



28 July 2010

Dear Agents,

### **The current late blight situation in far southwestern Virginia:**

Late blight was confirmed yesterday on tomato plants from Tazewell County, Virginia that were submitted to the Plant Disease Clinic. This is the first report of late blight in the Plant Disease Clinic this year and for southwestern Virginia to our knowledge. Due to this late blight find, Virginia growers in Tazewell and southwest Virginia may want to begin preventative fungicide applications to prevent late blight on their potato and tomato crops if environmental conditions for disease development are favorable in their location. Unlike many areas, Tazewell County has experienced a lot of rain in certain locations and cooler temperatures than other areas of southwest Virginia. Late blight is favored by cool temperatures (less than 85°F) and rainy and/or moist environmental conditions. Many locations in southwest Virginia have not experienced these environmental conditions, but instead, very hot and/or dry conditions, which are unfavorable to late blight development. However, if weather conditions do become favorable and inoculum is present, late blight can progress very rapidly. The best approach for potato and tomato growers in southwest Virginia is to remain vigilant in scouting their potato or tomato plants for this disease and apply preventative fungicide sprays when weather conditions are conducive for disease development.

### **General information on late blight:**

Late blight is a serious disease with epidemic potential of tomato and potato. It is caused by a fungus-like organism, *Phytophthora infestans*, which can overwinter in infected potato tubers, but is most commonly spread by prevailing winds and weather systems. The pathogen can only overwinter on **living** host tissue. This disease is favored by cool temperatures (less than 85 degrees F) and rainy or moist conditions.

### **Symptoms of late blight (see images below):**

**On tomato:** Water-soaked spots that enlarge rapidly into pale green to brown lesions on the leaf. Lesions have a greasy appearance on the upper side of the leaves. During periods of high moisture, these areas may be covered with gray to white moldy growth. Infections may occur on the stem of heavily infected plants. On infected tomato fruit the spots are oily-looking, dark and typically enlarge rapidly. Severely infected plants may have an unpleasant odor.

**On potato:** Foliar lesions on infected potato leaves are similar to those seen on tomatoes. Dark green, water-soaked lesions develop on leaf tips and spread inward rapidly. Whitish moldy growth may appear on lower leaf surface when conditions are favorable. Infections may occur on the stems of plants. Infected tubers will appear black and should not be used as seed pieces for future potato crops.

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**Suspect samples:** If you suspect late blight, double-bag samples and mail them to the Plant Disease Clinic unless you can definitively identify the pathogen yourself (microscope necessary). Mail samples early in the week or hold in a refrigerator to avoid sample deterioration in the post office over the weekend.

**Figure 1.** Late blight symptoms on potato.



**Figure 2.** Late blight symptoms on potato leaves.



**Figure 3.** Late blight symptoms on tomato leaves and fruit.



### **Late Blight Management:**

**Commercial Growers\*:** Use certified seed pieces to ensure that you are not transmitting late blight. Avoid excessive overhead irrigation or practices that make the foliage wet, particularly in the mornings or at night. Prior to disease appearance, growers should apply a protectant fungicide (i.e. chlorothalonil or mancozeb). Once the disease is present within your fields, systemic fungicides should be used for disease suppression. Systemic fungicides recommended for late blight control include: Curzate, Forum, Gavel, Headline, Omega, Previcur Flex, Quadris, Ranman, Revus Top and Tanos. As always, follow pesticide labels for rates and usage. Consult the [Virginia Commercial Vegetable Production Guide](#) for more information.

**Homeowners and Gardeners\*:** Use certified potato seed pieces to ensure that you are not transmitting late blight. Avoid excessive overhead irrigation or practices that make the foliage wet, particularly in the mornings or at night. **Preventative fungicides must be used prior to late blight symptom development**, so growers may want to apply a protectant fungicide, particularly if weather conditions in their area have been conducive for development of late blight (cooler temperatures and abundant moisture). Most hardware, feed and seed, or home improvement stores carry fungicides

that contain the active ingredient chlorothalonil. This is the best option for home gardeners. Applications should be made prior to disease onset following labeled directions. It is essential to achieve sufficient coverage for this fungicide to be effective. Follow label instructions for appropriate rates and schedule.

**\*Organic Growers:** Some copper formulations are [OMRI](#)-listed for control of late blight. Serenade™ biofungicide is a wettable powder formulation of a *Bacillus subtilis* strain. These fungicides must be applied preventatively.

**Problems that may be mistaken for late blight:**

**Septoria leaf spot** (<http://pubs.ext.vt.edu/450/450-711/450-711.html>): small dark brown spots with tan centers, sometimes bordered with yellow, begins on lower leaves and moves upward (growers may describe this as “wilt” or “blight”).

**Bacterial wilt or other vascular wilts:** the entire plant wilts. Cut away green tissue on the stem down to the woody vascular tissue: if the woody tissue is not white, but browning, then the problem is most likely a vascular wilt disease.

**Tomato spotted wilt virus:** brown spots first appear on upper leaves of plant. The plant may droop and wilt.

**Bacterial spot and speck** initially cause discrete spots on leaves. Fruit can also develop discrete spots.

**Early blight** causes lesions on foliage, stem and fruit. Typically the first symptoms are on the older leaves where small brown/black spots form. Lesions may be surrounded by yellow. Leaf lesions grow quickly and usually develop concentric rings. Early blight may be problematic in some fields and may be confused with late blight.

**If you see discrete spots on leaves or fruit, it is most likely another tomato problem—not late blight.**

Regards,

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