists on the tree as a white, yeast-like growth easy to overlook.

IPM steps for beginners

Providing fungicide protection before buds start to swell in early spring is key for managing peach leaf curl. A limited number of peach varieties are immune to peach leaf curl, but most of these are not of sufficient quality for commercial fruit production. Peach varieties with showy (large, colorful) bloom tend to be more susceptible than non-showy types to peach leaf curl. However, fungicide coverage is needed for all varieties except those with immunity.

A fungicide spray can be applied in late fall after approximately 50 percent leaf fall or in early spring before any bud swell starts. The effectiveness of the fall spray depends on the coverage, type and concentration of fungicide used, and the amount of rainfall during winter. A fall and spring application of fungicide may be necessary to prevent peach leaf curl under spring conditions especially favorable for infection.



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Peach leaf curl symptoms on peach leaves. Affected leaves feel thick and rubbery and will eventually drop prematurely.



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Peach leaf curl symptoms on peach leaves. Affected areas can range from white to purple.

Orchards severely affected by peach leaf curl may lose and regrow leaves. Such orchards may need more care—e.g., irrigation, sufficient nitrogen—to help the trees survive winter if severe, especially if the trees are in marginal health.

Effective fungicides include chlorothalonil, ziram and copper materials. See fungicide labels and university management guides for recommended rates. Reduced control of peach leaf curl with copper fungicides, reported from New Zealand, has not yet been reported in Michigan. Rotate fungicides, especially if copper fungicides are being used routinely for bacterial spot management.

Ready for more precision

Peach leaf curl infections occur in spring when wetting periods over 10 hours occur under cool conditions (46 to 53 degrees Fahrenheit) with rainfall greater than 0.5 inch. These rather specific conditions may not occur every spring, which explains why some years peach leaf curl does not show up on untreated trees.

Applying fungicide in fall is preferred over spring since poor spraying conditions in spring may prevent an application in time to prevent infection. During cool springs, infections can continue after bud swell if weather conditions are in the conducive range. Under such conditions, a fungicide application can be helpful even after the start of bud swell to prevent future infections.

Summer fungicide applications for brown rot control may provide some suppression of peach leaf curl for the following season. In low crop years or in young orchards when brown rot sprays are omitted, peach leaf curl problems can be worse in the following season.

The time between infection and first symptoms ranges from nine days under warm conditions to nearly a month in cool springs.



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Peach fruit severely infected with peach leaf curl. Affected areas are generally dark red, raised, and very bumpy.