Fruit Pest News

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Late Blight of Tomato – Will it Carry Over to Next Year?

Growers in East and Middle TN had their first experiences with late blight in many years (see July 29 issue), resulting from infected transplants sold at big box store garden centers. Will the abundant inoculum carry over and cause disease in 2010?

It's in the growers' hands (assuming the garden centers don't sell infected plants again—that would negate everything that is to follow). The late blight organism overwinters primarily in two ways*: (1) in potato tubers that manage to survive the winter, such as in cull piles or in the ground and (2) in tomato greenhouses, in which living hosts are present throughout the winter. So, destroy cull piles now and any volunteer potato plants next year. Tomato greenhouse operators should look for any symptoms of late blight and remove and destroy the tissue. It can be burned or steamed. Burying the infected plant tissue outside would also be effective, but watch for volunteer seedlings next spring.

*A third means of overwintering, by oospores, is possible. Oospores are thick-walled spores that can survive in the soil for long periods of time. Their formation requires the presence of two mating types of the pathogen. It is considered unlikely, but unknown, whether the two mating types are present in TN this year.

Look for the large, irregular-shaped leaf lesions shown in Figure 1. Under humid conditions, a thin, white fungal growth occurs on the underside of the lesions, especially around the margins (Fig. 3). On the fruit (Fig. 1), a firm, light brown rot develops, often beginning on the stem end. Brown to dark gray lesions develop on the stems (Fig. 2).

CONTROL: Greenhouse tomato growers should be actively looking for symptoms of late blight and destroy tissue as soon as it occurs. If found, a spray program is recommended:
Week 1: Tanos + mancozeb, or Tanos + copper
Week 2: Mancozeb, copper, or mancozeb + copper
Repeat sequence.
Fungicides for late blight control in tomato greenhouses:

Fungicide	Rate/acre	Pre-harvest interval (days)	Restricted-entry interval (hrs)
Tanos	8 oz	3	12
copper	see label	0	24
mancozeb	1.5-3 lb	5	24

Note: Tanos must be tank mixed with and alternated with non-related fungicides. The rate for copper varies by product. No other fungicides effective against late blight are allowed for use in greenhouses. (SB)

Fig. 1. Late blight leaf and fruit infections. Photo courtesy of John Hamrick.

Fig. 2. Late blight stem lesions. Photo courtesy of John Hamrick.

Fig. 3. Late blight leaf lesion.

Phytophthora Crown and Root Rot in the New Strawberry Crop

There have been a couple of cases of plant death in the new strawberry crop in TN caused by Phytophthora crown and root rot, *Phytophthora cactorum*. Several cases have been reported from the eastern seaboard states. All cases appear to be related to plant tips originating in Prince Edward Island nurseries.

The disease adds more misery to the state of the new crop for some growers. The persistent rains caused some growers to have to forego fumigation and most growers to have to plant late. Many plantings did not go in until October, and planting in "dribs and drabs" was common. Best yields are usually attained with late September plantings.

If you suspect Phytophthora crown rot, submit a sample to the diagnostic lab for confirmation. This disease is difficult to positively diagnose by symptoms. It may be present only as a root rot in some plants (Fig. 4), and the interior of the crown remains white. If the infection invades the crown, the appearance resembles that of crown anthracnose.

If Phytophthora is present, apply Ridomil at 1 pt per treated acre (1/2 pt per actual acre) through the drip as soon as possible. An alternative treatment is a foliar application of Aliette (5 lb per actual acre) or one of the other phosphite products (ProPhyt, Rampart, Phostrol, Agri-Fos, Fosphite, etc.). These materials can also be used as preplant dips, but everyone, hopefully, has planted by now. Where this crown rot is present, an additional application of Ridomil is recommended in early spring, at green-up. (SB)

Fig. 4. Phytophthora crown and root rot of strawberry plants two weeks after planting.

Leaf Mold in Greenhouse Tomatoes

A lot of leaf mold (*Fulvia fulva*) inoculum abounds at this time, so tomato greenhouse operators need to be aware of the risk. Because of our unusual weather this fall, leaf mold has even been seen in outdoor tomatoes, where it seldom occurs.

Susceptible varieties need protection. All field varieties are susceptible to leaf mold, and most of our greenhouses are planted with field varieties. The spray program described above for late blight is also recommended for leaf mold. This disease will be difficult to control under conditions of such high humidity, upon which this fungus thrives. Try to remove all infected tissue, as you would for late blight, and destroy it so that it won't re-infect the plants. This fungus can survive in plant debris in and on the soil for at least one year.

Leaf mold is characterized by faint yellow spots on the upper leaf surface and olive to tan moldy growth on the lower surface (Fig. 5), followed by death of the leaf. (SB)

Fig. 5. Leaf mold on upper and lower surfaces of tomato leaves.

The *Fruit Pest News* URL is: http://web.utk.edu/~extepp/fpn/fpn.htm

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