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Recommendations for Managing Soybean White Mold in 2010

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Recommendations for Managing Soybean White Mold in 2010

Abstract

The 2009 growing season had record cool weather in July that was ideal for soybean white mold occurrence. The disease was widespread in the north central region of the U.S. and agronomists even in southern Iowa observed this disease in many soybean fields. In northern Iowa, patches of soybean killed by this disease were obvious in many soybean fields along the highways. Some farmers reported losses totaling more than \$10,000 from this disease.

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Recommendations for Managing Soybean White Mold in 2010

By X.B. Yang, Department of Plant Pathology

The 2009 growing season had record cool weather in July that was ideal for soybean white mold occurrence. The disease was widespread in the north central region of the U.S. and agronomists even in southern Iowa observed this disease in many soybean fields. In northern Iowa, patches of soybean killed by this disease were obvious in many soybean fields along the highways. Some farmers reported losses totaling more than \$10,000 from this disease.

Previously, white mold epidemics occurred mainly in even-numbered years because of the use of corn-soybean rotation plans. The outbreaks in 2009 were the first in an odd-numbered year since 1997 and they covered almost entire north central region of the country except for areas west of Missouri River. The 2009 epidemic suggests that there are plenty of white mold inoculum in the soil in the region and that it will be necessary to take precautions in 2010 to minimize the white mold risk for the 2010 season and following years.

Following are recommendations for 2010 for specific field conditions.

If your soybean field had white mold in 2009 and the field will be in corn in 2010:

If you found severe white mold in your fields in 2009 season, use no-tillage if corn is the 2010 rotation crop. Rotation with corn in no-till can reduce soybean white mold risk. Tillage will bury the sclerotia into soil, which increases the survival rate of white mold fungus. Sclerotia can survive in deep soil up to seven years. Sclerotia within 2 inches of the soil surface germinate and produce spores even in corn fields. Under no-till a large portion of the sclerotia germinate under the corn canopy, which reduces the amount of pathogen in the soil. White mold risk in tilled fields was 2-4 times higher than in no-till fields according to a study conducted 10 years ago (see figure).

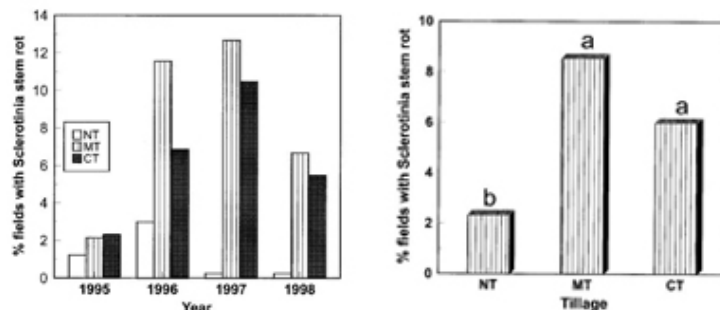


Figure 1. Tillage effects on soybean white mold occurrence from survey data collected in 1,500 fields in the North Central Region.

Rotation with seed corn fields will not be effective in white mold management because sclerotia do not germinate in an open corn canopy field caused by detasseling. Don't plant seed corn in a field that previously had white mold on soybean as rotation with seed corn fields increases white mold risk.

Fields that had white mold in 2009 should not be in soybean in 2010. It will be a mistake to plant soybean after soybean in 2010. The risk can be high unless 2010 is a dry season.

You can also consider applying Contans to break the disease cycle. Contans is a product from a biological control agent proven to be effective in white mold control in many crops. It has been used to control white mold in many high value crops and is labeled for soybean. Unfortunately, little research data from public sector are available on using Contans to control soybean white mold.

If your field was in corn in 2009 and will be in soybean in 2010:

If a field had a white mold outbreak in the last few years and will be in soybean in 2010, you should avoid using susceptible varieties in 2010 and consider using white mold tolerant varieties for your next soybean rotation. High yielding, white mold-tolerant varieties are available. One thing to keep in mind is that the tolerance protection sometimes may not work due to a lack of consistency in disease pressure during the breeding of the mold-tolerant variety. Also, avoid planting soybean with narrow rows (15 inches or less) in fields that had white mold in the past.

Chemical control is an option if white mold risk is high in the coming season. Unlike many years ago when there were only two fungicides available for white mold control, there are several fungicides on the market for white mold control now. Not all fungicides are effective for white mold and it is very important to use the right fungicides to control white mold. Read labels when you making your plans this winter. Knowing the risk of white mold infection in July is the key to a good economical return in control of white mold.

XB Yang is a professor of plant pathology with research and extension responsibilities in soybean diseases. Yang can be reached at (515) 294-8826 or by emailing xbyang@iastate.edu.

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