White mold mushroom hunt

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Abstract
The wet soil this summer has raised some concerns about soybean white mold. After soybean canopies, white mold fungus produces apothecia, tiny mushroomlike structures that produce spores to infect soybean. In recent extension activities such as Iowa State University (ISU) field days, producers wanted information on white mold risk this season and how to scout for apothecia. Some of the more common questions asked are presented below.

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When should you look for apothecia?

I have been monitoring the production of white mold mushrooms in infested fields in Ames as well as in other central Iowa locations. I did not observe any apothecia until July 5 in a drill-planted soybean field that had severe white mold in 1996. This is a late-planted field and soybean has just closed the canopy. In the last two years, we first spotted apothecia in the third week of July in northern Iowa and one week later in central Iowa. If sufficient soil moisture is available and soybean has a good canopy, we should see a flush of mushroom production in late July in white-mold-infested fields. Apothecia production can last late into the growing season.

What does the white mold mushroom look like?

Apothecia are produced by sclerotia that are on the soil surface or within 2 inches of the soil surface. Often one sclerotium will produce several apothecia that form a cluster of mushroomlike structures about 1/3 inch in height. There are many other non-white-mold mushrooms in soybean fields that can be mistaken for white mold mushrooms by the first-time scouter. The most common one is the birdnest mushroom. Fresh birdnest mushrooms are similar in size and shape to those of the white mold apothecia. When birdnest mushrooms are mature they darken and have several egglike seeds inside.

How does the number of apothecia relate to white mold risk?
If the weather is favorable for white mold development, it does not take many apothecia to cause damage in an area of one square yard because the white mold spores are airborne. Studies from ISU and Michigan State University showed that a cluster of 4 or 5 apothecia can infect 20 percent of soybean plants in a patch 3 feet from the apothecia. Currently, there is no established threshold for white mold mushroom to guide chemical control.

The risk also depends on when the flush of apothecia production occurs. To have a white mold epidemic in a field, the window of flowering must overlap with the window of white mold mushroom production. In the 1996 growing season, the weather conditions were not favorable for white mold until late July and the flush of apothecia production occurred at the end of July and into early August. In 1996, there was more white mold in late-planted soybeans than early-planted soybeans, especially in northern Iowa.

Keep in mind that if you do not have experience in scouting for apothecia, you should not rely on the presence of apothecia to assess the disease risk. It is more reliable to assess the risk with disease information in your last soybean crop.

**What should you do if you see apothecia?**

You can use fungicide if you find the apothecia when soybean is just beginning to flower but not later than the middle of flowering. If you use Topsin, you would need to spray twice to have satisfactory disease control according to the data that we collected last year. The cost of $20/acre per application will be a concern and you may want to apply to seeds or to a confined area to prevent the buildup of this disease. The herbicide Cobra also is labeled to suppress white mold infection; however, the label says that it must be applied at or near bloom.

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