

Late Blight: How Conductive Weather and Broad Distribution of Inoculums caused Devastating Damage in New York State in 2009.

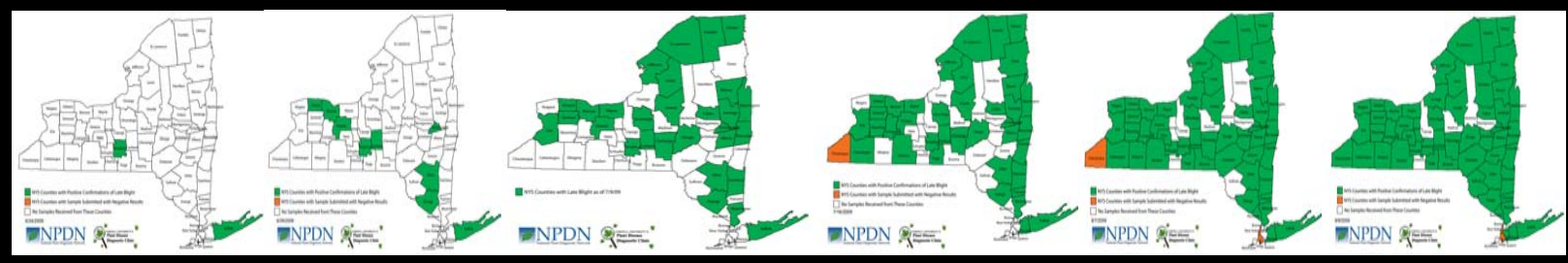
Karen L. Snover-Clift¹, Sandra Jensen Tracy¹ and Margaret Tuttle McGrath²,

Cornell University, Department of Plant Pathology and Plant-Microbe Biology, Ithaca, NY¹ and Long Island Horticultural Research & Extension Center, Riverhead, NY²

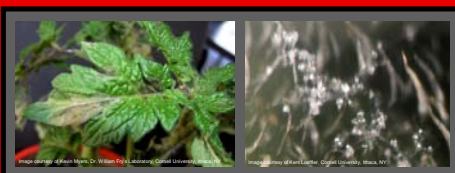


Abstract

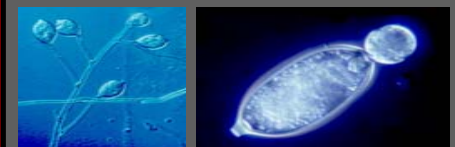
During the summer of 2009, the occurrence of late blight of tomato and potato was widespread and devastating. Word of disease spread quickly through the Cornell University late blight listserv, local newspapers, extension newsletters, and on-line outreach programs. It was so significant that it warranted a headline, "You Say Tomato, I Say Agricultural Disaster", in the *New York Times*. The 2009 occurrence was significant because it differed in three ways from most seasons. First, it was the earliest the disease had been reported over such a broad region of the country, second, infected plants were found in large retail stores throughout the region (Ohio to Maine) and third, due to recent, tough economic times, many more people planted backyard vegetable gardens which made the distribution of tomato plants geographically more dense. Additionally the weather made a significant contribution. The weather during the spring and early summer months was uncharacteristically cool and wet and remained so well into July. Based on testing conducted in Dr. William Fry's laboratory, the clonal lineage of the pathogen isolated from tomatoes has not been found in New York previously. A couple things are known about this unidentified clonal lineage. It is an A2 mating type and it is a primary pathogen on both tomato and potato. Late blight occurrence in 2009 was devastating due to the abundant presence of the pathogen that was spread out geographically and the conducive environmental conditions. By August 27th, late blight was reported in 55 of 62 counties.



The pathogen was observed early in the season on tomato plants in box stores across New York and also reported from these locations in the Northeast region. Later observations continued to be widespread and from locations including home gardens, community gardens, research plots, and commercial fields.



The pathogen was spread around New York so quickly and abundantly that newspapers around the region picked up the story and introduced the public to late blight. Many of these readers went to their home gardens and found, they too were victims of a late blight infection on their tomatoes. At first it seemed the pathogen was found on store-bought tomatoes but as the season progressed, even those that started their plants from seed saw infection. We believe the weather conditions helped this widespread event as we had very cool and wet weather for extended periods.



News of identifications were reported via the Late Blight Listserv. Reports were collected from plant pathologists and extension educators. When it became obvious that this season was a unique one, those reports were collected on a spreadsheet and converted to maps (above) to keep track of the reports. The reports listed in blue were observations made by field personnel and those in black were confirmed in a laboratory. Identifications by county came quickly beginning with 2 counties reporting finds on June 24th, then 39 by July 16th and finally 55 by August 27th. A survey was not conducted to determine if late blight was in each county.