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Understanding Late Blight of Tomatoes

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This fact sheet explains the basics about late blight tomato disease and practical ways to control it.

What is late blight?

Late blight (*Phytophthora infestans*) is one of the most serious fungal diseases that can affect tomatoes and potatoes.

How is it spread?

Late blight is spread from infected transplants, volunteer potato or tomato plants, and certain weeds botanically related to tomatoes. Spores of this fungus can be airborne and travel great distances in storms. Rain deposits spores onto plants, causing infection. Late blight is favored by cool, wet weather and will cycle repeatedly if weather conditions are favorable.

What are the symptoms of late blight on tomateos?

Late blight symptoms include leaf, stem, and fruit lesions that have a water-soaked appearance. The lesions eventually turn brown and the plant looks like it has been frost-damaged or blasted by a blowtorch. Unlike early blight, which typically begins infection on the lower leaves of the tomato plant, late blight infections seem to move from the outside of the canopy inward (Figure 1).

Figure 1. Late blight infection of tomato plants. Lesions are found on the stem, and the foliage appears burnt.

Under favorable conditions, all parts of the plant can become infected. Complete infection of a tomato field can occur in a few days. Large rough, brown lesions appear on tomato fruits (Figure 2).

Are any tomato cultivars resistant to late blight?

Currently there are no tomato cultivars with complete resistance to late blight.

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Figure 2. Late blight infection of tomato fruits. Lesions are usually soft and are located on the top of the tomato fruit.

How can late blight be prevented or managed?

Since late blight favors wet, cool weather for infection, cultural practices have a relatively small effect on controlling this disease. Bottom-watering via drip irrigation will be beneficial. Plants should be spaced relatively wide within the row to facilitate air movement, and plants should not be handled when the foliage is wet.

Mulching

Mulching with plastic or an organic material will reduce the development of early blight more than late blight, but these diseases often work in tandem to destroy tomato plants. Staking or caging tomatoes will result in faster drying of the foliage. Before planting, inspect transplants for any symptoms of disease. Avoid planting tomatoes on sites that were previously in potatoes or close to potatoes. Sequential planting or planting several crops of tomatoes over time will reduce the risk of late blight destroying all tomatoes at once.

Spraying

Spraying fungicides is the most effective way to prevent late blight. For conventional gardeners and commercial producers, protectant fungicides such as chlorothalonil (e.g., *Bravo, Echo, Equus,* or *Daconil*) and Mancozeb (*Manzate*) can be used. Fixed copper products (*Kocide*) can be used by organic gardeners to prevent late blight infection. Read the label on any fungicide before application. For fungicides that target the fungus specifically, consult the *2009 Commercial Vegetable Production Guide.*

If conditions are favorable for late blight development, start a weekly spray application immediately after transplanting. Otherwise, apply protectant fungicides beginning at flowering for control of late blight and other tomato diseases.

What should be done if tomatoes have been infected by late blight?

Continue weekly spray applications to protect plants from further infection. Severely infected plants can be rogued and either buried or burned. Avoid composting diseased plants.

Rotate tomatoes with vegetables unrelated botanically to tomatoes or potatoes. Do not plant these sites with these groups of vegetables for two to three years. Avoid harvesting tomato fruits with visible disease lesions.

Are infected tomatoes safe to eat?

While unblemished fruit from infected plants is safe to eat, the fruit should not be held for any length of time. Also, infected fruit should not be canned or frozen because it can raise the pH of the canning solution and promote further growth of microorganisms.

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