



# Diagnostic Facts



Diagnostic Services  
Michigan State University

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[www.pestid.msu.edu](http://www.pestid.msu.edu)

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## Late Blight: Home gardener's FAQ's

Jan Byrne, Diagnostic Services

**L**ate blight is a disease that occurs periodically in potato production. Last year the disease caught a lot of tomato growers/gardeners by surprise when it caused significant disease on both potatoes and tomatoes. The disease caused significant foliar blighting, stem lesions, and fruit rot leaving many gardeners frustrated and dismayed. This year many gardeners are determined to grow a better tomato crop and are generating a lot of questions in their quest for the perfect tomato. Here are a few of the questions that I have been receiving.

**Q** - Will late blight be a problem in my garden again this year?

**A** – Unfortunately, we can't predict this with certainty. Last year there was an unusual combination of cool, wet weather combined with the presence of the late blight pathogen. These factors contributed to the significant disease outbreak. While we can't control the weather we can make efforts to limit the presence of the late blight pathogen.

Home gardeners should not plant potato seed pieces left from last year's crop. If "volunteer" potatoes sprout in your garden they should be removed and destroyed. Carefully inspect tomato transplants before buying them, do not buy any transplants that are not healthy! Agriculture inspectors in Michigan (MDA) and other states are being particularly diligent with their regular inspections of commercially grown transplants.

Efforts have been and continue to be made to educate growers and gardeners to identify symptoms of late blight. Make sure that you are familiar with the symptoms of the common tomato diseases.



Late blight on tomato. Division of Plant Industry Archive, Florida Department of Agriculture and Consumer Services, [Bugwood.org](http://Bugwood.org)

**Q** – What do the symptoms of late blight look like on tomato and potato plants?

**A** – The late blight pathogen can infect both stems and foliage of tomatoes and potatoes. Initially, symptoms are dark green, water-soaked areas. These areas quickly turn dark brown and the tissue is killed. In high humidity you might notice a fluffy whitish growth on the underside of the infected leaves. Lesions can grow rapidly in size causing significant defoliation and eventually plant death.

Tomato fruit and potato tubers can also be infected. Dark colored lesions develop where infection occurs. Lesions on tomato fruit have a greasy, gray coloration, this symptom is most noticeable on green tomatoes that have not yet ripened. Diseased potato tubers have sunken lesions that are irregularly shaped. Beneath the skin the potatoes are reddish and granular in texture.

***Late Blight symptoms on tomato fruit, foliage and stems***



Foliar symptoms. Meg Mcgrath/Cornell University via Reuters



Infected tomato fruit. Jan Byrne / MSU Diagnostic Services.



Typical tomato stem lesions. Meg Mcgrath/Cornell University via Reuters

## *Late Blight symptoms on potato*



Potato foliage symptoms. Howard F. Schwartz, Colorado State University, Bugwood.org



Infected potato stem. Eugenia Banks - Potato Specialist/OMAFRA

**Q** - What does crop rotation mean and why is it recommended?

**A** – Crop rotation refers to the practice of growing different (usually unrelated) crops in the same location in subsequent seasons. This practice is recommended as a disease management practice, amongst other reasons. Some pathogens form spores that can persist for long periods of time in the soil; over time the viability of these spores declines. Other pathogens persist in the soil on crop debris. A natural reduction in the number of surviving spores can occur by planting a non-host in the site where a disease problem previously occurred.

Note, the late blight pathogen is reported to overwinter in potato tubers but not in dead tomato debris. Crop rotation is helpful in reducing several tomato diseases and is not specific to late blight.

**Q** - Are there chemicals that I can use to prevent late blight?

**A** – Fungicides are used to prevent losses caused by plant pathogens. There are several fungicides available to home gardeners that are effective in preventing late blight. To be a prudent consumer you need to read the fine print on the product label while you are shopping. First, the product must be labeled for use on the crop (ex. tomatoes, potatoes, etc.). Second, look at the active ingredient(s) listed on the label. Products that contain chlorothalonil or etheylene bisdithiocarbamate (EBDC) will protect plants from infection. Depending on the particular manufacturer the trade names vary, these may be sold under trade names such as Daconil, Mancozeb, or Fungonil to name a few. These fungicides will need to be reapplied frequently, usually a 7-day interval is recommended. Refer to the product label for specific instructions.

Please note that once plants are diseased they should be removed and destroyed. They cannot be “cured” with fungicide applications and will serve as a source for further disease spread.

**Q** - Are there organic chemicals that can be used to prevent late blight?

**A** – Copper-based fungicides have some efficacy against the late blight pathogen. Some formulations (but not all) are organic. I recommend that organic gardeners check with the OMRI database ([www.omri.com](http://www.omri.com)) to verify whether or not a particular fungicide meets organic standards. As with the fungicides listed above, these products must be used preventatively to be most effective.

Q – Are late blight and early blight the same disease?

A – No, these are two very different diseases. Additionally, the names do not refer to the time of year in which they are likely to occur.



Early blight. North Carolina State University



Early blight on tomato Clemson University - USDA Cooperative Extension Slide Series, , Bugwood.org

Early blight causes dark lesions on the foliage that typically contain concentric rings.

Older leaves are generally more affected but the disease will progress up the plant. This is a very

common disease of tomato, most tomato gardeners have seen it before, although they may not have recognized

it as such.

Another common disease of tomato that gardeners should recognize is Septoria leaf spot.

This disease results in small lesions that are surrounded by yellow halos.

The center of the lesion may be somewhat grey in color with tiny dark flecks. Septoria does not cause fruit rot, but will produce significant defoliation, particularly later in the season.



Septoria leafspot. William M. Brown Jr., , Bugwood.org

Fact sheet designed by Jackie Smith, MSU Diagnostic Services.

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