beans and producers should be on the lookout for this pest. Currently they are controlled with cheaper pyrethroid insecticides but there is documentation of increased tolerance to this class of chemistry and failures were common across the south in 2010.

As indicated earlier, any beans that are planted late or double cropped should also be scouted carefully for soybean loopers. Soybean loopers are defoliators and cause yield loss indirectly by removing the foliage that is required for photosynthesis to correctly fill pods out. Recent studies have shown that the most susceptible stage for yield loss is between R3 and R5 and if greater than 70% defoliation is obtained during this window, yield loss can be catastrophic. Currently soybean loopers are resistant to pyrethroid and organophosphate insecticides and there are only a handful of options currently labeled to adequately control this pest including; Intrepid, Belt, Tracer, Steward, and Larvin. Defoliation levels can increase quickly under severe pressure and action should be taken immediately during extreme outbreaks. In 2010, there were areas in the mid-south where thresholds were exceeded by 10X.

With the exception of 2010, stink bugs have been the most predictably and widely distributed pest across the mid-south. Stink bugs cause direct damage by feeding on the developing seeds which leads to loss of seed or quality dockage at the elevator. Stink bugs can be easily managed as long as the producer is aware of the differences in insecticidal efficacy among species and treats in a timely manner when thresholds are reached. Southern green, green, and redshouldered are easily controlled with pyrethroids and organophosphates. Browns are less susceptible to pyrethroids and are controlled better with the organophosphates, while redbanded stink bugs often require tank mixes of the two classes for adequate control.

In recent years growers have become more aware of the potential for yield loss from insect pest, however, it is critical for one to understand the damage potential of each of the most important insect pests of soybeans in the mid-south and be able to correctly match the appropriate chemicals to best control each pest to maintain yield. This paper will address the most yield limiting insect pest across the mid-south region that producers need to be aware of to manage for optimum yield potential.

Program 7SB-2

Influence Of Maturity Group, Row Pattern And Seeding Rate On Soybean Grown On Silt Loam Soils

Presented by Kevin A. Dillon

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Significant changes in the agriculture landscape have occurred in the lower Mississippi River Alluvial-flood plain. A large portion of silt loam soils have shifted from cotton to soybean production. Due to this change, research initiatives are focusing on several key agronomic issues associated with growing soybean on silt loam soils. This research focuses on the influence of row pattern (twin-row vs. 102 cm rows), maturity group (MG IV vs. V), and seeding rate across row pattern and MG. Because of the increased use of the twin row pattern in soybean production systems across the mid-south US, accurate data is needed concerning single versus twin row patterns and how these row patterns interact with maturity group and seeding rate. Six different seeding rates and a late MG IV and early MG V soybean variety were included. Stand count, plant height, NDVI, leaf area index, pod count, node count, seed weight, and yield data were collected in 2009 and 2010. Seeding rate influenced plant population whereas variety and row pattern had no affect on final stand populations recorded four weeks after emergence. As plant population increased, pods per plant also increased. Pod and node data were collected just prior to harvest. Seed rate had no influence on yield due to ‘the plants’ ability to compensate for lower plant populations. Both MG and row pattern significantly influenced yield. The early MG V variety yielded a mean of 85.6 kg ha-1, whereas the late MG IV variety yielded 69.2 kg ha-1. Row pattern contributed to yield differences as well; the twin row pattern enjoyed a mean of 81.2 kg ha-1, whereas the single row pattern had a mean of 73.6 kg ha-1. Higher NDVI values were collected from plants in the twin-row system and MG V variety. This MG and row pattern contribution to NDVI differences is due to the ability of the MG V variety to shade the row middles quicker and resulted in increased leaf area. These data will prove useful in providing lower Mississippi flood plain soybean producers assistance with agronomic decisions.

Program 4SB-2

Soybean Disease Management In Reduced-Tillage Systems

Presented by Dr. Boyd Padgett
Plant Pathologist, LSU AgCenter

An effective disease management strategy should consist of the following components: disease identification, cultural practices, genetic resistance, and fungicides. Proper disease identification is critical for effective management. This will determine the cultural practices implemented, the varieties selected, and the fungicides used.

DISEASE IDENTIFICATION AND DEVELOPMENT:

Cercospora Blight/Purple Seed Stain is the number one soybean disease in Louisiana. The disease is caused by the fungus Cercospora kikuchii. The foliar symptoms are usually not evident until soybean is in the mid to late reproductive stages of growth. Initial symptoms are small chocolate brown lesions on the petioles near the leaflet. As the disease progresses, foliar symptoms are expressed as a reddish brown to tan discoloration on the upper leaf surface in the upper canopy. Leaves have a leathery appearance. The fungus can sporulate in older lesions. The spore masses resemble ashes. Advanced stages of this disease result in premature defoliation, discolored pods, and reduced seed quality. The seed phase of this disease is evidenced by purple-stained seed at harvest.

This disease is favored by plant stress, temperatures between 70 to 80oF, and wet weather. The pathogen can be carried on seed and survives on plant debris in the soil. The fungus has also been isolated from some weeds. Risk to this disease is increased in reduced or no-till systems.

Aerial Blight can spread rapidly in soybean if not properly managed. This disease is caused by the fungus Rhizoctonia solani. This is the same fungus that incites sheath blight in rice. Initial symptoms appear as water-soaked greasy blotches on the leaves (usually in the lower to mid canopy). As the disease progresses, adjacent leaflets become stuck together by fungal mycelium (white cottony in color). If favorable conditions persist, the foliage becomes brown and pods will have reddish-brown lesions. Under high severity pods can abort from the plant. The disease is usually evident during and after the early reproductive stages of growth. The potential for risk is increased when soybean is rotated with rice.

Disease development is greatest during periods of warm temperatures combined with high relative humidity or free moisture. This disease can spread rapidly within the crop and should be managed immediately upon detection if the crop is in the late vegetative or reproductive growth stages. The fungus is soilborne and can survive on plant debris.

Soybean Rust is caused by the fungus Phakopsora pachyrhizi. Symptoms initiate in the lower canopy and begin as small brown to tan raised pustules (volcano-like) on the lower leaf surface. Spores produced in the pustules resemble sand and are tan in color when young. Older spores are darker in color. As the disease progresses, the pustules can coalesce and cause the leaflets to defoliate. Symptoms are usually evident when soybean is in the mid (R3) to late (R6) reproductive growth stages. Pustules can also be present on petioles and pods when disease is severe. Kudzu is another host for this fungus.

The disease develops best when temperatures are 59-77oF and when leaf wetness periods of 6 to 10 hours.

Pod and Stem Blight occurs most frequently on the stems and pods. The disease is caused by the fungus Diaporthe phaseolorum var. sojae Infection can occur early in the season; how-