

TOMATO LATE BLIGHT SHOWS UP IN VERMONT

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With our recent rainy weather and storms, I am not surprised we diagnosed late blight (*Phytophthora infestans*) in the UVM Plant Diagnostic Clinic last week. So far, it has been found in a garden and a high tunnel only on tomatoes, although this aggressive pathogen can also attack potatoes, depending on the strain of the organism. This destructive fungal-like organism was the cause of the Irish potato famine or the “Great Hunger” in the 1840s and if you have an Irish last name, you may be here as a result of your ancestors being among the million souls who left Ireland during the famine to search for a better life in America.



Large expanding brown lesions with whitish gray spores caused by *Phytophthora infestans* on tomato leaves. Photo: Meg McGrath, Cornell University

The pathogen cannot survive Vermont winters, but typically blows in on storm fronts from the south or gets introduced on infected transplants, as occurred in Vermont in 2009. Late blight symptoms can appear on foliage, stems and fruit. Leaf symptoms first appear as small, water-soaked areas that expand rapidly to form purplish blotches. The spots usually show up on the upper foliage first, since the spores ‘rain down’ during weather events. The disease can be hit or miss in an area, depending on where rain events have occurred. When humidity is high, rings of whitish spore-forming structures appear on the edges or undersides of the blotches. You can

place suspect tomato tissue in a plastic bag with moist paper towels overnight and check for these rings of spores. Infected fruit remains firm and may exhibit whitish spores during high humidity. Infected fruit should be destroyed and not be eaten or used for canning.

The pathogen likes cool moist weather, spreads rapidly by airborne spores and can quickly kill an entire field of tomatoes within a week. If the weather becomes hot and dry (80 degrees F with humidity less than 90%) the spread of the disease slows only to pick up again when the weather turns cool and wet.

If your tomatoes do not have late blight yet and you know it is in the area, you can protect them with an organic (copper-based) or conventional fungicide, being sure to spray weekly or according to the label to keep new tissue protected. If your plants already are showing symptoms of the disease, it is best to destroy the plants since rescuing them with fungicides is difficult, especially if the weather is conducive. The pathogen does not live on dead tomato plants, so cutting or pulling the plants will cause the spores to die. Leaving live infected plants in the garden increases the chances the tomatoes at your neighbors or the farm down the road will also get the disease, so be a good neighbor! Dead plants can be composted since the pathogen will not survive the winter, however, if you don't have an active compost pile that heats up, other tomato diseases on the plant may not break down. Rotation for this particular disease is not that important since the pathogen does not remain in our gardens, although rotation should be followed for the other tomato leaf spot diseases that show up every year. The best way to avoid the disease is to plant resistant varieties. There are several tomato varieties that are designated as resistant to late blight: 'Mountain Magic', 'Mountain Merit', 'Legend', 'Defiant PHR' and 'Plum Regal' have excellent resistance to late blight. 'Jasper', 'Red Pearl' and 'Matt's Wild Cherry' are small-fruited tomatoes with good resistance.



Fruit with late blight symptoms and whitish spores. Photo: Meg McGrath, Cornell University



Late blight on tomato leaf caused by *Phytophthora infestans*. Photo: Meg McGrath, Cornell University



Stem lesions on tomato with grayish white spores caused by *Phytophthora infestans*. Photo: Meg McGrath, Cornell University

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