Plant Disease and Insect Advisory

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Soybean Disease Update

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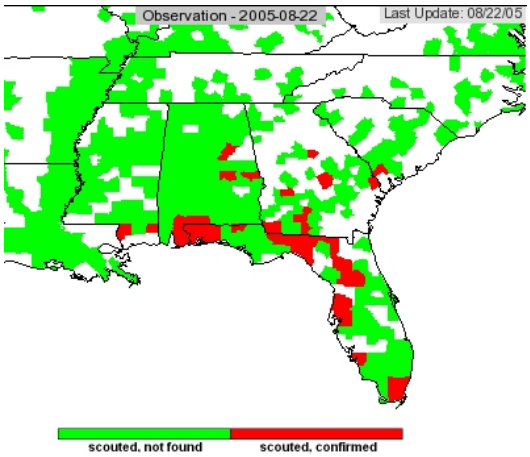
Drought, rather than soybean rust, is the biggest concern for soybean production in Oklahoma this year. The soybean rust monitoring team in Oklahoma (Bob Woods, Chris Rice, Stan Fimple, Tommy Pinkard, and Rocky Walker) have been vigilant in monitoring the sentinel plots in Oklahoma for soybean rust this year. None has been detected in OK or in surrounding states. We have almost certainly escaped a rust outbreak this year. As covered in the soybean meetings this past year, the disease triangle (susceptible crop, favorable weather, and presence of the pathogen) must be simultaneously completed for a disease outbreak to occur. Until the recent rains and humidity, we generally did not have much rust-favorable (rainy) weather this year. Drought was a more important factor. Early-planted MG3 beans have been hard hit by the dry weather. Either it was too dry to plant them or they stressed severely during pod fill. We still have a chance to make a good crop of MG5 beans planted in June if they did not burn up prior to the rains. In my fungicide trials at Haskell, the April-planted MG3 trial was looking great until about Aug 1 when drought stress caused significant damage. We will harvest beans, but quality will be low. The MG5 trial looks strong as a result of the recent rains. They are currently setting pods with plenty of moisture.

Spore of the rust fungus were also missing from the disease triangle this year. The disease has been reported on soybeans thus far in five states (GA, FL, AL, SC, and MS). Most of the positive reports are from sentinel plots, although a few commercial fields have been confirmed to have rust. The rust epidemic in the southeast has been slow to develop despite the good rains and/or tropical storms that would appear to have favored rapid disease development there. The disease appears to have been limited by low inoculum (spore) levels.



Other foliar diseases of soybeans in OK have been observed this year. Septoria brown spot has been the most common and severe (Figs. 1 and 2). This disease is present in almost every field previously cropped to soybeans and appears, at a glance, very similar to advanced symptoms of rust. There was heavy brown spot in my MG3 fungicide trial at Haskell this year, affecting up to about 50% of the leaves. However, drought damage is likely to have masked any possible disease effects on yield. Most of the leaves dropped from drought stress before good late-season disease ratings could be taken. Brown spot is also present in the MG5 trial at Haskell, but at a

lower level. We may still learn something about the effects of fungicides on brown spot, and the effects of brown spot on yield from this trial. The disease is generally regarded as minor.

Fig. 1. Brown spot (*Septoria*) in the lower canopy.

Fig. 2. Close up of brown spot.

Downy mildew has also been observed in a few fields (Figs. 3 and 4). It was observed in Ottowa Co. in a few commercial fields and is pretty heavy MG4 and MG5 plots at Haskell. Unlike brown spot which starts low on the plant, downy mildew tends to occur in the upper parts of the plant canopy. Downy mildew is also generally regarded as a minor disease of soybean.

Fig. 3. Chlorotic spots on soybean leaves caused by downy mildew.

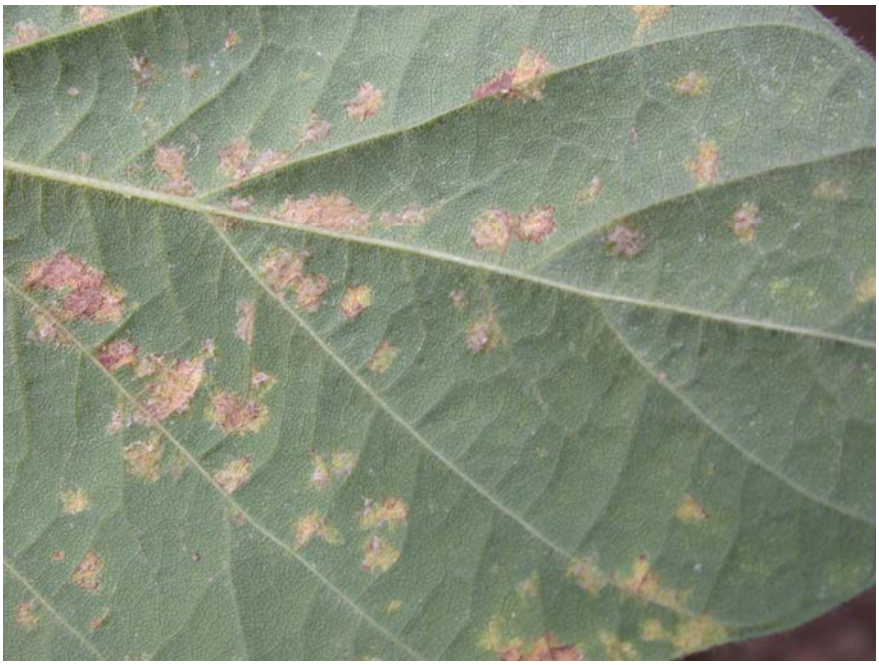


Fig. 4. Downy mildew producing spores in tan colored tufts on the lower leaf surface.

A bacterial disease is also fairly common in soybeans this year (Fig 5). It occurs at low levels in the upper canopy. On the back side of affected leaves, the spots appear dark and water-soaked. Pustules on the lower leaf, typical of bacterial pustule caused by *Xanthomonas*, are not produced, but *Xanthomonas* and not *Pseudomonas*, the cause of bacterial blight, has been isolated from these spots. We will be trying to figure this one out.

Fig. 5. Bacterial leaf disease on soybean.

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