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Mid-Summer Report Card on the Occurrence and Affects of Late Blight on Tomato and Potato in New York, 2009.

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Although admittedly dreading a trip to eastern NY last week (Aug 10-13) for fear of seeing one dead tomato or potato field after another, I was pleasantly surprised to see that not every grower (conventional or organic) had experienced a complete wipeout of their crops. ♦ To be sure, some sporulating late blight was found in many fields examined at each stop, still it was apparent that the disease, although wide-spread, was not causing total destruction either, and that growers had taken the appropriate steps to minimize their losses. ♦ To be sure, this was at the expense of many fungicide applications and a lot of time and sweat expended to control the disease, but the results were gratifying to see. ♦ Homeowner gardeners and smaller organic operations suffered the greatest losses, and they will be glad to garden another season in the absence of late blight.

Why an endemc problem but not an epidemic catastrophe in susceptible crops this summer?

As previously documented, the spring and early summer of 2009 was setup for losses in tomato and potato crops of unprecedented proportions, given that infected tomato plants had been sold to unsuspecting home gardeners from large ♦ big box ♦ stores and environmental conditions (frequent rains and cool temperatures) were common throughout the NE. ♦ Additionally, in the case of potatoes, late blight occurrence in 2008 in some seed producing states, also could provide inoculum on infected tubers used for the 2009 crop. ♦ Based upon tests to identify the clonal lineages of *Phytophthora infestans* conducted in Dr Fry's lab at Cornell, the isolates recovered from infected tomato and subsequently infected potato did not fit any of the late blight genotypes previously identified in NY. ♦ The new genotype is mating type A2 (perhaps P-T, but not as virulent as some in the past), unlike the previous genotypes like US-11 (P-T) and US-17 (p by laboratory tests only-T) which are A1 mating types and were even more destructive on tomato. ♦ The pathogenicity indicated by (P-T) refers to pathogenic specialization on both crops, where capital P and T indicates primary pathogens of both crops, while a lower case letter indicates less pathogenicity for the crops. ♦ Separate infections did occur in potato in western NY and were identified as US-8 (mating type A2, P). ♦ US-8 is now the primary genotype of late blight infecting potato on a regional basis. ♦ So, our salvation this summer was that the primary genotype(s) spread throughout the region were apparently not as pathogenic on tomato and potato as we have encountered in other years. ♦ This is little consolation to homeowners and organic growers who suffered total losses, but does explain how some growers were able to keep losses to a minimum.

What steps worked for growers faced with late blight in 2009?

♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ I will divide this discussion into two parts, since we are dealing with the two different genotypes in NYS, and the actions taken are different. ♦ In the case of the unidentified A2 type originating initially from tomato (not quite P-T, but close) that spread to tomato and potato, growers (both conventional and organic) relied upon a tight fungicide program (5-7 day schedule) with late blight specific fungicides in conventional operations (products including contact materials like chlorothalonil, Gavel, and Ranman, and translaminar materials like Curzate, Previcur Flex, Revus, and Tanos). ♦ Organic growers relied on copper fungicides applied on a 3-4 day schedule (Nu-Cop and Basic Copper 53). ♦ Another procedure followed, especially by organic growers, was to flame out of the most aggressive hot spot areas located near tree lines to remove the most heavily infected plants early in the initial spread of late blight. ♦ This practice undoubtedly saved a lot of the crop and allowed copper sprays a chance to reduce remaining infections. ♦ In organic operations we also saw growers cutting down infected potato foliage of more susceptible varieties in an effort to reduce the inoculum level in their fields.

♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ In the case of commercial potato fields faced with the need to control US-8 (mating type A2, P) within their crop (likely originating from infected seed tubers), the steps taken were more aggressive. ♦ Hot spots of infection in fields were killed as soon as detected and then an aggressive 4-5 day spray schedule was followed using the late blight specific products mentioned above.

♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ The bottom line in both cases this season, the successful control on late blight hinged on the application of appropriate fungicides on a very tight schedule.

What can we expect for the remainder of the season?

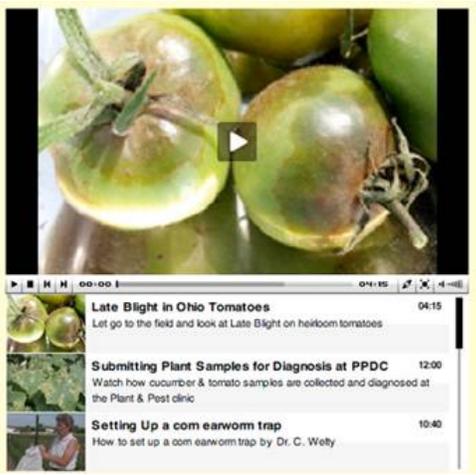
♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ Unfortunately, we are not out of the woods by any means, as what I call ♦ back filling ♦ of infections is still occurring in remaining susceptible crops (potato and tomato) in both homeowner gardens and commercial acreages (both organic and conventional). ♦ Reports of late blight infections just now appearing in home gardens and isolated cropping areas are just now coming in. ♦ Although a brief spell of hot weather may have slowed down late blight a bit, it is still sporulating and producing inoculum during our heavy evening dew periods. ♦ All concerned interests must continue on a regular fungicide program until the crops are finished. ♦ Special care must be made in the case of potato to examine harvested tubers to make sure they are free of tuber blight. ♦ It is advisable to move the crop as soon as possible to reduce tuber infections in storage. ♦ The other significant reminder is to make sure that all tubers are harvested and that special attention is directed to removing and destroying volunteers that may survive the winter season and have the potential of carrying over late blight to next year. ♦ A common problem is encountered when corn is planted as the rotational crop in fields that had late blight this season. ♦ Volunteer potatoes are difficult to rogue out when hidden by the emerging corn or other rotational crop.

What can we learn from tomato and potato crops with more limited infections?

♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ Differences in the amount of infection of potato and tomato, both traditional varieties and heirlooms, have been observed this year across the state. ♦ For sure there are definitely differences in the amount of infection for both crops. ♦ However, given that the predominate clonal lineage that occurred this year is apparently not as aggressive as those encountered recently, this might lead one to consider a variety as resistant or tolerant to late blight, when in fact in another year is could perform differently. ♦ One fact does remain, with the exception of comments made about overwintering of inoculum on potato tubers, next year we begin the season with a ♦ clean slate ♦, one that will be more kind to all fanciers of tomato and potato.

Bob's Video Vegetable Notes

Late blight on tomatoes has been in the news for several weeks now. The Northeast has been especially hard hit. The disease has finally made it to Ohio infecting several tomato plantings on commercial farms and in home owner backyards. Let's take a look at this disease and get a very brief history as to how this disease relates to the great Irish potato famine. Watch my latest video at: <http://vegnet.osu.edu> ♦



Previously: [◆](#).

9. Submitting Plant samples to the Plant and Pest Clinic

8. Setting Up a corn earworm trap with Dr. Celeste Welty

[Use the scroll bar on the right side of the playlist to see all the videos.](#)