Mississippi Crop Situation

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This Weeks Planting Report

National Agricultures Statistics Services (Mississippi) Crop Progress for Week Ending 6/8/08

Crop	This Week % Planted	Last Week % Planted	Last Year % Planted	5- Year Average % Planted
Corn Emerged	100	99	100	100
Corn Silked	28	8	63	40
Corn Dough	3	--	4	1
Cotton Planted	97	90	100	99
Cotton Emerged	92	75	99	97
Cotton Squaring	5	--	23	17
Peanuts Planted	96	90	99	--
Rice Planted	98	95	100	100
Rice Emerged	95	90	100	99
Sorghum Planted	98	91	100	100
Sorghum Emerged	90	79	99	99
Soybeans Planted	96	92	100	98
Soybeans Emerged	92	86	97	95
Soybeans Blooming	24	4	23	28
Winter Wheat Mature	97	78	99	95
Winter Wheat Harvested	48	15	63	53

Soybean Agronomics

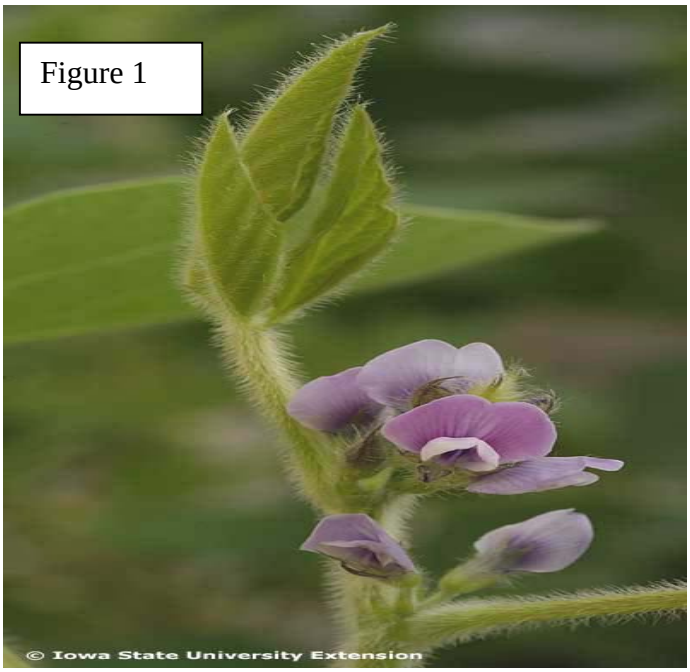
Dr. Trey Koger

Growth Stages: As we progress through the growing season and the soybean crop shifts into the reproductive portion of its life cycle, we are beginning to see a lot of fields across the state exhibiting nitrogen deficiency symptoms. Most of these fields are confined to sandy loam or silt loam soils that have an extensive history of being grown to predominately cotton. Before we get into the specifics of how to diagnose and remedy the nitrogen deficiency situation, it is important to rehash soybean growth stages for the purpose of this newsletter but also because practically all foliar fungicide inputs and most of our insecticide inputs occur during the reproductive growth stages.

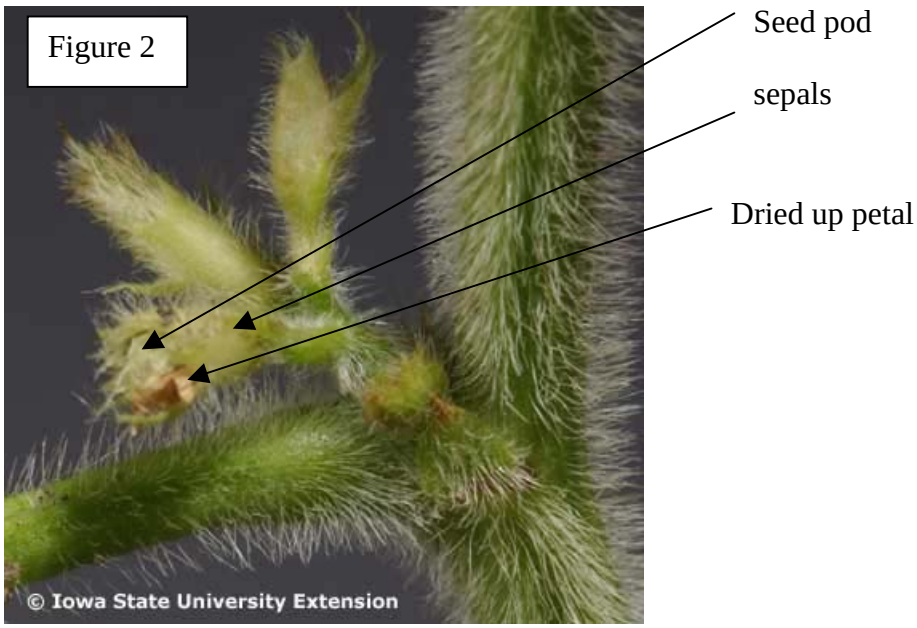
Soybean reproductive growth stages:

R1: First flower: At least one flower located at any node on the plant. Node is part of the stem where a leaf is (or has been) attached.

R2: Full flowering: Open flower at one of the upper two most nodes. See figure 1 below.



R3: Beginning pods: pods are 3/16 inch in length at one of the four uppermost nodes. This occurs soon after the bloom dries up and falls off leaving the small pod inside the sepals. See figure 2 below.



R4: Pod development: Pod ¾ in length located at one of the four uppermost nodes. See figure 3 below.

Reproductive growth stages will be explained in more detail in a following newsletter.

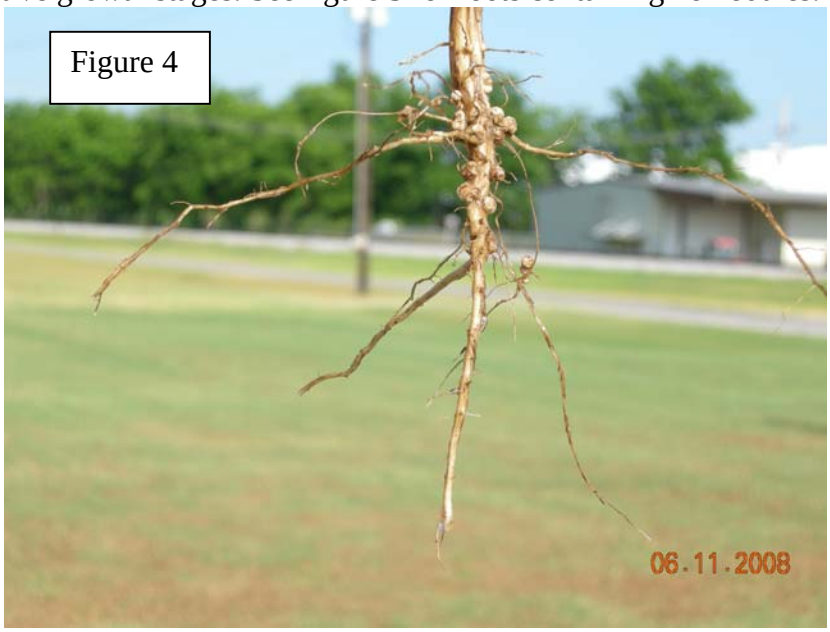
Nitrogen deficiency: Several key concepts regarding nitrogen utilization in soybean should be detailed before getting into diagnosing and treating nitrogen deficiency.

1. A soybean plant utilizes nitrogen located in the plants cotyledons to support nitrogen requirements for the first two weeks of a soybean plants life.
2. Once exhausting the nitrogen supply in the cotyledons, a soybean plant will utilize any remaining residual nitrogen that may be found in the soil.
3. A soybean plant will initiate the development of a relationship with rhizobium bacteria in the soil profile so that nodules can form and the bacteria can convert atmospheric nitrogen in a form for plant utilization.
4. The rhizobium bacteria must be present and alive in the immediate area of the root zone in order for nodule formation to occur.
5. Soil pH levels must be at least 5.8 in order for rhizobium bacteria to thrive. Acidic soil conditions can severely inhibit the activity of rhizobium bacteria and the subsequent development of root nodules.
6. Soil must also be aerobic in nature as rhizobium bacteria do not survive under extended flooded, anaerobic conditions. Extended flooded conditions in a rice production system or flooding from river back waters that last for several weeks to over a month can severely reduce rhizobium bacteria numbers.
7. The importance of utilizing inoculants on soybean seed for providing the rhizobium bacteria was discussed in lengthy detail in a previous newsletter.
8. A soybean plant needs a minimum of 4 to 5 active nodules in order to provide sufficient amounts of nitrogen for plant utilization.

9. Maximum nitrogen requirements occur once a plant reaches the reproductive growth stages and nitrogen deficiency symptoms often do not show up until this point.

Diagnosing nitrogen deficiency can be done through the following steps:

1. Look for initial nodule development once the plant contains its first trifoliate. Plants that contain sufficient rhizobium bacteria around its root zone will often initiate nodule development within the first three weeks of its life if residual nitrogen in the soil is not available. Don't be alarmed if nodules are not present this early in the growing season.
2. Nodules will often a form a tight cluster around the tap root just below the soil surface. See figure 4 below.
3. Once the plant reaches the reproductive growth stage, dig up uniform plants in the field and look for presence of nodules. Be careful when removing root systems from the soil, as nodules can be torn from the root system very easily. It is better to dig plants rather than pulling plants by hand from the soil.
4. If no nodules are present, nitrogen deficiency symptoms are characterized by a yellow cast to the leaves. Deficiency symptoms often do not begin until the plant reaches the reproductive growth stages. See figure 5 for roots containing no nodules.



5. Severe nitrogen deficiency is characterized by defoliation of leaves on the lower portion of the plant. This occurs because nitrogen is cannibalized from the older leaves to feed nitrogen requirements of the younger leaves.
6. Yellowing of leaves due to nitrogen deficiency is often uniform over the entire leaf and not restricted to interveinal chlorosis, which can be a sign of iron or manganese deficiency. Yellowing on leaves due to nitrogen deficiency can be pale yellow to almost white appearance to the leaves when the deficiency is severe.
7. Keep in mind, these nitrogen deficiency symptoms and the lack of nodules on plant roots have been limited to soybean fields or portions of fields having sandy loam to silt loam soils historically grown to cotton or a cotton/corn rotation. Most of these fields have very little organic matter and are often deficient of sulfur as well.
8. In fields where nitrogen deficiency symptoms have been observed, the deficiency symptoms have been found in entire fields or portions of the field often where the sandiest soils occur.

Soil and tissue sampling to better diagnose deficiency problems: Soil and tissue samples should be pulled from portions of the field where deficiency samples occur.
See the following MSU publication for proper techniques for collecting soil samples:
http://msucares.com/pubs/infosheets/is0346.pdf

See the following publication for proper procedures for collecting tissue samples: http://msucares.com/pubs/publications/p1224.pdf

Soil and/or tissue samples should be delivered to your local county MSU Extension office. A form will have to be completed before samples are delivered to the soil testing lab. You can also contact the MSU Soils Testing Laboratory (662 325-3313) at

Soils Testing Lab
Box 9610
Mississippi State, MS 39762

Samples can be shipped directly to the soils testing lab, but the lab should be contacted prior to shipping to complete necessary paperwork required by the lab.

Remedying nitrogen deficiency in soybean:

Unfortunately, soybean plants that are showing nitrogen deficiency and have no nodules often need to be treated with a nitrogen based fertilizer in order to meet nitrogen demands. Nitrogen requirements are likely going to be higher for irrigated soybean and high yield potential soybean. We are currently conducting field research to address nitrogen rate requirements and proper timing of nitrogen application. Current recommendations are based on previous observations and amendments applied to soybean fields exhibiting nitrogen deficiency symptoms. See the following suggestions to address application of **nitrogen** based fertilizers.

Sulfur amendments: Keep in mind, in sandy soils having a history of cotton production, organic matters are likely low and **sulfur** amendments may also be needed. A soil test to determine sulfur and organic matter levels is needed to determine if sulfur amendments are needed. Sulfur levels in soil are a function of organic matter since sulfur is generated in the soil profile as organic matter decomposes. If little organic matter exists in the soil, especially sandy or silt loam soils, sulfur levels are likely to be low. Application of sulfur in the form of Ammonium sulfate

(21-0-04 or 21 lbs of N and 24 lbs of S per 100 lbs of product) or a urea/ammonium sulfate blend (41-0-0-4) can be applied to provide sulfur. Preliminary research shows 10 to 18 lbs of sulfur/acre should be applied to meet sulfur demands when sulfur levels are limiting. Applying sulfur based on the belief sulfur levels may be low without referring to soil sample results will not hurt soybean growth or yields, but may result in an unneeded cost if soil test results show ample levels of sulfur exist. If a fertilizer containing sulfur is applied, account for the amount of nitrogen applied per acre with the nitrogen + sulfur containing fertilizer and subtract that nitrogen amount from nitrogen based fertilizer applied.

1. Nitrogen amendments are often not needed prior to reproductive growth stages.
2. Apply 50 to 75 lbs of nitrogen per acre. Keep in mind, previous research has shown that total nitrogen requirements may reach 140-150 lbs of nitrogen per acre under high yield conditions where soybean plants have no nodules.
3. A second application of fertilizer may be required in order to provide sufficient amounts of nitrogen throughout the entire season.
4. The decision to apply a second application should be based on nitrogen deficiency symptoms such as yellowing of plant tissue. The time period between applications will be dependant upon weather conditions, soybean growth, timing of first application, and amount of nitrogen applied in first application. A second application, when needed, is often applied 3 to 4 weeks after the first application. A second application may not be needed bases on criteria detailed in previous sentence.
5. Multiple forms of fertilizer can be utilized to provide nitrogen or nitrogen and sulfur. See the following table for required fertilizer rates to meet nitrogen requirements.

Fertilizer	lbs N and S per 100 lbs product		Amount of fertilizer to apply to obtain N rate/acre listed below		
			50	75	100
Ammonium nitrate (34-0-0)	34 and 0		150	220	300
Urea (46-0-0)	46 and 0		110	165	220
Ammonium sulfate (21-0-0-24)	21 and 24		240	350	480
Urea/Ammonium sulfate (41-0-0-4)	41 and 4		125	185	250

6. Add Agrotain when applying Urea fertilizer. Agrotain reduces volatilization of Urea for up to 14 days after application. Incorporate Urea soon after application through irrigation or a timely rain to reduce potential volatilization losses.
7. Apply irrigation if possible soon after application or apply fertilizer just prior to a potential rain in order to activate fertilizer and get into the plants root zone for uptake.
8. Once fertilizer is activated, plant tissue should begin to turn greener within 5 to 7 days.

Keep in mind, research is ongoing to address this important issue. These recommendations are based on observations, trial and error on-farm experimentation, and previous research that was not conducted with the primary objective of determining fertility input requirement for soybean grown on sandy or silt loam soils historically grown to cotton. The decision to apply nitrogen or nitrogen + sulfur fertilizer should be conducted on a field by field basis and based on the findings of soil and plant tissue analysis. Don't hesitate in contacting us if you have any questions regarding this issue or any other soybean related issue.

Plan Italian Ryegrass Control Now

Dr. Dan Poston

Italian Ryegrass is becoming more difficult to control in Mississippi. Glyphosate has long been the product of choice for spring burndown of Italian ryegrass. However, glyphosate is no longer effective in many areas of the state, especially the Central Delta. With glyphosate no longer a viable option, there are few herbicide programs that provide effective postemergence control of Italian ryegrass in late-winter to early spring. This is particularly true if the ryegrass has begun tillering and active spring growth. Graminicides have proven fairly effective if they are applied early at high rates to small ryegrass, but they have proven to be of limited utility on larger ryegrass. Paraquat generally burns off the top foliage and ryegrass begins putting on new growth shortly after treatment. Sequential applications of paraquat can facilitate planting, but ryegrass generally recovers to compete with the crop. This is especially problematic in early-planted soybeans because ryegrass can compete with the crop for up to two months before the ryegrass senesces and dies in early June.

Because Italian ryegrass is difficult to control in spring burndown programs, much of our research emphasis has been shifted to fall-applied programs in an effort to take ryegrass out of the spring weed mix. Our strategy has been to use residual herbicides in mid- to late-November either in combination with paraquat to remove existing vegetation or following a fall tillage event. Several registered products and one experimental product have provided very good residual ryegrass control (see pictures below). Dual Magnum (1.33 to 1.67 pt/A) and Command 3 ME (1 to 1.33 qt/A) have provided the most consistent control over several years of research. Higher rates have provided nearly complete control. Treflan PPI (3 pt/A) has also provided acceptable control of ryegrass and represents a cost effective means of reducing plant populations to a manageable level. Treflan could also be applied with scheduled fall tillage. Although these products control ryegrass, they are often less effective on winter broadleaf weeds. Therefore, a standard spring burndown would still likely be needed. Products like Canopy 75DF (8 to 10 oz/A) that contain long lived ALS herbicides like chlorimuron may provide acceptable ryegrass control and broadleaf control. Valor, commonly used as a fall-applied residual will not provide acceptable ryegrass control.

To develop an effective fall-applied control program for Italian ryegrass, you need to plan now. Map fields that have ryegrass populations, especially wheat fields and field borders. Often ryegrass problems are present along field borders or in patches in the field. When harvesting wheat, combine infested field borders last in an effort to reduce spread across entire fields. Heavily infested areas can be spot treated in fall with more expensive treatments or higher rates thereby reducing whole field costs. Given the short longevity of Italian ryegrass seed, implementing effective control strategies for two years should greatly reduce Italian ryegrass seedbanks.

As mentioned previously, few effective control options are available. High rates of Paraquat + Metribuzin or Linuron have proven somewhat effective for control close to planting. These treatments are extremely coverage dependent. Consequently, they need to be applied in high volumes of water (20 or more gallons per acre) especially where there is dense vegetation. High spray pressure may also help canopy penetration. These treatments and other potential spring-applied options are still being evaluated in our research program. Feel free to call for updates.

Italian ryegrass problems can often proliferate in winter wheat and it is important to develop effective Italian ryegrass control programs for wheat. Effective control is often achieved with fall

followed by spring herbicide applications. Several effective products are available for ryegrass control in wheat, but it is important to use multiple modes of action. ALS and ACCase inhibitors are most commonly used to control ryegrass in wheat. Rotate these modes of action. Do NOT rely on one mode of action

Figure 1. Non treated control plot of glyphosate-resistant Italian ryegrass at Tribbett, MS. Picture taken late-April 2008.

Figure 2. Plot treated with 3pt/A Gramoxone Inteon + 1.33 pt/A Dual Magnum in mid-November 2007. Picture taken late-April 2008

Figure 3. Plot treated with 3pt/A Gramoxone Inteon + 1 qt/A Command 3 ME in mid-November 2007. Picture taken late-April 2008.

Figure 4. Plot treated with 3pt/A Gramoxone Inteon + 8 oz/A Canopy 75 DF in mid-November 2007. Picture taken late-April 2008.

Figure 5. Plot treated with 3pt/A Treflan PPI mid-November 2007. Uniform incorporation is essential. Ryegrass is present in areas of poor incorporation. Picture taken late-April 2008.

Figure 6. Plot treated with 3pt/A Gramoxone Inteon + 2 oz/A Valor in mid-November 2007. Population was thinned but effective control was not achieved. Picture taken late-April 2008.

Figure 7. Plot treated with 23 oz/A Roundup Weathermax in late-March 2008. Picture taken late-April 2008.

Market Briefs

Dr. Steve Martin and Dr. John Anderson

Corn: The corn market has finally broken out of it two-month trading range, propelled higher by early adverse weather in the Corn Belt and bullish adjustments to corn balance sheet projections from USDA. Since the latter half of last week, all contracts have traded progressively further into new contract-high territory, with all contracts through September 09 now well above the $7 mark.

The immediate cause of the current rally in corn futures is not hard to identify. Last week, the market began to react very strongly to the effect of Midwest flooding on corn production prospects (as well as to record-high crude oil futures prices). While to full extent of the damage to this year's crop has yet to be pinned down, there is little doubt that flooding in Iowa, Indiana, Michigan and other Midwestern locations has taken a substantial toll on corn acreage. Prior to the flooding, the market had already been on edge due to the late emergence and mediocre condition ratings on this year's crop.

Tuesday's *World Agricultural Supply and Demand Estimates* (*WASDE*) report added fuel to the corn market's fire, confirming expectations that prospects for this year's production have been significantly diminished by a very challenging spring. Yield projections were dropped from 153.9 bushels per acre last month to 148.9 bushels per acre in this month's report. With no change in harvested acre projections, this year's production is forecast at 11.735 billion bushels. A few years ago, that would have been considered a bin-busting (and market-depressing) figure. Against this year's nearly 13 billion bushel use, though, that production figure looks pretty small. USDA did slightly raise 2007/08 ending stock projections, reflecting diminished exports in the latter part of the marketing year. Still, though, the sizable reduction in 2008/09 production forecasts results in a 2008/09 carryover projection of just 673 million bushels (down from last month's projection of 763 million bushels). This would be the lowest carryover since 1995 (when carryover fell below 500 million bushels).

The corn market made a strong bid for additional acres after the *Prospective Plantings* report was released. That bid was very likely undermined by unfavorable planting conditions in key regions. Even if acreage does ultimately live up to the *Prospective Plantings* figure (86.0 million acres), a key question will be how much can actually be harvested. Certainly, developments so far argue for larger-than-normal abandonment. In short, it looks as though supply-side concerns will continue to provide solid fundamental support for corn prices for the next few weeks. There is some down side risk to think about, though. A planted acreage figure equal to or slightly larger than the *Prospective Plantings* estimate (still a possibility to consider) would probably be perceived as bearish by the time the *Acreage* report is released at the end of this month. On the demand side, while corn demand from the ethanol sector is pretty well propped up by renewable fuel standard mandates and by the high fixed costs of new ethanol plants, feed demand could be off significantly in coming weeks and months. Likewise, higher corn prices and the increasing availability of wheat in the world market may help curtail export demand. For producers in the Mid-South, who may by now have a better handle on their own production expectations, the current corn price surge provides an opportunity to price some more of this year's crop at attractive prices.

Soybeans: Soybean prices have improved considerably in the last couple of weeks. On Wednesday, the new crop November contract closed at the contract-high level of $15.09. The

move to new highs in the soybean market has not been as dramatic as in the corn market. In fact, the recent increase in soybean prices has largely been a reaction to the corn market rally.

Soybean market fundamentals remain supportive of prices. This week's *WASDE* report projected 2007/08 ending stocks at just 125 million bushels, down from last month's 145 million bushel projection due to stronger-than-expected exports. Carryover is projected to increase to 175 million bushels in 2008/09 due to the expected large increase in plantings this year compared to last year. Prospects for this year's crop remain very much in question, and as in the corn market, this is providing strong price support. Soybean crop condition ratings this week were 57% in the Good to Excellent categories. Last year at this time, 70% of the crop was rated in the top two categories. Looking ahead, the market will quickly begin to turn its attention to final acreage expectations. With corn planting delayed this spring and with substantial corn acres flooded out early this year, soybean plantings could end up much larger than the 74.8 million acres projected by the *Prospective Plantings* report.

Wheat: From mid-March to the end of May, wheat futures endured a long, steady slide lower. Over that period of time, the July contract on the Chicago Board of Trade (CBOT) declined from just over $12.50 to just under $7.50 per bushel. So far in June, wheat prices have improved considerably, with the July contract currently trading at just over $8.60. Outside markets, notably corn, have helped to pull wheat futures off of recent lows.

Aside from positive outside market influences, wheat fundamentals are considerably weaker than they were a few months ago. Global wheat production is shaping up to be quite large this year. This week's *WASDE* report included upward revisions in production for the US, China, Russia, and Ukraine. After reaching a 30-year low in 2007/08, global ending stocks for 2008/09 are projected to bounce back significantly on the strength of this year's production. Greater availability of wheat globally will continue to be a negative factor for prices, though demand for wheat should remain very strong due to the very high price of corn and other feed grains.

On a more local note, harvest time wheat basis is almost unbelievably weak. On Wednesday, basis levels across the state based on USDA Agricultural Marketing Service cash market reports and CBOT closing prices ranged from about -$2.20 to -$2.50. The performance of commodity futures markets in general, and the behavior of basis specifically, have been important and contentious topics over the last several months. The current basis situation in the wheat market will very likely lead to increased calls for the Commodity Futures Trading Commission (CFTC) to get serious about doing something to try to ensure convergence between cash and futures markets.

Cotton: New York (ICE) cotton futures prices have weakened over the last few weeks. Some strength has reappeared however in the past few days from mill buying, exports and supply concerns. The Dec 2008 contract has risen $0.04-$0.05 per pound and is currently trading around $0.77.

The June World Agricultural Supply and Demand Estimates (WASDE) report (*Report*) contained few changes to the 2008/09 marketing year estimates with the exception of an increase in ending stocks from 9.8 million bales to 10.2. The export estimate was increased however by 0.5 million bales and thus ending stocks were decreased by 200,000 bales to 5.4 million. The biggest news in the report was the first USDA estimate of season average cotton prices in 79 years. The new Farm Bill gave USDA the authority to forecast cotton prices. The estimate for the

2008/09 marketing year was a range from $0.58 to $0.72 cents per lb., up from the $0.57 estimate for the 2007 crop.

The June estimates had little effect on the cotton market which has primarily traded sideways over the last several months with a slight trend downwards as export and domestic usage has been less than anticipated. The June planted acreage report due out on the 30th may give some market direction. While the market is aware that acreage has been reduced significantly over the past two years, the fact that ending stocks continue to increase has limited any attempts for a significant market rally. Demand seems to remain strong as mills and exporters pick up their buying pace each time the market declines $0.02-$0.04. Weather concerns in Texas are also providing some positive price support. Until we see some sustained increase in demand, expect prices to continue to trade sideways as the market balances reduced production in 2008 with more than adequate carryover.

Rice: Rice futures contracts on the Chicago Board of Trade have weakened a little over the past few weeks. Much of the fear of running out of rice has been at least perceivably relieved. Futures prices as well as new crop cash prices still remain strong however.

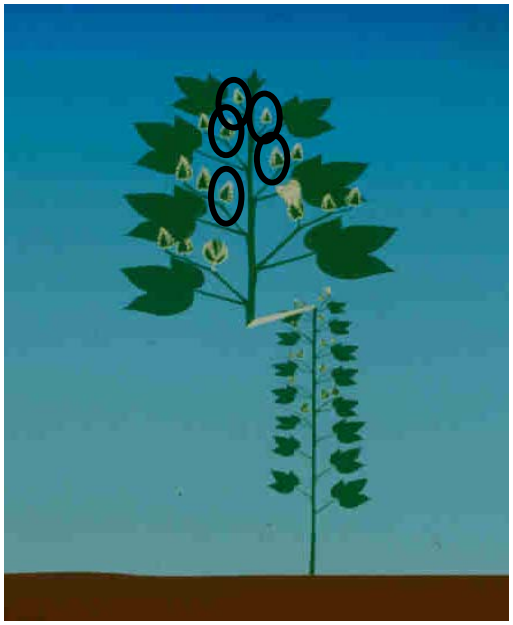
The WASDE *Report* raised 2008/09 beginning stocks by 0.5 million cwt. Imports for the new crop year were also raised by 0.5 million cwt. However, exports expectations were raised 1 million cwt as well and the net result was no change to 08/09 ending stocks. The season average farm price was lowered by an average of $1.00 per cwt but still remains at an all time estimated high of $18.00 per cwt.

While rice prices are off from their contract highs, prices still remain very strong. No doubt planted acreages will be increased in the June 30 report. Still under the current global grain situation, prices should remain at or above current levels through the next several months. Concerns over short crops in the corn and soybean markets will only cause rice to have to bid again for adequate acres in 2009.

Cotton Insects

Angus Catchot

Square Retention: This week seems to be somewhat of a turning point on plant bugs. We are now beginning to see more plant bugs moving into cotton at threshold levels as more of the crop starts squaring. At this point we are not seeing some of the really high numbers we saw in places in the delta last year but threshold numbers are not hard to find on the some of the older cotton. It will be extremely important to monitor square retention prior to first bloom as the crop starts squaring. Often this will dictate the decision we will make. Square retention is easy to do and I would encourage anyone working cotton to monitor for first position square retention. The easiest way to do this is to use one of the counter's like the ones Bayer use to supply in the scout smart kits. There are many ways to monitor square retention but here is an explanation of the way we do it. First, I generally do not spend a lot of time digging for tiny pinhead squares in the



terminal, but rather key in on the ones that I can see easily without a lot of digging. These are usually somewhere between a pinhead and match head size square. Starting at the top of the plant work down looking for first position squares only, but go no lower on an individual plant than 5 positions down from the terminal. On cotton that is just beginning to square it obviously will not have 5 positions so you would only count down to whatever it has. Every time you see a first position square click the counter going from plant to plant. Every time you see either a missing square or a blasted square or just a scar where a square has been lost keep up with that number in your head **(see pictures below).** Periodically look down at the counter and when you reach 100 subtract the number of missing squares you were keeping up with in your head from the 100 and that is the percent first position square retention you have. Do this in several locations in a field for a good average. We know we cannot manage cotton to 100% retention and if we did the plant would throw it at bloom anyway. A more reasonable number is 75-80% retention going into bloom. If we start dropping below 75-80% retention we need to tighten our plant bug thresholds up at that point to start hanging more fruit.

As threshold populations of plant bugs begin to move into these fields timeliness is absolutely critical. We can generally keep retention high under normal plant bug levels but where we run into serious trouble is when we find threshold on Monday and the treatment goes out on Friday. Sometimes these delays are unavoidable but we need to make every effort to get into the field quickly when threshold is reached.

Damaged squares by Tarnished Plant Bug

Cotton Agronomics

Dr. Darrin Dodds

Crop Progress: According to the National Agriculture Statistics Service (NASS) report, nearly all of the cotton in Mississippi is planted and emerged. Some of the oldest and/or most vigorously growing cotton is squaring. However, as was the case last week, there is a wide array of growth stages in this crop. The phone is very quiet which either means everything is going pretty well or everyone is in the field fighting issues as they arise. Based on the conversations we have had with consultants and growers this week, it appears as if the earlier is the case. There some insect, PGR, and herbicide applications being made; however, no major problems have been reported with the exception of having a late crop.

Metolachlor Sources: Metolachlor is the active ingredient in Stalwart, Me-Too-Lachlor, etc. and was first synthesized by Ciba in 1972. Metolachlor became commercially available for use in corn in 1977. S-metolachlor is the active ingredient in Dual Magnum, Medal, Cinch, etc and was registered for use in the United States in 1997. There have been several questions arise regarding the difference between metolachlor and s-metolachlor and, in turn, the difference between Dual Magnum, Medal, Cinch and products such as Me-Too-Lachlor, Stalwart, etc.

Metolachlor contains 50% of the R-isomer and 50% of the S-isomer whereas S-metolachlor contains 88% of the S-isomer and 12% of the R-isomer. What is an isomer? Isomers are compounds with the same chemical formula but the elements of the molecule are arranged differently. Think of this like a pair of gloves. Both gloves have four fingers and a thumb; however, one glove will fit one hand and not the other. Ciba published research in the early 1980s regarding activity of metolachlor (the R-isomer) and S-metolachlor (the S-isomer). Generally speaking, the R-isomer has less than 50% of the activity of the S-isomer. However, keep in mind that both metolachlor and S-metolachlor products are combinations of the R- and S-isomers. The question has arisen; will Stalwart or Me-Too-Lachlor provide the same weed control as Dual Magnum, Medal, Cinch, etc when both are used at label rates? When examining this question from an application rate standpoint, 1 pint of Dual Magnum, Medal, or Cinch and 1 pint of Me-Too-Lachlor or Stalwart per acre all provide 0.95 – 1 lb active ingredient per acre. In situations where weed pressure is heavy, difficult to control weeds are present, late-season weeds emerge, or dry weather is present, the metolachlor products may not perform as well as an s-metolachlor product. In situations were weed pressure is light and favorable environmental conditions exist, it may be difficult to tell a difference between metolachlor and s-metolachlor products. However, to make up the difference between the activity of R- and S-isomers, consider increasing your application rate per acre of a metolachlor product by one-third compared to an s-metolachlor product (be careful to stay within label recommendations). Consider the increased application rate when pricing these products as well. Also, be sure to examine all of your options. In the world of cell phones and the internet, a little checking could potentially have you a significant amount of money on these products.

Corn Disease

Dr. Tom Allen

I know last week I talked about corn rusts, and the corn fungicide situation in MS. I'm going to continue with corn diseases and talk about northern corn leaf blight (NCLB). This disease can be fairly common in Mississippi. In 2007 there were a few isolated cases of NCLB early in the corn growing season, in early June. As the season progressed, and following the rain we

received in July, more NCLB was reported and was fairly widespread. However, even following the conducive weather period in July, the NCLB that was present didn't cause a yield reduction.

Specifically, NCLB causes fairly long, "cigar-shaped" lesions that are tan to brown, and tend to have a darker, gray center where the fungus can normally be found sporulating. Lesions can range in size from 1 to 6 inches in length, and can be ¼ to almost ¾ inches in width. The disease will normally begin as a few scattered lesions on scattered leaves in the lower canopy. Older lesions will tend to tear due to mechanical damage or wind. Please note, lesion size and appearance will differ depending on hybrid susceptibility. This year, in particular, I have seen a few situations where other issues were confused with NCLB. In those situations where NCLB was thought to be the disease agent, there was an underlying situation that created a symptom that looked very similar to NCLB but was not NCLB (see attached photos for comparison). For instance, in some rare cases applying fertilizer can cause a similar lesion appearance if the conditions are right for burn to occur on the leaf surface. In one specific case this year, a producer applied 125 pounds of urea by air (as a split application), and following the application conditions occurred that allowed the leaf surface to develop a burned appearance and produced a similar lesion to NCLB. This was not hybrid specific and occurred in more than one field that was sprayed the same day. Following this type of scenario, secondary fungi will invade the damaged tissue and produce dark fungal structures that on first glance appear NCLB-like. This year we have encountered some additional, unique situations. Firstly, with corn prices as high as they have been over the past 12-18 months a lot of producers have chosen to plant corn following corn. Secondly, we've had a fairly unusual spring with high levels of moisture and cooler temperatures. This second situation has tended to favor disease development. Now, I want to spend the most time discussing the corn following corn situation. Since last fall, I have received numerous calls regarding diseases that could potentially be a problem in our corn production system if we continue to plant corn following corn. NCLB is one of those diseases. The causal fungus survives in corn and a no-till situation would tend to greatly increase the potential risk of infection from this fungus (but, but no means am I suggesting that you would always encounter NCLB in a no-till situation). This is one of the main reasons that NCLB begins on lower leaves and continues to move into the upper plant canopy. I have encountered a few situations that I thought would be good to present in this newsletter. In certain situations, I have made a few recommendations to monitor the progression of the disease in cases where lesions were only found on lower leaves in the plant canopy on widely scattered plants. These fields were traditional row spacings (38-40" rows) and even though they were corn behind corn, I suggested flagging a few plants within the field where the disease was present and returning to those plants over the next 7-10 days and monitoring disease progression. In all of those cases there were a low number of lesions scattered throughout the area scouted. Keeping that scenario in mind, I was in a field yesterday that was corn following corn, 30 inch rows, with a plant population approaching 35,000 plants per acre. This field was pivot irrigated and the corn hybrid was between a 4 and a 5 for NCLB. I found several leaves with more than one lesion and one leaf that had 8 NCLB lesions and lesions were above the ear leaf on a few plants. I recommended applying a fungicide to this field since there was little or no air movement in the lower canopy, the hybrid planted was moderately resistant, some leaves had more than one NCLB lesion, overhead irrigation would tend to increase the potential spread of disease from splashing water and increased humidity in the upper canopy, and the field was corn behind corn. My recommendation for corn disease scouting: by no means stop scouting first year corn fields, however pay extra careful attention to those fields that are corn following corn. NCLB will first occur on lower leaves, and given a conducive environment with high humidity can start to move up into the upper leaves. If you need specific help identifying the particular disease (there are several other leaf diseases that can have a similar appearance) please don't hesitate to call. Fungicide recommendations should be based on presence of the disease within a certain area of

the canopy, row spacing, number of plants per acre, irrigation type, hybrid planted and susceptibility, weather pattern, and plant growth stage. Remember, a fungicide can be applied beyond tasseling but must be applied with the specific pre-harvest interval in mind.

2008 Budworm/Bollworm Trap Captures

Pheromone Traps Captures – Don Cook, Chris Daves, and Fred Musser. Week of June 12, 2008.

County	This week last year Bollworm	Bollworm	This week last year Budworm	Budworm	Beet Armyworm
Calhoun	--	0	--	5	25
Chickasaw	7	16	51	102	48
Hinds	2	1	15	3	3
Lafayette	--	2	--	0	1
Lee	25	62	21	30	7
Lowndes	21	8	20	4	11
Madison	1	1	2	11	11
Monroe	--	0	--	4	5
Noxubee	1	8	8	39	13
Oktibbeha	--	2	--	0	--
Pontotoc	--	11	--	18	3
Prentis	0	8	15	77	6
Rankin	--	2	--	52	15
Scott	--	1	--	15	4
Union	2	1	14	2	2
Webster	--	0	--	7	49

Ryan Jackson USDA Trap line

June 9, 2008

County	This Week last Year Bollworm	Bollworm	This Week last Year Budworm	Budworm	BAW
Washington	11	0	3	0	-
Sharkey	78	36	10	0	-
Humphreys	9	0	-	0	-
Yazoo	6	0	3	0	-
Holmes	20	0	34	0	-
Leflore	24	14	9	0	-
Tallahatchie	11	0	20	0	-
Coahoma	11	14	3	2	-
Bolivar	38	12	5	0	-
Sunflower	89	4	2	0	-

2008 Southwestern Corn Borer

Southwestern Corn Borer - Chris Daves -June 11, 2008

County	Avg/Trap	County	Avg/Trap
Adams	-	Monroe	1
Attala	-	Montgomery	-
Calhoun	-	Noxubee	1
Carroll	0	Panola	-
Chickasaw	-	Pearl River	0
Clay	-	Perry	0
Coahoma	1	Pontotoc	2
Covington	-	Quitman	1
DeSoto	-	Rankin	0
Forrest	0	Scott	-
George	0	Sharkey	-
Grenada	-	Simpson	0
Hinds	0	Sunflower	1
Holmes	-	Tate	-
Humphreys	2	Tunica	-
Issaquena	-	Union	2
Leake	-	Warren	1
Lee	0	Washington	1
Leflore	1	Yalobusha	-
Madison	1	Yazoo	3

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