

White Mold Disease

Peng Tian, Plant Diagnostic Clinic



The MU Plant Diagnostic Clinic recently received an alfalfa sample and a tomato sample. Both of them were diagnosed with white mold disease caused by *Sclerotinia sclerotiorum*.



Figure 1. White mold (aka timber rot) of tomato Photo: Peng Tian

Name: *Sclerotinia sclerotiorum*

Overview: The white mold disease on tomato is also called timber rot while on alfalfa, it is called *Sclerotinia* crown and stem rot. This disease can also affect soybean, clover and many vegetables. In the cool and moist condition, the pathogen affects the crown and stem tissues of the plant. As the disease progresses, white mold spreads inside and outside of the stem, causing stem and crown rot. When humidity and temperature becomes favorable for this disease, black and hard structures with irregular shapes, also known as sclerotia, are produced among the white mold. They are the overwinter survival structures that can stay in the soil for many years, making it very difficult to control this disease.

Diagnosis: The black and hard sclerotia is very characteristic for white mold caused by *Sclerotinia sclerotiorum*. There are other diseases that are also caused by *Sclerotinia* spp. The southern blight of tomato is caused by *Sclerotium rolfsii*, which is very easy to be confused with white mold disease. In contrast with the morphology of sclerotia of white mold, southern blight yields many tan to reddish-brown, spherical sclerotia (1 to 2 mm in diameter) and they are very similar in both shape and size.

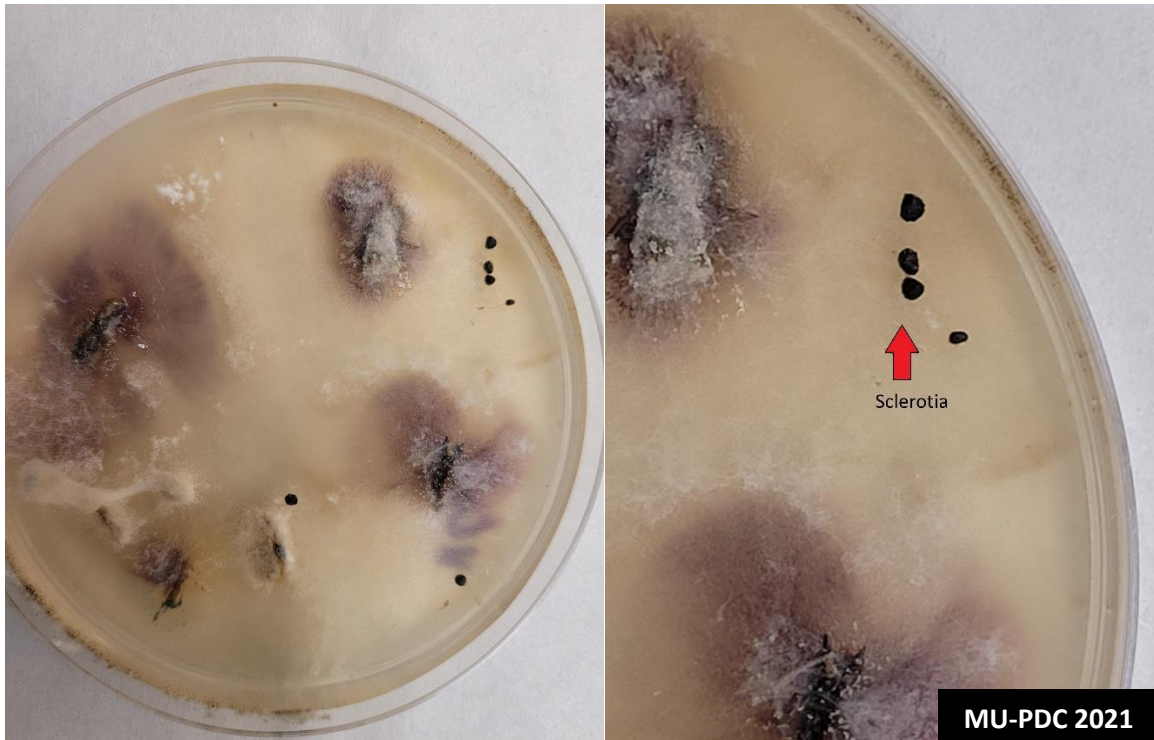


Figure 2. Black sclerotia produced on the selective media Photo: Peng Tian

In addition to alfalfa, *Sclerotinia sclerotiorum* is a very common disease for soybean. Another *Sclerotinia* crown and stem rot of alfalfa is caused by *Sclerotinia trifolium*, which is the one most commonly identified on alfalfa.

Disease management:

1. Crop rotation is not very effective since the sclerotia can survive in the soil for extended period of time and the disease has a broad host range.
2. Sanitation by removal the infected plants carefully is important for small farm growers or home gardeners.
3. This disease favors high humidity and cool weather, thus improvement of air circulation and prevention of water splash are helpful in reducing the spreading of this disease.
4. Weeds control is helpful to control this disease since it can open more space for the plants to increase the air flow and one the other hand, susceptible weeds can become inoculum source of new infection
5. There are limited number of resistant/tolerant cultivars for some species of plants available in the market.
6. Fungicides labeled for this diseases are available for several plants especially the row crops but they may not be cost-effective. Please follow the label instruction and restrictions when using them.

References:

1. **White Mold on Tomato**, Paula Flynn, Iowa State University Extension and Outreach (https://hortnews.extension.iastate.edu/2006/6-28/tomato_mold.html)
2. **White mold on tomatoes**, Margaret McGrath, Vegetable Pathology – Long Island Horticultural Research & Extension Center (<https://blogs.cornell.edu/livepath/gallery/tomato/white-mold-on-tomatoes/>)
3. **Sclerotinia Crown and Stem Rot on Alfalfa (AKA: White Mold)**, Jaime Cummings of NYS Integrated Pest Management, and Janice Degni of Cornell Cooperative Extension, Cornell Field Crops (<https://blogs.cornell.edu/ccefieldcropnews/2019/05/24/sclerotinia-crown-and-stem-rot-on-alfalfa-aka-white-mold/>)
4. **Southern Blight of Tomato and Pepper**, Inga Meadows, Amanda Scherer, Michelle Henson, NC State University Extension (<https://content.ces.ncsu.edu/southern-blight-of-vegetable-crops>)

For appropriate diagnosis, the MU Plant Diagnostic Clinic can help you confirm if your plant has this disease. We encourage you to visit our website (<https://extension.missouri.edu/programs/plant-diagnostic-clinic>) and review submission guidelines before submitting your sample. If possible, you may take photos and send them to plantclinic@missouri.edu.

We just uploaded a new webinar about sample submission guidelines on YouTube to help you submit your sample step by step. Please click here: <https://www.youtube.com/watch?v=4dUcYKKFwal>

For sample submission and fee payment, you can either:

- 1) Visit our new online submission system at <https://extension.missouri.edu/services/plant-disease-sample>. Fill out the submission form online using your computer or mobile device and make payment online securely with a credit card.
- 2) Download the submission form at <https://extension.missouri.edu/programs/plant-diagnostic-clinic/sample-submission>. Fill it out and send to us together with your sample and payment. Check or money order. No cash please.

Contact information:

University of Missouri–Plant Diagnostic Clinic
28 Mumford Hall
Columbia, MO 65211
Phone: 573-882-3019
Email: plantclinic@missouri.edu