

Late Blight of Potato

Late blight, caused by the fungus *Phytophthora infestans*, is an extremely serious potato disease that predisposes tubers to severe damage and storage losses.

Symptoms. Late blight is visible as pale green, water-soaked spots on the leaf's edges or tips. These circular to irregular lesions are often surrounded by a yellowish border that merges with healthy tissue. Lesions expand rapidly, taking on a purplish, brownish, or blackish color. During high moisture periods, lesions are often ringed with grayish white fungal growth. Foliar destruction can be severe, with large crop areas defoliated in as little as one week from the time of initial symptom development.

Late blight-infected tubers have brown, dry, sunken lesions that cover granulated brown or tan tissue up to 1/2 inch deep. Secondary infections, caused by bacteria or other fungi, can result in the slimy breakdown of additional tuber tissue in storage.

Persistence and Transmission. Late blight most commonly occurs under cool, wet conditions. Moist conditions (caused by rain, irrigation, or dew) and nighttime temperatures of 50 degrees to 60 degrees F often favor disease development.

Under these conditions the fungus will produce reproductive structures that can be windblown to nearby plants or neighboring fields. Once infected, these plants will act as reservoir hosts for the secondary spread of the disease during the season. The late blight fungus may be introduced into an area by infected seed tubers, or it may survive the winter in unburied or poorly managed cull piles of infected tubers from post-harvest or preshipment grading and sorting. The fungus can also survive on unharvested volunteer plants in nearby fields.

Late blight is most often associated with destruction of tubers in storage. Tubers are often infected during digging and during harvest when fresh wounds and bruises are exposed to fungal infected vines. Tubers can also become infected when spores are washed down to exposed tuber faces at the base of the infected potato plant.

The risk of secondary infection is particularly great on potatoes stored at temperatures of 45 degrees F. Typically, higher storage temperatures are preferred for processing quality potatoes; however, storing potatoes at these temperatures can accelerate the rate of secondary infection by other damaging organisms.

Control. Measures for controlling late blight involve both chemical control and cultural practices.

- Use fungicides with azoxystrobin, chlorothalonil, cymoxanil, dimethomorph, mancozeb, or mefonoxam as the active ingredient for controlling late blight. Many of the fungicides effective in controlling early blight on potato also control late blight.

- Apply fungicides before infection for full effectiveness.

- Make applications on a weekly or biweekly schedule, beginning early in the season. Or preferably, apply fungicides before infection when weather conditions favor disease development.

- Because of the development of resistant strains of the fungus to mefonoxam fungicides, apply mefonoxam products every 14 days, and use a fungicide with a different mode of action between mefonoxam sprays.

- For successful long-term control, destroy overwintering sources of inoculum.

- Always destroy and bury infected tubers, vines, and culls to prevent existing sources of infection from moving to the new crop.

- Destroy culls by disking, burning, spreading them out to freeze, or plowing them up. Or use culls for feed, starch, or compost.



Your Experts for Life

ANR-938

Edward J. Sikora, *Extension Plant Pathologist*, Professor, Entomology and Plant Pathology; and **Joseph M. Kemble**, *Extension Horticulturist*, Professor, Horticulture, both with Auburn University

Use chemicals only according to the directions on the label. Follow all directions, precautions, and restrictions that are listed.

For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

Issued in furtherance of Cooperative Extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, and other related acts, in cooperation with the U.S. Department of Agriculture. The Alabama Cooperative Extension System (Alabama A&M University and Auburn University) offers educational programs, materials, and equal opportunity employment to all people without regard to race, color, national origin, religion, sex, age, veteran status, or disability.

Web Only, **Revised Feb 2004**, ANR-938