

Title: Late Blight Network

Project Leader(s): Abby Seaman, NYS IPM Program

Cooperator(s): Extension faculty and field staff, Ag consultants, Department of Agriculture staff in New York and adjacent states and Canadian provinces

Abstract: Late blight is a serious disease of tomato and potato which, if not controlled, has the potential to destroy entire fields in as little as two weeks when weather conditions are favorable. Since 1993, Extension faculty and field staff in New York have used a variety of communication technologies to keep each other informed about where in the state late blight has been found. The network has grown to include members from states and Canadian provinces adjacent to NY. In 2009 early introduction of late blight inoculum and favorable weather conditions resulted in a serious late blight epidemic throughout the Northeast. The late blight network was instrumental in mustering a fast response to the situation, minimizing crop losses.

Background and justification:

Late blight is a serious disease of potato and tomato that occurs sporadically in New York and surrounding states and provinces. When weather conditions are favorable, the disease can progress very quickly, killing a field in as little as two weeks if not controlled. The pathogen produces large quantities of inoculum, which can travel long distances, putting nearby farms at risk. It is essential for farmers to know when late blight is in the area so they can choose the appropriate fungicides and spray interval to protect their crop. In low risk years, knowing that late blight has not been found allows farmers to extend their spray intervals, saving money and reducing environmental impact. In response to the introduction of new strains of *Phytophthora infestans* in 1992, Cornell Extension faculty and field staff have communicated about where in the state late blight has been found to help potato and tomato farmers assess the threat of infection. Through the years, colleagues in adjacent states and provinces have been included, and new communications technologies adopted.

Objectives:

- 1) Facilitate communication about late blight finds among Extension faculty and field staff, consultants, and regulators in New York and adjacent states and Canadian provinces.
- 2) Provide information about late blight to farmers and others

Procedures:

- 1) Seaman manages a listserv using Lyris software hosted by Cornell University. Membership on the listserv is restricted to University faculty and Extension field staff, consultants, and Department of Agriculture staff to preserve, as much as possible, the confidentiality of the farms where late blight has occurred. A message is sent out at the beginning of each growing season asking members if they want to continue and soliciting names of new colleagues who should be added. Members communicate late blight finds by sending a message to the list

address, which sends it to all members. Late blight finds are communicated by county or town to preserve the confidentiality of the farmers. Information about the crop infected, the severity of infection, and control measures being taken are also shared. Each week Seaman summarizes the finds from the previous week in a weekly update sent to the listserv. Links to articles, fact sheets, and photos were also summarized in the weekly update.

- 2) Regional and local extension programs use information from the listserv and weekly update to provide farmers in their area with recommendations for managing late blight. The weekly update is also posted on the NYS IPM program web site and sent to a second listserv whose members are farmers who do not have access to weekly pest updates from a regional vegetable extension program. This second listserv includes the Master Gardener Coordinator who then posts information in the Master Gardener newsletter, helping Master Gardeners interacting with home gardeners.

Two existing late blight resources were updated in collaboration with faculty experts to reflect current conditions. A brochure for home gardeners: Late Blight: A Serious Disease of Potatoes and Tomatoes, was first published in the mid-1990's at the request of potato growers concerned about late blight inoculum from home gardens. A late blight fact sheet that had not been available in pdf format was updated and posted as a pdf to provide a document that could be printed and handed out.

Results and discussion:

- 1) Most seasons the Weekly Late Blight update is nothing more than a notice that late blight has not been found in the reporting area, week after week. This was not the case in 2009. Late blight was first reported in the field on tomatoes June 18 in southern New Jersey. This report was quickly followed by field reports on tomato and potato from Pennsylvania and Long Island. Late blight was found on tomatoes in the garden center of a national chain store in Ithaca on June 24. Listserv members across the reporting area visited their chain stores and found late blight infected tomatoes in nearly all stores raising the suspicion that late blight had been widely disseminated on infected transplants in home gardens. At the same time, above-average rainfall was occurring across New York and New England. Urgent alerts went out in grower newsletters, local newspapers, Master Gardener updates, and special communications. The weather continued to be favorable and late blight reports continued to pour in for the rest of the summer. Nearly every county in New York reported late blight, and farmers and gardeners throughout the Northeast were affected. Farmers who were able to stay on a tight fungicide schedule were able to save their crops. Others, many of who could not get into their fields because of wet soil, suffered extensive crop losses. Organic farmers were especially vulnerable to crop loss, with only certain fixed products allowed for certified organic production, but those who started before or at the first sign of infection were able to harvest a crop. Most home gardeners lost both their tomatoes and potatoes.

Having the network already in place when late blight was first found in garden centers was invaluable. We were able to determine within a few days that late

- blight inoculum was widespread, allowing us to get the word out to farmers very quickly. We gained additional listserv members this season, strengthening the network for future years. The network is also facilitating planning for next season and sharing articles and other information to help minimize overwintering inoculum and hopefully minimize late blight incidence next year.
- 2) On the NYS IPM Program web site, the weekly update, revised home gardener brochure, and pdf of the late blight fact sheet were viewed extensively this season (Table 1), suggesting that they were a valuable source of information for the public. The url for each resource can be found below Table 1.

Table 1

Web page	June	July	August	September
Late Blight: A Serious Disease of Potatoes and Tomatoes (html)	2,214	29,031	25,006	6,911
Late Blight: A Serious Disease of Potatoes and Tomatoes (pdf)	*	*	325	183
Late Blight of Potatoes and Tomatoes (fact sheet)	*	*	89	43
Weekly Late Blight Update	82	1,004	1,450	309

*Not posted until August

Late Blight: A Serious Disease of Potatoes and Tomatoes (html):

<http://nysipm.cornell.edu/publications/blight/Default.asp>

Late Blight: A Serious Disease of Potatoes and Tomatoes (pdf):

http://nysipm.cornell.edu/publications/blight/files/late_blight.pdf

Late Blight of Potatoes and Tomatoes (fact sheet):

http://nysipm.cornell.edu/factsheets/vegetables/potato/late_blight_fs.pdf

Weekly Late Blight Update:

http://nysipm.cornell.edu/scouting/late_blight/default.asp