

Late Blight of Potato and Tomato in the Home Garden



Recognize the Symptoms!

Late blight appears on potato and tomato leaves a few days after periods of humid or rainy weather. Dark green water-soaked circular or irregularly shaped spots develop that may be ringed by a pale yellowish-green border. The lesions often appear first on the edge or tip of a leaf. The lesions enlarge quickly and turn brown. Under humid conditions, white fluffy mold (mycelia or fungal threads) will grow on the underside of infected leaves and produce spores. Spores can be produced in as little as 10 hours when humidity is high. Infected stems will develop dark lesions and fluffy white mycelia often where the leaves attach to the stem or at the growing point. Under dry conditions, the infected leaf tissues will dry up and the white mold disappears.

Underground tubers become infected when rain washes spores down through cracks in the soil. Late blight on infected tubers is a reddish-brown, granular dry rot that may extend up to 2 cm into the tuber. Infected tubers often break down after harvest due to secondary infections.

Tomato plants growing in your garden or in containers are also at risk of becoming infected with late blight. Green unripe tomatoes when infected develop firm, brown discolorations or streaked areas on the surface that can enlarge into brown, wrinkled leathery lesions. These are often found on the upper surface or sides of the tomato.



Late blight symptoms on potato stem



Late blight symptoms on potato leaf



White spores of the late blight fungus on the underside of a leaf

What is Late Blight?

Late blight (caused by the fungus *Phytophthora infestans*) was in large part responsible for the Irish potato famine in the late 1840's and continues to be an important potato disease today. The fungus has the ability to produce millions of spores during wet weather conditions. These spores can infect the plants in your garden after traveling with the wind from as far away as 80 km. Because this disease is so devastating, it is important that you recognize late blight and control it before your garden becomes a source of spores that can infect nearby gardens and commercial fields.



Late blight symptoms on tomato fruit



Late blight symptoms on tomato fruits

Potatoes and tomatoes are particularly susceptible to late blight. The fungus may also somewhat affect other members of the Solanaceae family, such as peppers, eggplant, petunia, bittersweet and hairy nightshade. Some potato varieties are less susceptible to late blight than others, but no variety is immune or resistant to the disease.

How to Prevent Late Blight

- Plant disease-free, certified seed potatoes. Certified seed can be purchased from garden supply centers or from a local seed potato grower.
- Plant healthy tomato plantlets or late blight resistant varieties of tomatoes.
- Water the soil underneath the plants and not the foliage. Plant your potatoes and tomatoes in well drained areas with maximum air flow.
- Plant your potatoes and tomatoes in a warm, dry, sunny area in order to promote strong plant growth and reduce the chance of late blight infection.
- Do not plant potatoes saved from last year's garden or ones sold at the supermarket for eating.
- Plant potatoes, tomatoes, bell pepper and eggplants in different areas of the garden as they all can be affected by late blight.
- Do not over-fertilize the plants. Excess nitrogen promotes dense foliage growth affecting air circulation around plants, and delays maturity.
- Hill soil up around the base of potato plants to protect against spores washing down through the soil and infecting the tubers.
- Visit your garden regularly and often. Scout tomato and potato plants for late blight lesions at least twice a week. Late blight grows quickly and can produce spores in a matter of days. Managing infections early reduces the risk of losing all your plants.

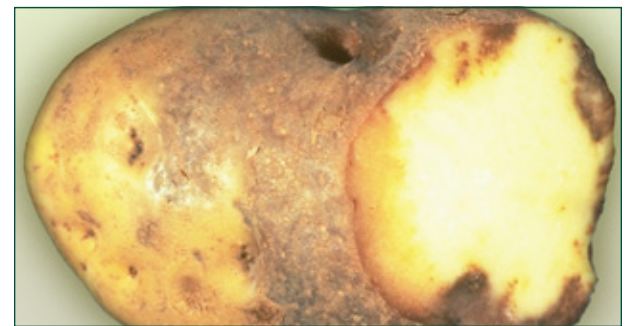
There are no products available that can cure a plant of late blight once it is infected. You may wish to apply a chemical protectant to the foliage to reduce late blight spore germination. Your local garden centre will have products that home gardeners can use to protect tomatoes, potatoes and ornamentals from the disease. Look for dusts or sprays that contain copper sulfate or zineb. Make sure the product is registered for use on the plant you want to protect. Always read the label before use and follow the label directions carefully. Always wear protective clothing and a mask when applying any chemical product.

What to do if you find late blight in your garden?

To reduce spore production and disease spread, remove all infected leaves, stems and tomato fruits from the plants daily. DO NOT leave discarded infected tissues on top of a compost pile or in a heap on the ground. Exposed infected tissues are capable of supporting spore development. Dispose of the infected plant parts either by placing them in a well-sealed plastic bag, by burying or covering them completely in a compost pile. This method may be effective to control late blight if the weather turns dry and progress of the disease has slowed.

If an entire potato plant becomes infected, the plant must be destroyed. Choose a dry, sunny day to remove all potato tops by standing on the hill with your feet around the stems and pulling on all stems at once. Take care not to expose the tubers. Place the foliage in a garbage bag and seal shut. The tubers can be safely left in the ground until harvest. Allow 2-3 weeks between pulling the potato tops and tuber harvest.

Unsure if you have late blight?



For positive diagnosis of late blight, send a sample to: Potato Development Centre
Department of Agriculture, Aquaculture and Fisheries
39 Barker Lane, Wicklow NB E7L 3S4

telephone: 506-392-5199 toll free: 1-866-778-3762
email: DAAF-MAAP@gnb.ca
www.gnb.ca/agriculture