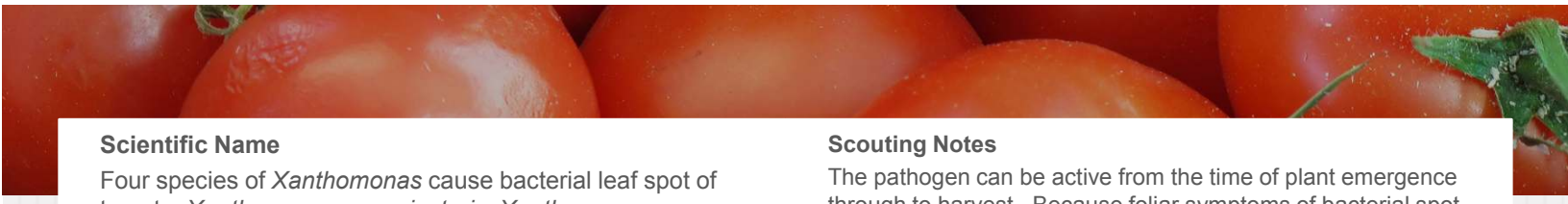
THE OHIO STATE UNIVERSITY DEPARTMENT OF PLANT PATHOLOGY

BACTERIAL LEAF SPOT OF TOMATO



Scientific Name

Four species of *Xanthomonas* cause bacterial leaf spot of tomato: *Xanthomonas euvesicatoria*, *Xanthomonas vesicatoria*, *Xanthomonas perforans* and *Xanthomonas gardneri*

Host Crops

Tomato, Field; Bell Pepper

Identification

Infections on seedlings:

- Originate from seed
- Small, greasy water-soaked spots (1/8 inch) on leaflets

Infections on plants:

- Greasy water-soaked spots on leaflets
- Older spots are dry and brown and often surrounded by yellow halos
- Spots increase in size to form large irregular dead spots
- Spots are most often observed on the entire surface of fully expanded leaves but may also appear on the stem and flower buds
- Severe infections may cause the plant to lose its leaves

Infections on fruit:

- Small, greasy water-soaked spots on green fruit that become slightly raised and enlarged (1/4 inch)
- Older spots are irregular in shape, light brown to black, slightly sunken and have a scabby surface texture

Often Confused With

Bacterial speck, Bacterial canker

Favorable Environmental Conditions

Optimal conditions for bacterial leaf spot are high moisture, high relative humidity (≥ 80%) and warm temperatures (75-90 °F).

Scouting Notes

The pathogen can be active from the time of plant emergence through to harvest. Because foliar symptoms of bacterial spot and speck are identical, fruit symptoms should be used to distinguish between the two diseases. Unlike bacterial canker, bacterial spot produces lesions on the entire leaf surface. However, caution should be taken in making an identification based on location of lesions as co-infections of the two diseases can occur. Greenhouse seedlings and plants in the field should be monitored weekly for early symptoms. Symptomatic plant tissue should be sampled and submitted for plant disease diagnosis.

Thresholds

No thresholds have been established for this disease however tolerance is low due to marketability and peeling issues.

Management Notes

Start with clean seed- Purchase certified, disease-free seed or sanitize seed with hot water, sodium hypochlorite (bleach) or hydrochloric acid.

Start with clean transplants- Scout plants daily and destroy plants once a plant disease diagnostic laboratory has confirmed the disease. Apply one or two preventative copper fungicide applications and one application of streptomycin to the seedlings before transplanting them into the field.

Start with clean equipment and tools- Clean and disinfect all tools and farm equipment prior to working with the transplants or plants. Good sanitation practices are critical to prevent contamination and cross contamination of plants by the bacterial leaf spot pathogen.

Start with a clean field- The bacterial leaf spot pathogen can survive in the field as long as there is infected crop debris present. Rotate with a non-host crop before re-planting the field with tomato. Avoid rotations with crops in the same family as tomato (pepper, eggplant and tobacco) for 3-4 years. Plant into a field free of volunteer tomato plants.

Use best cultural practices- Use management strategies that maintain reduced-stress growing conditions. Provide plants with adequate but not excessive nitrogen, improve the organic matter content of the soil through the use of composted green or animal waste or cover crops, avoid overhead irrigation if possible and avoid performing crop maintenance operations while plants are wet.

Use crop protectants- Field applications of copper fungicides, applied early and often, may slow bacterial leaf spot development over the growing season.

Tomato Diseases Fact Sheets are also available at: www.VegetableDiseaseFacts.com