

Program 6SB-2

► Disease Concerns In Mid - South Soybean Production

Presented by Dr. Trey Price

Assistant Professor / Field Crop Pathology, LSU AgCenter

In 2014, many seedling, foliar, and root/stem diseases affected soybean in the Mid-South. Early in the growing season, conditions were favorable for seedling disease development. Cool, wet conditions forced many producers to plant within narrow windows with many forgoing fungicide seed treatments in a year when they were needed. As a result, seedling diseases were noted throughout soybean producing areas in Louisiana. Rhizoctonia seemed to be the most prevalent pathogen causing disease in Louisiana.

Frogeye leaf spot was the most prevalent foliar disease in Louisiana soybean causing significant losses in susceptible varieties. The disease was widespread throughout soybean producing areas in Louisiana with the heaviest disease pressure in the northeast region of the state. Two fungicide applications were commonplace, and in some cases, management required more. Fungicide trials at the Northeast Research Station (NERS) in St. Joseph and MRRS indicated that products containing only strobilurin fungicides did not effectively manage the disease. These trials also indicated that products containing triazoles were effective against frogeye. Additionally, many samples containing the pathogen were sent to cooperating universities, and all were determined to be resistant to strobilurin fungicides. To date, resistance in the frogeye pathogen has been confirmed in 11 parishes. Moderate to heavy disease pressure in the official variety trial at NERS allowed for accurate identification of resistant varieties.

Compared to previous years, *Cercospora* leaf blight (CLB) was very light in Louisiana during the 2014 growing season. Nevertheless, the disease was present mainly in central and southern parts of the state. Results from trials at Dean Lee Research Station (DLRS) in Alexandria did not indicate any products that are effective against CLB. Research from previous years indicates that the majority (~85%) of this pathogen population is resistant to strobilurin fungicides. About one-third of the pathogen population also is resistant to benzimidazole fungicides. Resistance has

not been identified in triazole or SDHI compounds; however, the pathogen population is currently being monitored for changes in sensitivities.

A relatively new disease, currently known as “black root rot” or “mystery disease”, was prevalent in Louisiana during 2014. The suspected causal agent is *Thielaviopsis basicola*, a seedling pathogen of cotton; however, this has not yet been confirmed. Symptoms are first noticeable during the reproductive stages of soybean, particularly during pod fill. Interveinal chlorosis and necrosis on leaflets are the main symptoms. Under closer inspection, adjacent seedlings in the furrow have died earlier in the season unnoticed. When excised, soybean roots will exhibit a black, rotted appearance, and previous crop debris exhibiting a black color is usually found near affected roots. In the northeast region of the state, disease incidence was up to 20% in some fields. Anecdotal evidence indicates that the disease is more prevalent where there is no/minimum tillage and soybean monoculture for several years.

Other soybean diseases of note that occurred in Louisiana during 2014 were red crown rot, southern death syndrome, brown spot, target spot, and anthracnose. Additionally, there were many instances of triazole fungicide burn noted throughout the season.