Cotton Target Spot and Boll Rot Spreading Rapidly

Anthracnose boll rot (Glomerella gossypii and Colletotrichum gossypii) and Diplodia boll rot (Diplodia gossypina) are showing up on the rise in cotton fields across the Southeast. But the number one disease threatening cotton yields, particularly in the lower Southeast, is target spot (Corynespora cassiicola).

Weather Encourages Disease

“Both anthracnose boll rot and diplodia boll rot are very common in a lot of Georgia cotton fields this year, and I attribute it to the weather conditions and lush cotton growth,” says University of Georgia plant pathologist Bob Kemerait. “I’ve very rarely seen anthracnose boll rot, but it is present in many fields this year. It’s not so much the total amount of rainfall we’ve had this season, but the frequency of rainfall, the number of cloudy days and the high humidity in the plant canopy that is translating into a higher incidence of both boll rot and target spot.”

“Growers and consultants are looking for help determining which specific diseases are in their fields,” Kemerait says. “Leafspots on cotton can be very confusing and difficult to diagnose. It takes a trained eye and sometimes microscopic analysis to confirm disease diagnosis. Growers and consultants have sent me pictures of what they thought was bacterial blight. So far this year I have only identified bacterial blight (angular leaf spot) in a couple of fields and we have not recorded bacterial boll rot in our diagnostic lab.”

Target Spot

“The number one disease we are concerned about, and the one I’m getting the most questions about, is target spot,” Kemerait says. “This disease is a significant problem in many fields, and it’s spreading. It’s causing almost explosive defoliation from the bottom of the plant to the upper 10 to 15 percent of the canopy. Growers or consultants need to be in the cotton fields, looking at the entire canopy. The top of the canopy may look robust while the disease is developing rapidly in the lower canopy. We have to get in the fields or we may not see the disease developing in time to reduce damage with timely fungicide applications. If anyone still has doubts about the importance of target spot, or the need for fungicides, I would love to show them some of our fungicide studies. In one instance, target spot that was hard to find on one date had caused 50 percent defoliation in untreated plots two weeks later. I strongly encourage growers to scout cotton fields, especially those with: cotton behind cotton, conservation tillage, irrigated, rank growth, or a history of target spot, to determine if a problem is developing.”
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Timely Fungicides are Effective

For effective control, timing of a fungicide application is critical. “Research has clearly shown both the benefits of applying fungicides to reduce defoliation, and the importance of timing. If the cotton is less than 15 percent defoliated, and the crop is within the first four to six weeks of bloom, there is still time to spray,” Kemerait says. “We should also be four to six weeks away from defoliation. While I cannot ensure that an application of fungicide at this time will increase yields, I believe that the potential for explosive disease in the field, coupled with resulting yield losses, justifies the use of a fungicide. After the fifth or sixth week of bloom, the canopy will likely be too thick to allow good fungicide coverage. I would not spray if any of the following apply: more than 20 percent defoliation and spots throughout the canopy, dryland cotton with poor canopy development or yield potential, well-rotated cotton where very little target spot is found and the disease does not seem to be developing.”

Select an Effective Fungicide

“It is my observation that Headline® (6 fl oz/A) is a very good fungicide to use,” Kemerait says. “TwinLine® (8.5 fl oz/A) is also an effective fungicide, as is Quadris®, but I have less experience with it.”

Other Diseases

“Along with target spot, we are also seeing a fair amount of Stenphylium leaf spot and some Cercospora leaf spot this season,” Kemerait says. “We have seen very limited angular leaf spot but have not seen bacterial boll rot (Xanthomonas axonopodis pv. malvacearum (formerly referred to as Xanthomonas campestris pv. Malvacearum and Xanthomonas malvacearum). However, we are seeing significant fungal boll rot, caused by diplodia and anthracnose. A lot of growers are asking if they should spray a fungicide. The primary concern is whether or not we can get good coverage. My recommendation is not to expect much effect against boll rot from a fungicide at this stage of the season.”

Observations and Recommendations

“In addition to possibly applying fungicides for control of target spot or other diseases, growers can potentially reduce disease development by controlling cotton growth with timely applications of a growth regulator,” Kemerait says. “By regulating cotton growth, we are better able to regulate air movement and control humidity in the canopy. Growers should also consider that light levels of defoliation may not be a bad thing. Some defoliation from light disease pressure may also help reduce boll rot by increasing air movement and reducing humidity in the canopy.”