



UNIVERSITY OF WISCONSIN AGRONOMY, SOYBEAN RESEARCH, UNIVERSITY OF WISCONSIN-EXTENSION

White Mold in Soybean in 2010 – Factors to Consider

Paul Esker, Angie Peltier, John Gaska, and Shawn Conley

Field Crops Extension Plant Pathologist, Postdoctoral Research Associate, Senior Outreach Specialist and State Soybean and Small Grains Specialist

We have started to receive an increase in the number of questions about the risk of white mold (syn., *Sclerotinia stem rot*) in soybean in 2010, especially given the yield losses we witnessed during the 2009 growing year. White mold is caused by the fungus *Sclerotinia sclerotiorum*. Weather conditions during early 2010 have been very favorable for soybean growth and development and the majority of fields are considered in the good to excellent range (Source: USDA-NASS). As we head into the early flowering period, now is an excellent time to begin to consider the factors that may influence the risk of white mold occurring in the field.

Understanding risk of white mold begins with knowledge of the field history of disease and the level of resistance in the soybean variety that was planted. Over the winter, we advised growers to ask their seed dealers questions about the level of field tolerance in varieties they are considering planting and to consult the [White Mold Variety Performance Tests](#). Knowledge of both of these factors can help determine your baseline level of risk for white mold.

As plants move into flowering, several biotic and abiotic risk factors need to occur for white mold to be a problem in the field. Environmentally, moderate temperatures (less than 85°F, with optimal temperatures from 68 to 77°F), normal to above normal rainfall, soil moisture at or above field capacity, periods of prolonged fog and leaf wetness at or just after flowering can all increase the risk of disease. White mold is a disease of high yield potential soybeans. Agronomic practices that maximize yield potential and encourage early canopy closure, such as early planting date, higher plant populations, and narrow row spacing can also increase the risk of disease.

Scouting can also be used to determine if potential inoculum of *S. sclerotiorum* is present. As the soybean canopy closes, scouting for apothecia is important. Apothecia are tan, cup-shaped mushrooms (0.5-2mm in diameter) that can be found on the soil surface (Figure 1). Apothecia produce the spores of *S. sclerotiorum* that infect soybean plants. Previous research has shown that apothecia production is related to soil moisture and temperature, and the timing and density of the crop canopy closure.



Figure 1. Apothecia of *Sclerotinia sclerotiorum*. These small (0.5-2 mm in diameter), tan fruiting structures produce spores that can infect senescing soybean flowers. Parting the soybean canopy and inspecting the soil for apothecia is an important way to determine your risk of white mold.

After considering your risk for white mold, you may decide to use a foliar fungicide or herbicide to manage disease. Several fungicides (Topsin, Domark, and Endura) are labeled for control of white mold on soybean. Consider the following before deciding to spray: 1) proper application timing is essential; applications should be made at flowering to protect senescing flowers from infection and 2) spray coverage is also essential; sprays must penetrate the canopy in order to protect flowers. Also, there has been an increase in the number of questions regarding the use of Cobra herbicide. Applications of Cobra have been shown to reduce leaf area index and to delay flowering, leading to reduced disease severity and higher yields. However, caution is recommended, as there can be a yield cost if environmental conditions for white mold are not favorable (Nelson et al. 2002). Also, there have been several questions about the use of other herbicides that may cause similar physiological response in soybean like Cobra. Please keep in mind that white mold suppression is listed on the Cobra label and a check of several labels in the diphenyl ether class of herbicides do not have the same wording regarding white mold suppression. In 2009, results from fungicide trials in WI and IL were variable, depending on location. This is similar to previous research (Mueller et al. 2002) that showed that effects of foliar fungicides are inconsistent, when the incidence of white mold was high.

For further information consult:

- 1) [The Soyhealth Website](#)
- 2) [UWEX YouTube Video on White Mold in Soybean](#)

References:

Mueller, D. S., Dorrance, A. E., Derksen, R. C., Ozkan, E., Kurlle, J. E., Grau, C. R., Gaska, J. M., Hartman, G. L., Bradley, C. A., and Pedersen, W. L. 2002. Efficacy of fungicides on *Sclerotinia sclerotiorum* and their potential for control of *Sclerotinia* stem rot of soybean. *Plant Disease* 86:26-31.

Nelson, K. A., Renner, K. A., and Hammerschmidt, R. 2002. Cultivar and herbicide selection affects soybean development and the incidence of *Sclerotinia* stem rot. *Agronomy Journal* 94:1270-1281.