

Timber Rot of Tomato

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Timber rot, a stem rot disease of tomato, is caused by the fungus *Sclerotinia sclerotiorum*. The fungus has a wide host range and can also attack beans, cabbage, carrots, celery, cucumbers, lettuce, onions, peas, pumpkins, and squash. Timber rot mainly occurs in plants grown in soil where the disease has been observed in previous years.

Symptoms

Watersoaked areas develop either at ground level on the main stem, at branch crotches, or at points of injury. Rot progresses from these areas. Stems that are rotted at the base may eventually be girdled. Tissue above the girdled area slowly wilts and dies. As the disease progresses, a white, fluffy mycelium covers the surface of the stem (Fig. 1). Inside stems that are sliced lengthwise, a grayish-white mycelium, embedded with pea-like, hard, black sclerotia 1/4 inch (6 mm) in length, may be apparent. Infected fruit develop a watery, soft rot.



Fig. 1. White, fuzzy mycelium of *Sclerotinia sclerotiorum* on stem base of a tomato plant. Sclerotia are beginning to form on the mycelium. (Photo by M.A. Hansen)

Disease Cycle

Fungal sclerotia are resistant to weathering and can survive in the soil for many years. Under cool, moist

soil conditions the sclerotia produce mycelium that infects stems near the soil surface. Sclerotia also produce spore-producing structures, called apothecia, that release ascospores in the spring. Ascospores are wind-disseminated and can cause infection within two days of landing on a plant.

Timber rot usually does not affect tomato plants until they begin to flower. At this stage, plants have sufficient foliage so that the soil around the stem is shaded and remains moist. Disease development is promoted by long periods of cool, wet weather, frequent rain, overhead sprinkling, fog, or heavy dews. When soil moisture is high for extended periods and the air temperature is 70°F (29°C) or below, conditions are ideal for the development of timber rot.

Control

Cultural Control

- Plant tomatoes in well drained soil.
- Rotate tomatoes with non-susceptible vegetables, such as sweet corn. (Note that some weeds are also susceptible.)

Chemical Control

- In commercial fields, the fungicide, benlate (e.g. Benlate), can be applied to prevent infection at flowering. Sprays should be initiated when the first flowers appear and repeated once 7 days later. Refer to the current Virginia Commercial Vegetable Production Recommendations (VCE Publication 456-420) for details on fungicide control.

Resistance

- No resistant cultivars of tomato are available.

Refer to the current Virginia Pest Management Guide for Home Grounds and Animals (VCE Publication 456-018), <http://pubs.ext.vt.edu/456-018/>, for details on the proper use of pesticides.

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