Martin-Gatton
College of Agriculture, Food and Environment
Cooperative Extension Service

Plant Pathology Fact Sheet **PPFS-VG-52**

Leaf Mold of Tomato

Kim Leonberger, *Plant Pathology Extension Associate*
Nicole Gauthier, *Plant Pathology Extension Specialist*

Importance

Leaf mold affects both commercial and homegrown tomatoes, as well as some weeds in the Solanaceae family. This disease is most common in greenhouses and high tunnels, but it may also occur in fields and gardens under extremely humid conditions or when wet weather persists. Leaf mold only affects tomato leaves. While fruit are not affected, yield losses may occur when leaf loss is severe. Cultural practices and fungicides can be used to limit losses.

Symptoms

Leaf mold begins as pale green or yellow spots on upper leaf surfaces (Figure 1). Older leaves at the base of plants are often affected first. As spots develop, a green, velvet-like layer of fungal spores can be observed on the underside of leaves (Figures 1 & 2). Over time as disease spreads (Figure 3), entire leaves turn brown and shrivel resulting in a blighted appearance. Severe blighting and defoliation results in decreased plant vigor and yield loss.

Cause & Disease Development

Leaf mold is caused by the fungal pathogen *Passalora fulva* (formerly *Fulvia fulva* or *Cladosporium fulvum*). The pathogen can survive for up to 1 year in plant debris as conidia (spores) or mycelia (threadlike fungal body), or for several years in soil as persistent overwintering structures called sclerotia. Lower leaves are the first to become infected as spores splash into plant canopies. New infections can continue throughout the season as spores from infected leaves are carried on air currents or rain splash. The leaf mold pathogen is most active during the summer months when temperatures are above 70°F and foliage is wet due to high relative humidity (greater than 85%), rain, or dew.

Figure 1. Leaf mold of tomato symptoms begin as pale green to yellow spots on the upper side of leaves (white arrow). As leaf spots mature, sporulation can be observed on the underside of leaves (yellow arrow).
(Photo: Kenny Seebold, University of Kentucky)

Figure 2. Leaf spots develop a green, velvet-like layer of sporulation on the underside of leaves.
(Photo: Nicole Gauthier, University of Kentucky)

Figure 3. Leaf mold can spread throughout plants resulting in severe symptom development.
(Photo: Rebecca A Melanson, Mississippi State University Extension, Bugwood.org)

Disease Management

Disease management should focus on reducing leaf wetness and humidity. Cultural practices are critical to prevent disease onset. Conventional and organic fungicides can be used to manage infections, but they are often ineffective unless leaf moisture/relative humidity is reduced.

Cultural Practices

- Select resistant cultivars. Note that tolerance to tomato leaf mold can vary between cultivars depending on strains of the pathogen present.
- Space plants for increased air circulation and rapid drying.
- Prune and stake plants to improve air circulation.
- Remove weeds to encourage drying and air flow.
- Avoid the use of overhead irrigation.
- High tunnel and greenhouse growers should monitor and manage humidity levels throughout the growing season. If relative humidity exceeds 85% growers should:
  - Open high tunnel side walls or doors.
  - Turn on fans or ventilation.
- Remove infected leaves throughout the growing season.
- Clean and sanitize stakes and trellises before reuse.
- Remove all plants and debris at the end of the season. Do NOT compost diseased material.
- Deep till soil after harvest in fields and high tunnels.
- High tunnels and greenhouses should be cleaned and disinfested after harvest and again before installing new plants.

Fungicides

Preventative fungicides are recommended for greenhouse and high tunnel production, especially if environmental conditions are difficult to manage. Fungicide applications should begin when temperatures reach 70°F and humidity approaches 85%, or when first symptoms appear. Continue fungicide applications through the remainder of the season. Field producers and residential growers should apply fungicides only if disease develops.

Always read product labels carefully for application rates, directions, and restrictions. Not all products are labeled or approved for greenhouse or high tunnel use. The Kentucky Department of Agriculture considers high tunnels the same as greenhouses.

- Commercial growers can find information on fungicides in the *Vegetable Production Guide for Commercial Growers* (ID-36) and the *Southeastern U.S. Vegetable Crop Handbook*.
- Organic growers should consult the *Organic Commercial Spray Schedules for Field Production* series of publications available on the Plant Pathology Extension Publications website for fungicide recommendations.
- Homeowners should consult the *Small Acreage & Backyard IPM Guides* series for fungicide information or contact a county Extension agent for additional information and recommendations.

Additional Resources

Additional information can be found on the UK Plant Pathology Extension Publications webpage https://plantpathology.ca.uky.edu/extension/publications.

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