

Septoria Leaf Spot of Tomato

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Septoria leaf spot of tomato, caused by the fungus *Septoria lycopersici*, is one of the most common and destructive diseases of tomato in Virginia. The fungus can cause severe leaf spotting and defoliation is common following severe infection. Heavy leaf loss during wet seasons leads to sunscalding of fruit and failure of fruit to mature properly.

Symptoms

Numerous, small, watersoaked spots, which are the first noticeable characteristic of Septoria leaf spot, appear on the lower leaves after fruit set. Spots enlarge to a uniform size of approximately $\frac{1}{16}$ - $\frac{1}{4}$ inch in diameter. They have dark brown borders and tan or light colored centers. Yellow haloes often surround the spots. Severely infected leaves die and drop off. Septoria leaf spot is easily distinguished from early blight, another foliar disease of tomato, by the uniform, small size of the spots and the lack of concentric rings in the spots; however, Septoria leaf spot is sometimes confused with bacterial spot of tomato. The presence of fruiting bodies of the fungus, visible as tiny black specks in the centers of the spots, confirms Septoria leaf spot.

Favorable weather permits infection to move up the stem, causing a progressive loss of foliage from the bottom of the plant upward. Plants appear to wither from the bottom up. Loss of foliage causes a decrease in the size of the fruits and exposes fruit to sunscald. Spotting of the stem and blossoms may also occur.

Disease Cycle

Septoria lycopersici overwinters in old tomato debris and on wild solanaceous plants, such as ground cherry, nightshade, and jimsonweed. Seeds and transplants may also carry the fungus. The disease is favored by moderate temperatures and abundant rainfall. Spore production is abundant when temperatures are 60°-80°F



Fig. 1. Small, uniform, brown spots caused by *Septoria lycopersici* on tomato leaves. Chlorosis is often associated with the spotting. (Photo by R. C. Lambe)

(15.5°-28°C). Spores are easily spread by wind and rain. Infection occurs on lower leaves after the plants begin to set fruit.

Control

Cultural Control

- Dispose of crop refuse by plowing under or composting.
- Control weeds in and around the edge of the garden.
- Rotate tomatoes with cereals, corn, or legumes. A 4-year rotation is recommended where disease has been severe.

Chemical Control

- Apply fungicides on a preventative schedule before the disease first appears on the lower leaves. Begin sprays when the first fruits of the first cluster are visible after blossom drop. Apply fungicides every 7 to 10 days or more often when the weather is warm and wet. In home gardens the fungicides, chlorothalonil (e.g. Daconil 2787) or maneb (e.g. Maneb), can be used.

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- In commercial plantings, chlorothalonil (e.g. Bravo, Terranil) and maneb (e.g. Dithane Rainshield NT, Penncozeb) can be rotated with the systemic fungicide, azoxystrobin (e.g. Quadris), every 7 days. Alternating sprays is important in order to delay the development of resistant strains of the fungus to azoxystrobin. Refer to the current *Virginia Pest Management Guide for Home Grounds and Animals* (VCE Publication 456-018) or *Commercial Vegetable Production Recommendations* (VCE Publication 456-420) for details on fungicide application rates and timing.

Resistance

- No resistant cultivars are available.

Refer to the current *Virginia Pest Management Guide for Home Grounds and Animals* (VCE Publication 456-018), <http://www.ext.vt.edu/pubs/pmg/>, for details on the proper use of pesticides.

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