

What to do for late blight this fall and next spring

Gerald Brust, IPM Vegetable Specialist and Karen Rane, Director of Plant Diagnostic Clinic

As everyone knows, we had an unusual outbreak of late blight in tomato and potato this year in the mid-Atlantic and the Northeastern U.S. This was due to two factors: unusually cool and wet weather in May and June (ideal conditions for late blight to flourish), and the unintentional introduction of the disease on infected tomato transplants sold through numerous retail outlets in the region. Late blight is caused by the fungus-like pathogen *Phytophthora infestans*. The pathogen causes severe blighting of the leaves and stems of tomato and potato plants. Tomato fruit can also be infected, resulting in brown discoloration and eventual decay. Potato tubers can become infected when sporangia are washed from lesions on stems and foliage into the soil.

What Now: This winter

Now that the growing season is over growers are wondering what should they be doing, or not doing, to be sure late blight does not overwinter and return next year to their fields. The good news is that in most areas of the United States, *Phytophthora infestans* will not survive in the soil without living plant host tissue. The pathogen has two ‘mating types’ which must be present together to produce oospores, the structures that can survive in the soil without a plant host. While testing is ongoing, currently it appears that only one mating type is present in the Northeast, so it is very unlikely that oospores of the pathogen will occur in our area.

The primary pathway for *P. infestans* survival is through infected potato tubers, either in storage or in the soil which become infected volunteer plants next spring.

Sanitation is therefore very important in the overall management strategy. No infected potatoes should be allowed to overwinter. Any volunteer plants that might be infected should be destroyed. Cull potatoes can be frozen, crushed or buried under at least 2 feet of soil. Potatoes that freeze or fully decompose will not carry the pathogen over the winter. **Things you DO NOT want to do are:** Leave tubers in the ground at harvest under just a few inches of soil, dispose of tubers in a compost pile that does NOT completely decompose or freeze, dispose of potato culls in large piles that do not freeze completely.

For the back-yard garden be sure to thoroughly incorporate vines and leaves into the soil. Composting will work, but the pile needs to heat up and be turned at least once to mix and aerate until it is fully decomposed. If you harvest potatoes do as thorough a job as possible.

Tomatoes will not carry late blight over the winter because freezing kills the whole plant. Tomato seed, **even from fruit that was infected with late blight, will not carry the pathogen.** Therefore, you can use your own seed or purchase seed to start next year’s crop without apprehension. Late blight will not survive on tomato stakes or cages. Other considerations: Although a few perennial weeds can become infected with late

blight none of their aboveground parts live through the winter and therefore they will not be sources of inoculum next spring. Greenhouses where tomatoes were grown and infected with late blight could allow survival of the pathogen if the tomatoes never freeze and the crop lives through the winter.

Next spring

Potatoes: If you had late blight symptoms in your field or garden, do not save tubers as seed to be planted next spring. Purchase certified disease-free potato seed from a trustworthy source. Consider planting varieties with some resistance to late blight, such as ‘Allegany’, ‘Elba’ or ‘Kennebec’. Inspect last year’s potato plot and any compost or cull piles for volunteer potato plants that might come up. If you find potato plants, pull them out and destroy them.

Tomatoes: If possible select disease-resistant varieties for some of your crop. There are three cultivars: ‘Mountain Magic’, ‘Plum Regal’, and ‘Legend’ reported to have some resistance to the disease. Growing your own transplants or purchasing from a reliable source will assure a good start to the season. Inspect all transplants for any cankers or leaf blight before planting.

Keep a close watch for late blight symptoms on your tomatoes and potatoes next year, especially if the weather is cool and wet, so that you can take action quickly if the disease occurs again. For commercial growers, applying preventative fungicides for late blight as part of a disease management program will help reduce losses if we see another significant late blight outbreak next year.