



Potato Progress

Research & Extension for the Potato Industry of
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Managing Late Blight during Late Season and into Storage

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Late blight is present in the southern Columbia Basin of Washington. Genotype is US-8, which is mefenoxam resistant. A potential threat exists for widespread infection going into harvest and storage. Fungicide applications and good cultural practices are needed to successfully manage the disease.

Soil cracking and hill erosion expose tubers in the field and make them especially vulnerable to infection from spores that are washed from infected foliage by irrigation water or rain. Infection of mature tubers occurs through tuber buds (eyes) and wounds. Tuber infections are increased with the following conditions:

1. Soil is water saturated for extended time periods
2. Tubers are on or near the soil surface
3. Soil cracking occurs
4. Foliage is severely infected
5. Harvest is done during wet weather

Fungicide applications

Timely fungicide applications at effective rates are an important component of managing late blight. Use short application intervals when disease pressure is high. There are no fungicides available with a knockout punch! Selected fungicides with good activity against late blight include (in alphabetical order):

Chlorothalonil (multiple products)
Curzate and Tanos (both have cymoxanil)
Forum (dimethomorph)
Gavel (zoxamide + mancozeb)
Mancozeb (multiple products)
Metiram (Polyram)
Omega (fluazinam)
Oronidis Opti (oxathiapiprolin + chlorothalonil)
Previcur (propamocarb-HCl)
Ranman (cyazofamid)
Revus Top (mandipropamid + difenoconazole)

See **Potato Progress XVII (9)** published 16 June 2017, “Selected fungicides for managing potato late blight in the Columbia Basin” for more information about late blight fungicides.

Continue fungicide applications at recommended intervals *UNTIL HARVEST*, or until all vines are dead, to protect both new and old foliage. The late blight pathogen can produce spores (sporangia) on dying plant stems and vine killing by itself does not necessarily stop additional tuber infections. Consult the toll-free information lines for suggested intervals.

Additional considerations for storage management

Plant **water use decreases** in mid-august and care must be taken to not over-water the crop.

Harvest only during dry weather and when pulp temperatures are 45-65°F.

Treat with a phosphite-based fungicide going into storage. The recommended rate is 12.8 fl oz of product applied in 0.5 gallons of water per ton of tubers. Application volume and rate are critical for the success of this application. See Potato Progress XVII (9).

Store infected lots separate from healthy lots. Store known infected lots where they can be moved easily for processing. Sort out rot going into storage. Provide sufficient light and personnel to do the job.

Provide adequate airflow through the storage (25 cfm/ton). Cool and dry the tubers as soon as possible.

Cure tubers at the lowest temperature possible (50°F) or eliminate the curing period, depending on the amount of rot.

Cool the pile to the final storage temperature as quickly as possible – about 42°F for table stock, 45°F for French fry processing and 50°F for potato chips. It may be necessary to cool and hold tubers for processing and chips below the typically recommended temperatures. Do not humidify.

Run fans continuously. Recirculate air through the tubers at all times, even when outside air is not being introduced.

Keep piles shallow to promote air movement and removal of hot spots.

Monitor storages daily. Determine temperature of the piles at various depths and locations. Serious late blight problems usually show up with 6 weeks of storage.

Do not expose cold tubers to outside air and any tubers to air at or below freezing

Tubers of Ranger Russet are very susceptible to infection and pose an additional risk in storage. Tubers of Alturas and Umatilla Russet are moderately resistant, and tubers of Defender are resistant. Storage problems with resistant cultivars will be less than with more susceptible cultivars given similar field conditions. However, good air movement and temperature and humidity management are needed when storing infected tubers of all cultivars.

Requesting Topic/Speaker Ideas for the WA/OR Potato Conference

Yes, it's still mid-summer but it's also time to start planning the annual WA/OR Potato Conference, which will take place in Kennewick as usual, January 23-25. This is our annual request for suggested topics and/or speakers that you or your colleagues would like to see during the general session of the conference. Each year we accumulate a long list of suggestions, then the program committee whittles it down to the 21-23 slots we have available in the program (note that the conference focuses on speakers from the public sector and researchers funded by the commissions, only in special circumstances inviting corporate representatives). If you have research (or other information) of your own that you'd like to present, please let me know, providing a title and very brief summary. If you would like a certain topic covered at the conference, send it along. If you know of a certain speaker to cover that topic, that would be very helpful. Send all suggestions or other feedback on the conference general sessions to Andy Jensen at ajensen@potatoes.com.

Remote Sensing Conference

Many potato growers, agronomists, and researchers are interested in the use of remote sensing to improve crop management and variety development. A national effort is underway to coordinate these efforts and obtain federal funding for research and extension. Please join us for a one-day conference to hear about the latest research, share ideas and contribute to the development of a strategic plan for the potato industry.

When: Nov. 14, 2017

Where: Union South, Madison, WI

There is no cost to attend the meeting (apart from travel). **Registration is required.**

To see the program and **register** for the conference, visit:

<http://potatobreeding.cals.wisc.edu/remote-sensing/>

Potato Late Blight

See also: <http://www.nwpotatoresearch.com>



Tuber Late Blight



Tuber infection begins superficially, but can invade entire tuber. Sporulation can occur on cut or uncut tubers.



D. Johnson, WSU Pullman



J. Gigot, WSU-NWREC

Management

1. Prevention is key
2. Harvest during dry weather
3. Tuber temperatures going into storage should be less than 68 F
4. Mancozeb and metiram fungicides on the soil surface late season may help prevent tuber infection
5. Foliar applications of phosphorous acid at harvest and in storage can reduce late blight tuber rot
6. Late blight infection often leads to other kinds of tuber rots in storage -- it is best to NOT STORE late blight infected potatoes, and there are no chemical treatments that will cure an infected pile of potatoes

General Information

Causal Agent: *Phytophthora infestans*

Biology: Pathogen of potato and a few related plants; infection encouraged by humid and wet conditions

Dispersal: Sporangia move in the wind; zoospores in water

Fungicide resistance: *P. infestans* is well-known to become resistant to site-specific fungicides used against it. Fungicides should be rotated frequently to prevent resistance.

Washington State Potato Commission (Phone: 509-765-8845)