

LOUISIANA PLANT PATHOLOGY

DISEASE IDENTIFICATION AND MANAGEMENT SERIES



Tomato Leaf Mold

Passalora fulva

Leaf mold, caused by the fungus *Passalora fulva* (previously called *Fulvia fulva* or *Cladosporium fulvum*), is one of the most common diseases of tomatoes produced in greenhouses and high tunnels. In the Southern United States, tomato leaf mold can cause severe defoliation and yield losses to tomatoes produced in the field, especially during the spring and early summer. The disease develops rapidly during wet and humid conditions, spreading from lower to upper leaves and resulting in significant yield losses if it is left unmanaged (Figure 1).

Successful management of leaf mold requires early detection and accurate identification of the disease. Symptoms begin with yellow diffuse spots or patches on the upper leaf surfaces. As the disease progresses, these spots enlarge into yellow to light brown areas with undefined margins or edges (Figure 2). On the corresponding undersides of the leaves, olive green to brown mold growth (fungal spores) can be seen (Figure 2 and 3). This fungal growth is a key diagnostic feature of leaf mold on tomatoes.

Heavily infected leaves turn yellow, shrivel and may or may not drop prematurely, depending on the tomato variety and the severity of the disease. Flowers and fruit rarely are affected.

Warm temperatures (70-75 degrees F) and moderately high relative humidity (75-90 percent) are conducive to infection and disease development. Under these conditions, a large number of fungal spores are produced on the lower leaf surfaces and disseminated by wind, water, rain splash, tools and insects.

Contaminated seeds are thought to be the primary source of the fungus. In temperate climates or greenhouses, the fungus can survive on plant debris and in the soil as spores or resting structures (sclerotia) for up to a year.

The length of time that the fungus survives in the soil or on plant debris in the Deep South has not been determined, but moderate winter temperatures may allow spores and sclerotia to survive for more than a year in the South. Weeds, especially those in the nightshade family, also are a source of the fungus.



Figure 1. Leaf mold caused by *Passalora fulva* on commercially and home grown tomatoes. The disease develops rapidly, spreading from lower to upper leaves.



Figure 2. Leaf mold on a tomato leaflet. Yellow diffuse spots or patches are present on the upper leaflet surface and olive green to brown fungal spores are found on the corresponding underside of the leaflet.

Leaf mold control and management requires an integrated approach that includes the use of resistant varieties, cultural practices and fungicides. While there are several tomato varieties with resistance to the leaf mold fungus, most of these varieties are adapted to temperate climates and are not recommended for production in open fields in the Deep South. No variety has resistance to all 12 races of the fungus, and there are no heirloom varieties with resistance to leaf mold.

Seed companies label varieties with resistance to the leaf mold fungus using several abbreviations including Cf, Cf-2, -4, -9, -11 or Ff. Because the leaf mold fungus can be seed-borne, seed treatment with hot water is recommended. Consult the Louisiana Plant Disease Management Guide (LSU AgCenter Pub. 1802) for hot water treatment instructions.

Cultural practices that increase air flow through the plants, such as adequate row and plant spacing, sucker removal and mulching, will reduce humidity within the crop canopy, which can delay disease development and

spread. Overhead irrigation is not recommended, since leaf wetness promotes disease development. Greenhouse growers should try to keep relative humidity below 85 percent, use continuous fans to promote air circulation and avoid overhead irrigation.

After pruning and harvesting, plant debris should be removed from the field to reduce further spread of the disease and the buildup of the fungus in the soil. Planting tomatoes in the same location for two consecutive seasons is not recommended. Sweet corn, peas, beans, leafy greens and cole crops are good crops to plant in place of tomatoes.

Applying fungicides when symptoms first appear can reduce the spread of the leaf mold fungus significantly. Several fungicides are labeled for leaf mold control on tomatoes and can provide good disease control if applied to all the foliage of the plant, especially the lower surfaces of the leaves. Consult the Southeastern U.S. Vegetable Handbook for fungicides labeled for leaf mold control in tomatoes.



Figure 3. *Passalora fulva* growing on the underside of a tomato leaflet. This fungal growth is a key diagnostic feature of leaf mold of tomato.

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