

Late Blight Control Checklist

Revised by Steven B. Johnson, Ph.D.
(Originally Developed by Leigh Morrow)
University Maine Cooperative Extension



University of Maine Cooperative Extension staff developed this checklist for potato growers. This checklist identifies late blight control measures that should be followed. Late blight is a community disease and all growers need to do their part. Much of the effort in late blight control centers on two key issues:

Eliminate inoculum – Destroy potato cull piles and volunteers, plant clean seed, and protect home garden tomatoes and potatoes.

Protect foliage – Apply fungicides to all foliage, insuring coverage when crop growth is rapid, and keep foliage protected until vines are completely dead.

MARCH AND APRIL

- Understand the disease and the pathogen that causes it.*** Understanding the disease will help in understanding the control measures. University of Maine Cooperative Extension will continue to deliver late blight information throughout the season.
- Freeze culls.*** The late blight pathogen requires living tissue to survive. Kill the potato and kill the pathogen.
- Bury, compost, or feed existing culls to livestock.*** Whatever method is used, it must be done in a legal and an environmentally sound manner, and must be complete. No stray tubers or plants should remain. Field spreading of cull potatoes in Aroostook County must be completed by March 15 or March 30, depending on location.
- Check seed lots and test seed.*** Insist on the voluntary testing program offered by the Maine Department of Agriculture. Also, take your own samples before delivery and warm them up for two or three weeks to check if late blight develops.
- Consider washing and grading suspect seed lots after delivery.*** This should be considered a last resort salvage operation. Do not do this practice without serious discussion with crop advisors.
- Purchase crop insurance.*** Consider this a risk management practice.
- Prepare field sprayer.*** A properly operating sprayer is essential to a good fungicide protection program.

MAY

- Help distribute late blight information at garden centers.*** Garden tomatoes and potatoes must be considered as late blight inoculum sources.
- Warm up seed before planting.*** Seed from cold storage may not readily show symptoms of late blight. Do everything possible to discover blight on seed before planting them.
- Avoid precutting seed.*** The late blight pathogen has been shown to spread very quickly from diseased seed pieces to healthy seed pieces during the holding period of precutting seed.
- Do not mix seed lots.*** This could mix infected potatoes with uninfected potatoes and may spread the pathogen over a larger area..
- Keep seed knives sharp.*** Sharp knives produce clean cuts that heal quickly to ward off the pathogen.
- Insist on seed treatments containing mancozeb at a minimum and preferably cymoxanil in addition.*** These materials have been proven effective for reducing seed-borne late blight spread in seed pieces.
- Discard suspect seed pieces during cutting.*** Late blight is not worth the risk of saving a few extra seed pieces.
- Use less nitrogen to help vine kill and allow better skin set.*** A prolonged period of vine kill will lengthen the potential exposure of the tubers to the pathogen. Immature potatoes at harvest will skin and bruise easily providing ample infection sites for the pathogen and increase the difficulty of storage.
- Identify and eliminate cull piles in your area.*** Encourage neighbors to eliminate cull piles. Set an example by eliminating cull piles on your farm.

JUNE

- Check rock piles for potato plants.** Some potato tubers may have survived the winter in rock piles gathered from potato fields the previous year. Find and eliminate any volunteer potato plants.
- Calibrate and maintain sprayer.** Before the first fungicide application, check nozzles for uniform operation and recalibrate the sprayer for the correct application rate.
- Check areas of wet soil.** With late blight infected seed, the pathogen may grow up the stem and subsequently spread the rest of the field.
- Check for volunteer potatoes.** If deep snow protected fields during the past winter, check for volunteers where potatoes were planted last year. If volunteers are a concern, plant alternate crops late to allow tillage of emerged potato plants. Choose rotation crops so an herbicide effective on volunteer potatoes may be used.
- Remove inoculum; disk up or kill vines immediately.** When late blight infected areas or fields are discovered early in the season consider removing them to avoid the rapid increase of the infected area.
- Identify or help neighbors identify late blight infections in fields.** Early identification of late blight is critical. Walk fields paying close attention to the wet areas. At this time, late blight infections easily can be missed. It is especially important to inspect wet areas and have suspicious plants identified.
- Get late blight updates.** Check the hotline (760-9ipm), read Pest Alert, visit the web site (<http://www.maineptatopestguide.com/>), or ask a neighbor that does, but get the information. The IPM program has a good track record of determining current season disease and pest problems.
- Band spray early when cultivating.** This is an add-on spray. Band spraying will not replace a broadcast application if called for by the forecasting models.

JULY AND AUGUST

- Make the final hill big, after the set has been established.** This will place more soil over the tubers. Shallow tubers are more susceptible to infection by the late blight pathogen.
- Use protectant products regularly.** Chlorothalonil or EBDC products are the backbone of late blight protection program in Maine. Regular applications as recommended by the forecasting models are needed. Maintaining protection on new growth is a critical part of late blight control.
- Keep new foliage covered.** Infections can occur on the new growth of the potato plant especially where this portion of the plant can outgrow the protection in a matter of days. This is especially critical during June and early July. Application frequency is the key to protecting new growth.
- Optimize spray equipment.** Use adequate water and pressure to cover plants. By the end of July, there can be up to four times more foliage than ground area. Use more water now than earlier in the season and be certain all nozzles are within operational tolerance.
- Raise booms as the crop grows.** Operate booms at the proper height. Late blight usually starts in the tops of plants that were missed or outgrew the fungicide.
- Beware of irrigation when late blight is present.** Irrigation can fill the humidity gaps and aggravate blight situations. Heavy irrigation can carry spores down to tubers.

SEPTEMBER

- Watch the weather as vine kill time approaches.** When necessary, don't hesitate to kill vines early. If late blight is present, consider killing vines before heavy rains occur. In some instances, pushing a few more days may produce bigger yields, but in most instances, pushing a few more days a days can be lead to disastrous levels of tuber infection.
- Take preharvest samples, especially shallow tubers.** Knowledge about the health of the crop can guide harvest and storage decisions.
- Wash samples during harvest to check for late blight.** New late blight lesions will be dry and may be unnoticeable under a coating of soil. Know the situation before the storage is full and understand storage requirements of stressed potatoes. Soft rot can develop quickly from late blight lesions and soon cause massive storage problems.
- Harvest when the soil is dry and minimize skinning and bruising.** Infection at harvest is reduced in dry soil conditions and further reduced when skinning is minimized. Bypass areas with late blight infection.
- Provide adequate airflow and cool as rapidly as possible.** Infected potatoes in storages must be dried out quickly and cooled down. Late blight will progress rapidly and develop into soft rot on wet, warm potatoes.