

2009 Late Blight Fact Sheet for Homeowners

The Situation

Late blight, caused by *Phytophthora infestans*, is a serious disease affecting mainly tomato and potato throughout the world. It was the disease of the Irish Potato Famine. It is a common disease in New York State and the surrounding states in the Northeast since our summer, with cool temperatures and frequent rains, is very conducive for disease development. Late blight is such a serious problem because the inoculum (spores) is easily carried in wind currents to infect susceptible plants in even the most remote area in our region. Currently all tomato and potato plants grown in home gardens and in commercial fields are susceptible to late blight! This particular genotype of the disease also appears to be more harmful to tomatoes than potatoes.

The occurrence of late blight in 2009 is different compared to most seasons in two ways. First, this is the earliest the disease has been reported over such a broad region of the country. Several years ago we had a similar occurrence with the disease originating from one county source in upstate New York. By the end of the summer disease had spread to at least 14 counties, destroying tomatoes in the entire region.

The second reason, and more tragic for the Northeast, is that infected plants were distributed to large local retail stores throughout the region (Ohio to Maine). Never before has such an extensive distribution of infected plants occurred. The inoculum is exceptionally contagious, spread-

ing on garden center shelves to tomato plants not involved in the original and initial source of the inoculum. We have spread the word of this impending disaster, and within a day the original supplier, working with Department of Agriculture in the affected states, has removed most of the initial source plants. However, the disease had already spread to other tomato plants not from the original source.

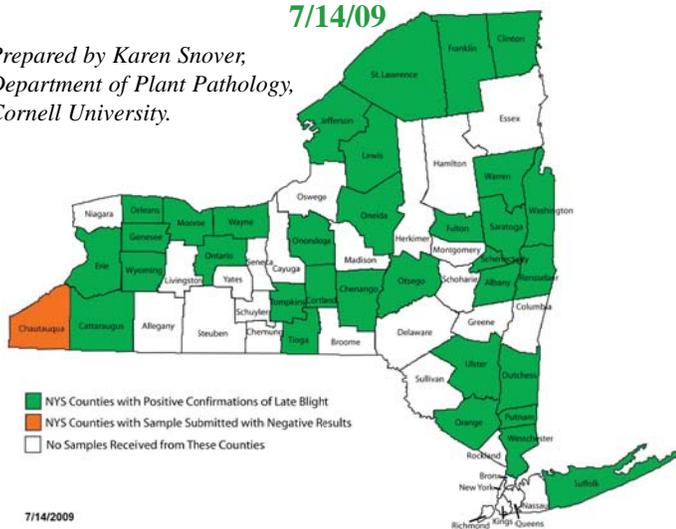
What to do now?

Many families have taken up vegetable gardening, given the tough economic times, and tomato is the most important crop in gardens. The organism is not seedborne (however, it is tuberborne in potato), so that tomato plants started from seed locally may be free of the disease, at least for now. Given the scenario that I described, we must assume that many infected tomato plants have been planted across the entire region, if they originated from so called "big box" stores.

Late Blight Positive Identification in New York

7/14/09

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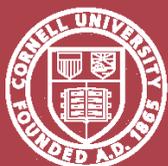
Identification

The symptoms that develop on tomato leaves, stems and fruit are quite dramatic, and are very obvious to the naked eye. The leaf lesions are water-soaked, varying in size from a nickel up to a quarter. They are water-soaked when the foliage has been exposed to watering or heavy overnight dews. When these lesions drying out quickly, they may appear lime-green in colored or even become beige. The edge of the water-soaked lesion, on either the top or bottom leaf surface, will be covered with white fungal growth that contains the spore inoculum (visible with



Above: Upper leaf lesion

Below: Underside of infected leaf



Cornell University
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4-H Youth Development

18 Seward Ave., Suite 300
Middletown, NY 10940-1919
845-344-1234
Mon.-Fri., 8:30 AM - 4:30 PM
www.cce.cornell.edu/orange
Garden Helpline: 845-343-0664



*Above, left:
Stem lesion*

*Above, right:
fruit infection*



*Left:
Entire plant infected*

a hand lens). Spores are easily blown to surrounding areas and infect plants and even weed species, in the family Solanaceae (the black nightshade family). Tomatillos are susceptible too. If the lesion has a yellow border and is occurring on the bottom of the plant, it is likely due to infection of either early blight or Septoria leaf spot, two common diseases found in home gardens. Brown to almost black lesions appear on infected stems, and the same lesions will develop on fruit, either directly on the infected plants, or a few days after they are sitting on your kitchen counters. Although it is not dangerous to humans, most of the fruit could be used if the affected area is removed.

Plant examination and removal

Please inspect your tomato plants on a daily basis! If symptoms are already appearing on plants in your garden, these plants should be removed and put in a plastic bag for disposal. Don't just put the removed plants in a compost pile as spores will still spread from this debris. Your neighbors, not to mention commercial growers, will appreciate your taking this action immediately.

Plant treatments

Commercial growers have a number of fungicides that if applied early and often, can reduce the spread of Late Blight. They would choose not to

spray if they could, but this destructive disease does not give them any other option. Homeowners do have a few products that are registered for use and the common name of chlorothalonil should appear on the product label. Even here, these products are only effective if used before the disease appears and should be reapplied every 5-7 days if wet weather persists. Chlorothalonil is a protectant fungicide, with no systemic movement in the plant, so thorough coverage is necessary. For organic growers and homeowners interested in organic methods, the options are very limited, since only copper fungicides can be used, and they are not very effective.

What about next year?

It is crucial that you remove ALL plant debris as it can harbor the spores for future crops. If you remove all tomato/potato parts from your garden, you will be able to plant tomatoes and/or potatoes there next year. If you do not, consider putting another vegetable like cucumber. Replacing soil is unnecessary. If you are concerned about next year, contact Cooperative Extension for a list of Late Blight tolerant tomato varieties that is currently being compiled due to this epidemic.

Where to bring a sample for diagnosis and/or ask questions

Samples are being accepted and diagnosed for free at:
Cornell Cooperative Extension Orange County

18 Seward Ave. Middletown, NY 10940

845-344-1234 or call the

Garden Helpline at 845-343-0664 for advice.

You can leave a message anytime or talk to a MG on M,W, & F from 9:30 am-12:30 pm.

This may contain pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are possible. Some materials may no longer be available, and some uses may no longer be legal. Read the label before applying any pesticide. Cornell Cooperative Extension and its employees assume no liability for the effectiveness or results of any chemical pesticide usage. No endorsement of products is made or implied.

Photographs & More Information are Posted on the Web at:

www.hort.cornell.edu/departments/Facilities/lihrec/vepath/photos/lateblight_tomato.htm

vegetablemendonline.ppath.cornell.edu/factsheets/Potato_LateBlt.htm.

Home gardeners can learn more about the situation by going to:

<http://blogs.cornell.edu/hort/?s=late+blight+disease>.