

Managing Late Blight

- *P. infestans* requires living host tissue to survive, will not live on dead material, in soils, or on stakes, cages, etc., and is most likely to spread during extended periods of cool, damp weather (temps. 45-70° F., 75- 90% rel. hum.).
- *P. infestans* overwinters in potatoes, so do not use last year's crop potatoes for seed. Plant the current potato crop in a new location to avoid problems with infected volunteers. Remove all volunteers promptly. Use certified seed potatoes if available.
- Avoid overhead watering, try to water in the morning to limit leaf and stem wetness issues.
- Look for and use locally produced tomato and potato plants when purchasing seeds and starts in the spring. Select late blight resistant varieties when available.
- Monitor local weather conditions and the likelihood of late blight occurrence online at: http://uspest.org/risk/tom_pot_map
- If weather conditions are favorable for late blight, use a fungicide on susceptible crops to prevent disease establishment. Time your applications appropriately.
- Maintain fungicide coverage on your plants according to label rates, and be prepared to re-apply after rain. Listed fungicides are provided on the back of this sheet. Information is also available on the web at: <http://www.kellysolutions.com/VT/pesticideindex.htm>
- Immediately remove and dispose of all infected materials before the pathogen can spread to healthy plants.
- Collect and place infected material in sealed bags for municipal trash during the growing season, not in compost piles. Thorough incineration or deep burial of infected material will also work, if practical.

What is Late Blight?

- Late blight is a disease of potatoes, tomatoes, and other plants in the family *Solanaceae*.
- The disease is caused by the pathogen *Phytophthora infestans*.
- It has been present in Vermont for over 150 years, and was responsible for the Irish Potato Famine and other European famines (1840's).
- The disease can be managed successfully using preventative or systemic fungicides and cultural/physical techniques.
- Symptoms of infection include water-soaked lesions on leaves, fuzzy white fruiting bodies at the edges of lesions in wet weather, and greasy or leathery lesions on tomato fruit.
- The disease is not harmful to humans by itself, but do not eat those portions of produce that are obviously decayed or otherwise unwholesome.



For additional information, please visit us on the web or contact us directly:

<http://www.vermontagriculture.com>

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ver. 1.2 2/12/2010

Late Blight (*Phytophthora infestans*)



Dealing with Late Blight in Vermont



**Vermont Agency of Agriculture,
Food and Markets**

FUNGICIDES REGISTERED IN VERMONT FOR CONTROLLING LATE BLIGHT

Compound Common Name	Product Name(s)	Available to Homeowners	Systemic Activity in Host Tissues? ¹	Signal Word ²
ORGANIC FUNGICIDES*				
Hydrogen peroxide	Oxidate	Yes		Danger
Copper sulfate/Bordeaux mixtures**	Varies by Mfr.***	Yes		Danger
Copper hydroxide**	Varies by Mfr.***	Yes		Danger
Copper octanoate/Octanoic acid **	Varies by Mfr.***	Yes		Caution
Bacillus pumilus strain QST 2808	Ballad	Yes		Caution
Bacillus subtilis strain QST 713	Cease, Plant Guardian, Rhapsody, Serenade	Yes		Caution
CONVENTIONAL FUNGICIDES				
Propamocarb	Previcur, Prevex, Banol, Previcur flex	Yes	Limited	Caution
Mancozeb	Penncozeb, Dithane, carbanic acid	Yes, certain formulations		Caution
Mancozeb with copper hydroxide	Mankocide	Yes		Danger
Maneb	Manex, Manzate	Yes		Caution
Azoxystrobin	Abound, Amistar, Heritage	Some formulations	Limited	Caution
Trifloxystrobin	Flint	Yes	Limited	Caution
Copper tetraamine (2+)	Liqui-cop, Kop-R-Spray, Copper ammonia cplxs, Bravo, Armor tech, Countdown, Echo, Equus, Maxide, Pegasus	Yes		Caution
Chlorothalonil		Some formulations		varies
Pyraclostrobin	BASF 500F, Cabrio	Yes	Limited	Caution
Cyazofamid	Rannan	Yes	Limited	Caution
Cymoxanil	Curzate, Tamos	Yes	Yes	Warning
Fluoxastrobin	Disarm, Evyto	Yes	Limited	Caution
Azoxystrobin with Chlorothalonil	Quadris	Yes	Yes	Warning
Potassium salts of phosphorus acid	Kphite, Alude, Exel	Yes	Limited	Caution
Zoxamide	Gavel 75DF	Yes		Caution
Dimethomorph	Acrobat, Forum DC	Yes	Yes	Caution

Pesticide users are reminded to fully read and comply with all pesticide labels prior to and during pesticide use and disposal; any deviation(s) from label requirements represents a violation of state and federal law(s).

This listing is not all-inclusive, and may include compounds and product names not currently registered in Vermont. The Agency of Agriculture maintains a complete and current listing of pesticides registered for use in Vermont at: <http://www.kellysolutions.com/VT/pesticideindex.htm>.

Also, check with the appropriate certification body before applying any pesticide to certified organic crops.

Inclusion of a product on this list does not imply or constitute endorsement by either the Agency of Agriculture or the State of Vermont. Systemic products (penetrants) move within plant tissues after being absorbed at application, providing varying degrees of longer-term protection away from the application site after application. These products may also have curative properties, and are less prone to washing off, whereas contact fungicides remain on the surface and must be present before the pathogen lands on the host in order to be effective. Source: <http://www.apsnet.org/education/IntroPlantPath/Topics/Fungicides/pdfs/CommonAndTradeFungicides.pdf>

² Signal Word indicates the acute (short term) toxicity of a pesticide to humans, providing a measure of potential hazard(s) to applicators. Signal words range from Caution (slightly toxic) to Warning (moderately toxic) to Danger (highly toxic).

* As listed by the Organic Materials Review Institute (OMRI), January 20, 2010, including NOP Rules: 205.601(i)(1) & 205.601(i)(2) & 205.601(i)(3) - Copper sulfate and hydrated lime.

** Copper-based material must be used in a manner that minimizes accumulation in the soil and shall not be used as herbicides.

*** Organic growers should check with the appropriate certification agency and/or manufacturer(s) prior to application of copper pesticides, in order to maintain organic certification.