

# Bacterial Speck of Tomato

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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 (see Plant Pathology Fact Sheet, PP-3). A serious outbreak of bacterial speck was discovered in the winter of 1977-78 in the Homestead area and in 1992-93 in the Immokalee area.

## 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 (Fig. 1). On ripe fruit, spots are dark brown to black, superficial flecks (Fig. 2). Foliage symptoms of bacterial speck are much more difficult to distinguish from other diseases. The leaf spots are small, black lesions surrounded by prominent chlorotic (yellow) haloes. These haloes are quite large, averaging twice the size of the necrotic tissue they surround (Fig. 3). Lesions in the stems are dark brown to black and shaped like elongated ovals (Fig. 4).

## Epidemiology

Bacterial speck is favored by cool, moist environmental conditions. The virulent bacteria are spread mechanically and by wind-driven rain. The disease will develop rapidly at 75°F (24°C). However, disease development is readily apparent at 63°F (17°C). At 89°F (32°C), pathogen populations are so severely depleted that typical symptoms are not evident.

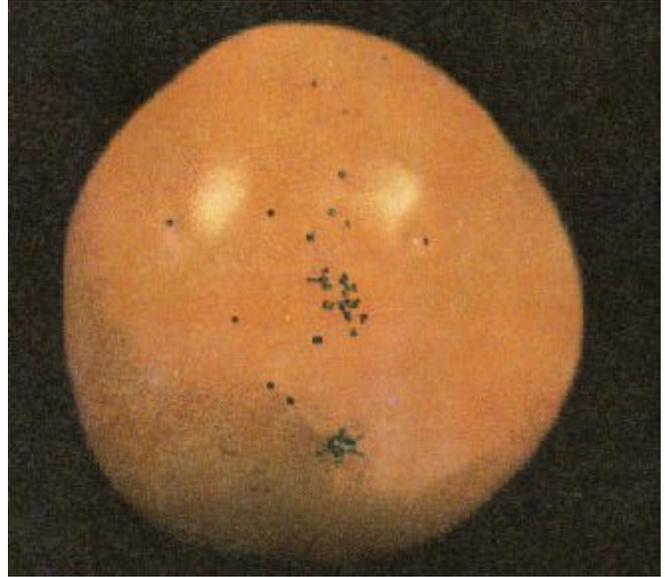
The longer that tomato leaves remain wet, the more likely bacterial populations will build to levels sufficient for production of visible leaf damage. Six hours of continual leaf wetness will promote bacterial speck development. Measurements of 11-13 hours per day of continuous leaf wetness in Florida are not uncommon. Outbreaks of bacterial speck in southern Florida have 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 during 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.

Fixed copper compounds are a mainstay in the management of bacterial speck. Most growers tank-mix fixed coppers with maneb or mancozeb when spraying for bacterial spot (See Plant Protection Pointer No.6). This tank-mix is probably more effective for control of bacterial speck as well. Make sure to destroy tomato volunteers and to minimize handling of tomato plants when they are wet.



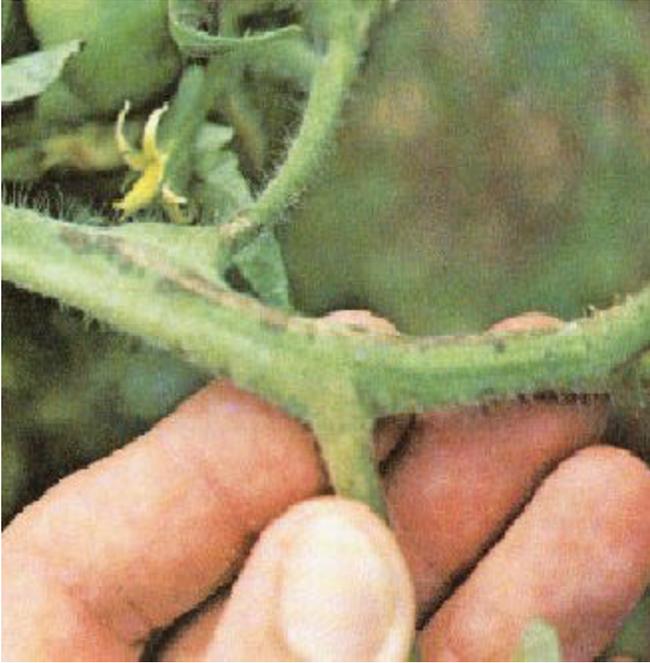
**Figure 2. Small, black, very superficial bacterial speck lesions in ripe tomato fruit.**



**Figure 1. Sunken bacterial speck lesions in tomato fruit.**



**Figure 3. Bacterial speck lesions in fruit and leaves; note prominent haloes around leaf lesions.**



**Figure 4. Lesions in tomato stems incited by *Pseudomonas syringae* pv. *tomato*.**