

Bacterial Speck of Tomato¹

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Bacterial speck of tomato, caused by *Pseudomonas syringae* pv. *tomato*, is a disease of increasing importance to Florida fresh-market tomato production. Although the disease was reported in 1933 in the Bradenton area, there have been few reports of the disease in Florida, possibly because this problem is easily confused with the more common bacterial spot disease. A serious outbreak of bacterial speck was discovered in the winter of 1977-78 in the Homestead area and was subsequently reported in other parts of the state, including a serious outbreak in St. Lucie County in 2003. More recent occurrences have been reported.

SYMPTOMS

Tentative field diagnosis of bacterial speck is best accomplished by careful inspection of fruit symptoms. Speck lesions on green fruit are small, **sunken**, black spots surrounded by **darker green** haloes (Figure 1). On ripe fruit, spots are dark brown to black, superficial flecks (Figure 2). Foliage symptoms of bacterial speck are much more difficult to distinguish from other diseases. The leafspots are small, black lesions surrounded by prominent chlorotic (yellow) haloes (Figure 1). These haloes are

quite large, averaging twice the size of the necrotic tissue they surround.

Lesions in the stems are dark brown to black and shaped like elongated ovals.



Figure 1. Speck lesions and leafspots on green fruit.

EPIDEMIOLOGY

Bacterial speck is favored by cool, moist environmental conditions. The virulent bacteria are spread mechanically and by wind-driven rain. The

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Figure 2. Speck lesions on ripe fruit.

disease will develop rapidly at 75°F. However, disease development is readily apparent at 63°F. At 89°F pathogen populations are so severely depleted that typical symptoms are not evident.

The longer that tomato leaves remain wet, the more likely bacterial populations will build to levels sufficient for production of visible leaf damage. Six hours of continual leaf wetness will promote bacterial speck development. Measurements of 11-13 hours per day of continuous leaf wetness in Florida are not uncommon. Past outbreaks occurred under conditions of unusually high winter rainfall and low temperature. When these conditions occur in the future, bacterial speck epidemics may be anticipated.

Pseudomonas syringae pv. *tomato* may survive the summer in Florida in very low numbers on the surface of volunteer tomato plants. Survival in soil is unlikely.

CONTROL

Tomato residues and volunteer tomato plants should be destroyed to eliminate possible bacteria on plant surfaces. Since *Pseudomonas syringae* pv. *tomato* has a narrow host range, avoidance of tomato double-cropping should be helpful in controlling this pest.

At present no chemicals are registered specifically for bacterial speck. Pesticides applied for bacterial spot control, should also provide some bacterial speck control. Mancozeb and copper tank mixes have been applied for many years in Florida for control of bacterial spot of tomato.