***Disease Profile* – Bacterial spot on Stone Fruit**

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Bacterial spot caused by *Xanthomonas arboricola* pv. *pruni* is one of the most common diseases of stone fruits in the eastern United States. Susceptibility to this disease varies by *Prunus* species and variety, with peach, nectarines, tart cherries, apricots, and Japanese plums being the most susceptible. American and European plums are among some of the least susceptible.

Above, **A**: Bacterial lesions coalesce on this peach and crack the fruit
Above, **B**: Black bacterial lesions on this apricot are indicative of older lesions

Impact and Considerations

With severe infections on a susceptible cultivar, large sections of the canopy may abscise and weaken the trees. Several consecutive years of near or complete defoliation may reduce the yield and vigor of a tree.

Severe fruit infections will crack the fruit and expose the interior to rots. If brown rot establishes itself in one of these cracks, it may spread to nearby and otherwise healthy fruit.

Severe leaf infections do not always indicate that all the fruit will be severely infected. The reverse scenario is also true as symptom severity is species and variety specific.

Symptoms and Signs

Bacterial spot infects leaves, twigs and fruit of susceptible trees. The first symptoms in spring are watery lesions toward the midrib of leaves that gradually enlarge and darken with age. Often the center of individual lesions will become necrotic and fall out, creating a shot hole symptom. An example of this can be seen below on a sweet cherry leaf:

With more severe leaf infections, the leaves will typically abscise.

Bacterial lesions on twigs are classified as spring or summer cankers, or as black tip. Summer cankers appear as minute cankers on new green shoots and will later develop into spring cankers. Spring cankers enlarge in the early spring and ooze provides primary inoculum. Black tip is apparent in late winter when the terminal bud will not enlarge and will appear black and sunken, with a black canker that can extend several centimeters down the twig.

Fruit lesions begin as water soaked lesions that expand and darken with age. Numerous lesions will coalesce and crack the fruit.

Epidemiological aspects

Xanthomonas arboricola pv. *pruni* overwinter in summer cankers and black tips. Infection periods on the spring are dependent on the weather, and require sufficiently warm temperatures of 24°C (75.2°F) combined with spring rains. The earliest infection events are late bloom and every few weeks after petal fall. Warm rains during the season are also conducive for sporadic infection events. Bacteria from established lesions can be spread by rainwater as well as fruit rubbing together in the wind. A dramatic increase in secondary infections can be seen after violent summer storms.

Above: Bacterial lesions on nectarine, which display some minor variation in color from fruit lesions on other *Prunus* species.

What can you do about Bacterial Spot?

If you have *Bacterial Spot*…

- **Cultural management**

  - *Prune tree canopies to facilitate rapid drying, which lessens the duration of infection cycles.*
  - *Proper fertilization prevents excess formation of susceptible young leaf tissue or weakened trees.*

- **Chemical / organic management**

  - *Oxytetracycline applications at bloom and several weeks thereafter can limit the amount of diseased fruit at harvest. In addition to Oxytetracycline, applications of fixed copper at low rates have been helpful in reducing the incidence of bacterial spot.*

If you want to avoid *Bacterial Spot*…

- **Cultural management**

  - *Care should be taken to ensure that all new planting stock was not taken from an orchard that is already infested with bacterial spot.*

- **Chemical / organic management**

  - *Autumn applications of fixed copper has been very successfully used to cut down on the overwintering inoculum. These applications can also be made in the early spring to prevent bacterial infections of newly emerging leaves from inoculum sources such as cankers. Management programs that have early season applications for leaf curl will also substitute for dormant copper sprays for bacterial spot. It is important to note excessive copper applications can result in symptoms that can be mistaken for bacterial spot.*

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