

Tomato Powdery Mildew

Leveillula taurica

EPMS 005

Quick Facts

- Tomato Powdery Mildew is caused by the fungus *Leveillula taurica*.
- Locally grown transplants are less likely to become infected with powdery mildew.
- Tomato plants in Northern Utah are usually not infected with tomato powdery mildew, unless the fungus was introduced on the transplants.
- Rally is the best fungicide for controlling powdery mildew infections. Timely application of sulfur is effective at controlling powdery mildew.

Symptoms:

The first symptoms occur on lower leaves as bright yellow spots that range from 1/8 to 1/2 inch in diameter (Figure 1). The spots enlarge and eventually turn brown. As infections progress, the entire leaf withers and dies but remains attached to the stem (Figure 2). There are no symptoms on the stems or fruit. However, with extensive loss of foliage, many exposed fruit will sunburn. Despite the name, powdery mildew, it is rare to find heavy sporulation of the fungus on leaves in Utah.



Photograph Courtesy: Sherman V. Thomson



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Figure 1. Yellow appearance of early powdery mildew infections on tomato foliage (both).

Powdery mildew of tomato, caused by the fungus *Leveillula taurica*, occurs infrequently in home gardens. However, the disease can be very devastating in commercially grown tomatoes where yield losses may exceed 50% in heavily infected fields. The extent of loss depends on environmental conditions, date of disease onset, and effectiveness of fungicide control. Hot, dry days with an occasional rainstorm are conducive to disease development.



Photograph Courtesy: Sherman V. Thomson

Figure 3. Field view of powdery mildew tomato plants; notice retention of infected necrotic leaves.

Causal Agent:

The fungus apparently does not overwinter outdoors in northern Utah and must be reintroduced each year on tomato transplants grown in Nevada or other areas of the Southwest where the fungus overwinters. Transplants from Florida, Georgia, and Texas have not been shown to carry the disease. Locally-grown transplants, if grown in a greenhouse free of the disease, are the best assurance of a healthy crop. Since powdery mildew spores are airborne and are blown north with prevailing wind currents, most plantings in northern Utah have low levels of disease by late summer. These late-season infections do not result in significant losses.

Control:

The use of healthy, locally-grown plants may eliminate the need for applying a fungicide later in the year. Begin applications of Rally or Quadris at first sign of disease and repeat about every 2 weeks or as necessary. Sulfur sprays or dusts are effective if complete coverage applications start early and are repeated every seven to ten days. Leaving

space at planting time for wheel tracks can reduce plant damage by ground equipment. Flowable sulfur may provide better protection than wettable sulfur because of the highly adhesive property and because it stays in suspension longer, thus preventing obstruction of spray nozzles.

When using transplants from areas where the fungus overwinters, applications of a fungicide should begin before any symptoms are apparent, usually in the first 10 days of July. Visual inspection of the lower leaves should be made on a weekly basis beginning in late June. When symptoms are seen, the fungicide program should be closely followed. Thorough coverage is critical for effective control, and repeated applications are necessary. Fungicides are usually not necessary when using disease-free transplants.

Sulfur may cause phytotoxicity (burning) if applied when temperatures exceed 95 F. Therefore, make applications during cool weather and in the evening. Some sulfur labels indicate that applications should not be made within 40 days of harvest if the tomatoes are to be canned in metal containers. Check with your buyer to determine if this precaution needs to be followed.

The following list of fungicides are labeled for control of powdery mildew of tomato.

Quadris Flowable 5.0 to 6.2 fl oz/ acre (see current label for timing and restriction information).

Rally 40W at 2.5-5 oz/acre (see current label for timing and restriction information).

Sulfur

Wettable powder-- Wilbur Ellis Red Top Spray Sulfur 97%, 6-10 lbs/acre; FMC-Kolo spray 81.25%, 7 lbs/acre, full coverage;

Home use: Lilly Miller Sulfur or Ortho Flotox
90%.

Dust-- FMC-Kolo dust or Wilbur Ellis Redtop

Ben-sul 60%, 40-55 lbs/acre, full coverage;

Home use: Lilly Miller Sulfur or Ortho Flotox

90%, dust to cover.

Flowable-- 1/2 - 1 gal/acre full coverage.

Dry Flowable 80%-- Sandoz Thiolux, 3-10
lbs/acre.

Information compiled and presented by:
Scott C. Ockey M.S. / Senior Research Associate
Sherman V. Thomson Ph. D. / Extension Plant Pathologist Emeritus

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Questions for Tomato powdery mildew samples

Grower Information

Name:

Address:

Farm Location:

Crop Information:

Origin of transplants (Geographic local, greenhouse or field grown):

Plant and Variety:

Source of irrigation water:

Irrigation type and frequency:

Soil type:

Fertilization and pesticide applications:

Fertilizer (units applied):

Insecticide applications:

Insecticide Name:

Target Pest(s):

Fungicide applications:

Fungicide Name:

Neighboring farms with host plants: yes/no

Are neighboring farms experiencing same disease: yes/no

Percent crop loss:

Recent environmental conditions experienced at affected location: