

Plant Pathology Fact Sheet

Southern Blight

by Paul Bachi and Kenny Seebold

Southern blight affects a wide variety of crops, but the disease most commonly occurs in Kentucky on ajuga, beans, cabbage, cucumbers, pepper, soybeans, and tomato. Other susceptible plants include apple, carrot, columbine, coreopsis, eggplant, lupine, muskmelon, peanut, pumpkin, peony, phlox, potato, radish, rhubarb, sweet woodruff, tarragon, tobacco, turnip, watermelon, and vinca.

Symptoms

Southern blight causes a sudden wilting of the foliage, followed by yellowing of the leaves and browning of stems and branches (FIGURE 1). Wilting and plant death result from a decay of the stem or crown at the soil line. Infected tissues are frequently covered with a white, fan-like fungal mat of mycelium (FIGURE 2). As the disease progresses, numerous small, round fungal bodies (sclerotia) appear embedded in the fungal mat (FIGURE 3). Initially the sclerotia are white; later becoming light brown, reddish brown, or golden brown in color. Each is about the size of a mustard seed.



FIGURE 1. PEPPER PLANTING WITH SOUTHERN BLIGHT

Cause and Spread

Sclerotium rolfsii is the causal agent of southern blight. This fungus survives as mycelium and sclerotia in the soil and in decomposing plant residue. The fungus is moved by running water, on infested soil particles clinging to cultivating tools, on infected plant material, and as sclerotia mixed with seeds. Disease development is enhanced by high temperatures and humidity. The disease is also more severe where undecomposed organic matter is left on and in the soil. Sclerotia enable the fungus to survive adverse conditions and can persist in the upper layers of soil for many years.

Disease Management

- **SANITIZATION.** Remove infected plants, whenever practical. This can most easily



FIGURE 2. PEPPER PLANT WITH SOUTHERN BLIGHT. NOTICE THE TYPICAL FAN-LIKE MYCELIAL GROWTH OF THE PATHOGEN.

be done in gardens and landscapes. Dig up infected plants being sure to remove the surrounding soil and plant debris. Steps should be taken to avoid allowing sclerotia to drop back onto the planting site.

- **IMPROVE AIR CIRCULATION.** Thin the planting to improve air circulation and drying. Moisture trapped within a dense plant canopy will favor disease development.

- **CROP ROTATION.** Practice crop rotation using less susceptible plants such as corn, sorghum, small grains, and grasses.

- **BURY SCLEROTIA.** Deep plow fields or gardens early to bury sclerotia and to allow for the complete decomposition of plant residues. Sclerotia will not survive as well when buried at least 6 inches. During cultivation, avoid “dirtying” practices that throw excessive soil and debris against stems and other plant parts.

- **PHYSICAL BARRIER.** Home gardeners may consider creating a physical barrier to infection by the southern blight fungus. This can be accomplished by wrapping the lower stems of susceptible plants (like pepper and tomato) with aluminum foil so that the lower, below-ground portion of the stem and 2 to 3 inches of the above-ground portion are covered.

- **FUNGICIDES.** Several fungicide options are available to commercial growers, depending upon the crop being grown. Effective materials include PCNB (Terraclor), azoxystrobin (Quadris), fluoxastrobin (Evito), and pyraclostrobin (Cabrio, Headline). Azoxystrobin and PCNB should be used at the time of planting; be sure to consult the label before making this application to ensure the use is labeled for your crop and to obtain specific use directions and restrictions.

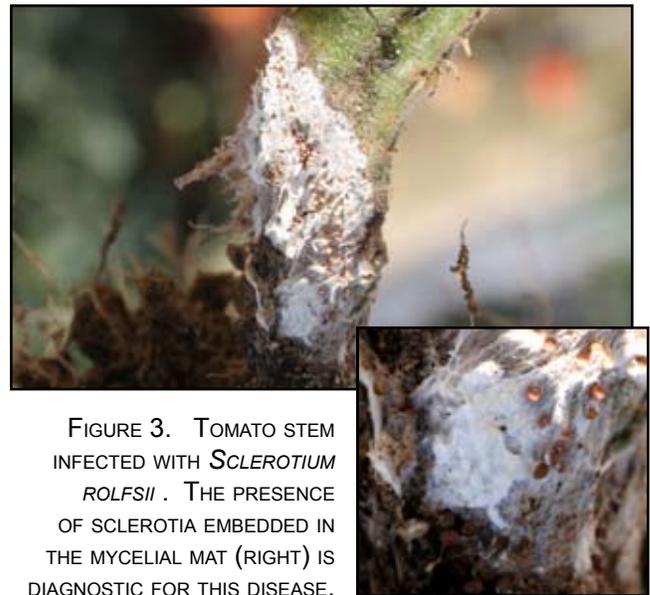


FIGURE 3. TOMATO STEM INFECTED WITH *SCLEROTIUM ROLFSII*. THE PRESENCE OF SCLEROTIA EMBEDDED IN THE MYCELIAL MAT (RIGHT) IS DIAGNOSTIC FOR THIS DISEASE.

(Revised January 2008)