Sclerotinia Crown Rot And Stem Rot Of Alfalfa

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April 12, 2012 – Sclerotinia crown and stem rot (SCSR) was diagnosed last week in western Kentucky, causing substantial damage to a fall seeding of alfalfa. This disease attacks fall-seeded stands because the fungus produces spores in the autumn, mostly from mid-October through November. Spring-seeded stands usually have adequate resistance to infection by the time spores are produced. However, fall-seeded stands are still vulnerable to infection, and so they may suffer stand loss. The stand losses caused by SCSR vary from minor to very severe (Figure 1).

Symptoms and Signs

Symptoms likely to be seen at this time of year are as follows:

• Yellowing, wilting, and browning of randomly scattered plants throughout the planting. During humid conditions, infected plants may exhibit white fungal are typical of ongoing infections, so these fields will probably continue to experience disease development for several more weeks. If weather remains generally cool and wet, disease development could continue for as long as 4-6 weeks. Sustained periods of warm, dry weather will arrest the disease.

• Disease does sometimes cause complete or nearly complete death of plants. In other words, alfalfa seeded last fall may simply fail to green up (as in Figure 1). For stands that were lush and vigorous going into winter and then died during winter, Sclerotinia crown and stem rot is the most likely culprit (although not the only culprit).

Look for fungal survival bodies called "sclerotia" to diagnose this disease. The sclerotia look like tiny black pebbles about 1/16 to 1/8 inch in size, with a white or gray center (Figure 3). They can be found attached to dead plants. If plants have been rotted away, the sclerotia will be scattered about on the soil surface where plants once were present.

Management

There are a few alfalfa varieties that show partial resistance to this disease. Complete resistance is not available in commercial varieties, but partial resistance can reduce stand loss caused by this disease. If considering a late-summer seeding, it is important to use a variety that has been shown to exhibit partial resistance under field conditions in Kentucky. This is important because some of the worst disease pressure from Sclerotinia crown and stem rot in the nation is in Kentucky. Variety evaluations conducted in other states are useful, but if a variety hasn't been tested for resistance under Kentucky conditions, it hasn't been adequately tested for use in Kentucky.

The variety Phoenix has been shown to have a significant level of Sclerotinia resistance under Kentucky conditions, so that is certainly one to consider for late-summer plantings. Be aware that these varieties can still suffer stand loss from the disease, but they will suffer considerably less stand loss than the many susceptible varieties on the market. Cimarron SR is also a good choice from the standpoint of Sclerotinia. Beyond these, I am unaware of other varieties that have held up against the severe disease pressure we sometimes get in Kentucky.

Growers with crops sustaining outbreaks of this disease should take this opportunity to determine which fields are showing the problem. This will help them identify fields in which to avoid fall seeding in the future. The Extension publication Risk Factors for Sclerotinia Crown and Stem Rot in Fall-seeded Alfalfa (http://www.ca.uky.edu/agcollege/plantpatholog y/ext_files/PPFShtml/PPFS-AG-F-2.pdf) has more information on the disease. Δ

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Figure 1. Complete stand loss from a severe outbreak of Sclerotinia crown and stem rot of alfalfa.

Figure 2. White fungal growth on rotting alfalfa crown, indicating an active infection of SCSR.

Figure 3. Black, hardened survival bodies of the SCSR fungus (at arrow).