



Stone Fruit IPM for Beginners

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Chapter 8

Bacterial spot

William Shane, Michigan State University Extension

Bacterial spot

A bacterial disease caused by *Xanthomonas*, bacterial spot is an important disease caused by *Xanthomonas arboricola* pv. *pruni* (XAP), formerly *Xanthomonas campestris* pv. *pruni*.

Hosts

Peach, nectarine, apricot and plum.

Time of concern

Leaf and green twig infection begins in early spring, plus fruit infections start after shuck split until pit hardening in early summer.

Damage, symptoms, disease cycle

Affected trees have fruit spots, leaf spots and twig cankers. Fruit symptoms include pitting, cracking, gumming and water-soaked tissue. Fruit infected by bacterial spot are more susceptible to other fruit diseases such as brown rot and rhizopus, as well as infestations by insects. Severe leaf spot infections can cause early defoliation. Severe defoliation can result in reduced fruit size and sunburn and cracking of fruit. Early defoliated trees can be less vigorous and more prone to winter damage. Bacterial spot lesions on fruit are darker than those of peach scab, which are greenish-brown, sometimes fuzzy and not pitted. Bacterial spot-infected leaves develop angular black lesions in the angles between two leaf veins, with some varieties developing yellow tissue around lesions and more resistant varieties having only black lesions.

The pathogen (XAP) overwinters in diseased twigs, which may develop a black tip symptom during spring green-up. The black tip symptoms are the result of small, somewhat inconspicuous, half-inch to 3-inch water-soaked, gummy spring cankers that girdle twigs causing tip dieback. Water from rain or dew wash bacteria from spring cankers to infect green tissue through natural openings such as stomata and hydathodes, resulting in small areas of water-soaked tissue. Older leaves develop more resistance to infection. The fruit are susceptible to infection beginning when they emerge from the shuck and become more



Bacterial spot infection on Japanese plums.

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Fruit pitting due to early bacterial spot infection.

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Black tip on peach twig due to bacterial spot infection the previous season.

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resistant at pit hardening. Bacterial multiplication and spread is favored by wet and warm (65 F to 95 degrees Fahrenheit) conditions. Infection is favored by sandy sites and wind-blown sand.

IPM steps for beginners

On sandy, windy sites that are prone to bacterial spot, choose varieties with more disease resistance. Fresh market peach varieties with more resistance include Biscoe, Contender, Harrow Beauty, Harrow Diamond, Starfire, John Boy, Loring, Messina, Glenglo and PF9A-007. Moderate resistance peaches include Allstar, Canadian Harmony, Coral Star, PF25, PF15, PF17 and Redhaven. Peaches that are more susceptible include Suncrest, Elberta, Fayette, Flavorcrest and Halehaven. More resistant processing peaches (non-melting flesh) include Venture, Goldnine, Vulcan, Vinegold and Virgil. More susceptible processing peaches include Babygold 5 and Babygold 8. Japanese and pluot plums tend to be more susceptible than European plum varieties.

On sandy sites, suppress blowing sand with the use of sod strips between trees and use gravel or other dust-suppressing methods on nearby dirt roads. A windbreak on the windward side of your orchard can help reduce bacterial spot problems.

Chemical control is used by commercial growers with some success, but it takes multiple applications and is generally not practical for backyard gardeners. Compounds available for use on peaches and nectarine include copper or oxytetracycline (Mycoshield and Fireline). Oxytetracycline is generally considered the most effective bactericide and less prone than copper to cause damage to foliage. For the latest information on rates and timing, contact an Extension tree fruit educator.

Ready for more precision

Bacterial spot frequently occurs when leaves are congested with water due to environmental conditions such as high humidity and dew, alternating rainy and sunny warm weather, and sandy soils with fluctuating water content. Under such situations, bacterial spot lesions on leaves may have a water-soaked halo that can be seen when the leaf is backlit by sunlight.

Bacterial spot infections may show glistening appearance due to dried bacterial growth on the lesion surface. This is a sign the interior infection has been very active since the last rain.



Range of bacterial spot leaf symptoms, some with only necrotic spots, some with leaf tissue yellowing.



Extreme gumming of peach fruit due to early bacterial spot infection.