date, proper fertilization, and water management. Results of current fungicide and Afla-Guard trials along with other management strategies will be presented.



**Program 2SB-2**

# Soybean Insect Pest Problems In The Mid-South, What To Watch For In 2011

**Presented by Dr. Angus Catchot**
*Extension Entomologist, MSU*

With recent declines in cotton acres across the mid-south, soybean acres have increased and producer's willingness to highly manage those acres for optimal yields has also increased. Currently, nearly 75% of the soybean acres in MS are scouted by independent certified consultants compared to only 5% in 2004. In 2009, producers in MS lost $33,145,538.00 due to insect pest. Cost plus loss estimates project that producer's lost $98,357,538.00 to insect pests of soybeans. The spectrum of soybean insect pest can change drastically from year to year. The abundance and proximity to other crops can greatly influence pest pressure in soybeans. For instance, prior to 2007, producer's in MS rarely treated for corn earworm in soybeans. This was primarily due to the fact that corn acres (preferred host) were down and soybeans were planted early. In recent years as corn prices have increased and more acres are planted in the mid-south region, growers have planted later maturing varieties and staggered their planting dates to avoid harvest difficulty. Increased corn acres have led to more corn earworms in the landscape ultimately finding their way to soybeans in damaging levels. In 2010, it is estimated that producers treated 650,000 acres for corn earworms alone. Pushing planting dates later also exposes the crop to other late season insect pests such as soybean loopers. Soybean loopers are migratory insects making their way north attacking soybeans later in the season. When soybeans are planted late or double cropped behind wheat, more of the crop is exposed to this late season insect pest than usual and causes more applications to control this pest. 2010 saw more than 700,000 acres treated for soybean loopers in MS. Environmental conditions can also have an influence on pest population in soybeans in the mid-south region. Typically, the stink bug complex (southern green, green, brown, redbanded, and redshouldered) is the number one insect pest of the mid-south. In 2009, the mid-south region experienced one of the coldest winters in years. As a consequence, stink bug numbers, particularly southern green and redbanded, were almost nonexistent. Since 2004, bean leaf beetles have also been a major concern for growers in the MS delta region. Bean leaf beetles are primarily defoliators of soybeans but will also move down the plant and scuff pods creating avenues for disease to infect the pods. Bean leaf beetles have been particularly troublesome since we have now documented tolerance to the pyrethroid class of chemistry in the delta region of MS. It also appears that AR and LA are seeing increased control problems with this pest in some areas as well.

As we move into the 2011 growing season there are several pests that producers need to be watching for. Corn earworms appear to be becoming a more annual than sporadic pest in recent years and should be of considerable concern. Corn earworms are highly attracted to flowering plants particularly grown in wide rows. In fact, we had numerous acres requiring 3 or more treatments in 2010. This pest is particularly troublesome since it feeds directly on the fruiting structures and causes direct yield loss through fruit removal. As corn acres stay at high levels in the mid-south there will continue to be a source of corn earworms to attack soy-

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 dif-