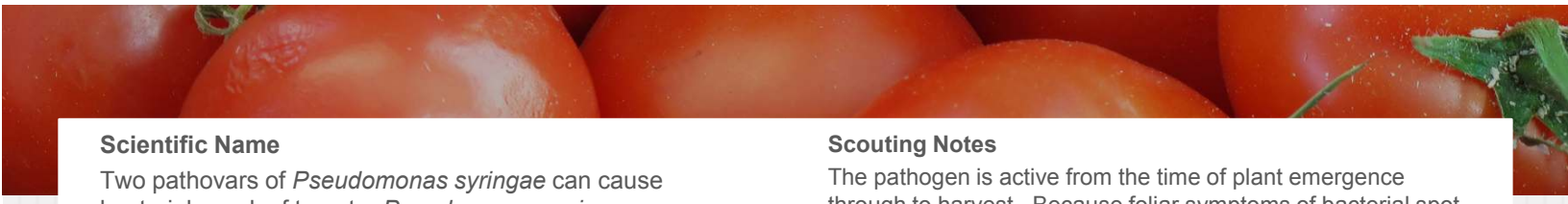
THE OHIO STATE UNIVERSITY DEPARTMENT OF PLANT PATHOLOGY

BACTERIAL SPECK OF TOMATO



Scientific Name

Two pathovars of *Pseudomonas syringae* can cause bacterial speck of tomato: *Pseudomonas syringae* pv. *tomato* and *Pseudomonas syringae* pv. *syringae*.

Host Crops

Tomato, Field; Bell Pepper

Identification

Infections on seedlings are rare and can't be distinguished from those caused by bacterial spot.

Infections on plants:

- Greasy water-soaked spots on leaflets
- Leaf spots are brownish black and initially surrounded by yellow halos
- Spots increase in size to form large irregular dead spots
- Spots may also appear on stems
- Severe infections may cause the plant to lose its leaves

Infections on fruit:

- Black sunken stippling appears early on green fruit
- Spots are small (<1/16 inch) and look like "pin-points" or "specks" on the fruit
- Spots are superficial and can be easily scraped off the fruit surface with a fingernail

Often Confused With

Bacterial spot, Early blight

Favorable Environmental Conditions

Optimal conditions for bacterial speck are high moisture, high relative humidity (≥ 80%) and cool temperatures (64-75°F).

Photos courtesy of Kelly Ivors, North Carolina State University and Margaret McGrath, Cornell University.

Scouting Notes

The pathogen is 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. Bacterial speck disease progression is slowed during hot weather. Plants in the field should be monitored weekly and 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 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 important to prevent contamination and cross contamination of plants by the bacterial speck pathogen.

Start with a clean field- The bacterial speck 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 speck development on fruit. Copper sprays are not needed when temperatures are above 80°F as the pathogen is inhibited at high temperatures.

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