

Cotton

By Dr. Tom Barber

High temperatures and continued dry conditions over the last month have sped up the maturation of the Mississippi cotton crop. As of last week the Mississippi Agricultural Statistics service reported that 60% of cotton in Mississippi had an open boll. This compares to 27% last year and a 5-year average of 37%. The crop condition at this point according to the Mississippi Agricultural Statistics Service remains 34% poor to very poor, 28% fair, and 38% good to excellent. We are projected by the USDA to average 840 lbs of lint per acre on 1,200,000 acres. This yield projection is very optimistic given the extremely dry year and hot temperatures this crop has endured. The irrigated cotton that has been on a tight schedule since June will pick good cotton yields. Unfortunately, this is only the case on probably 30% of our acres. The dryland cotton that has been picked recently will have to do a lot better than the initial reports for Mississippi to reach that 840 pound mark.

At this time several acres in Mississippi have been defoliated. If the weather patterns continue we will have the majority of the Mississippi crop out by the first part of October. There is a lot of fertility left under this crop, especially in dryland situations. Late season rainfall has been received in some locations recently. This has led to problems controlling re-growth in many areas. In some cases you may have cotton 40-50% open, catch a rain and have several inches of re-growth, before defoliation. In these situations a sacrifice will have to be made, either on the lower/older bolls, or on the younger ones. At this time the chance of us filling out these smaller bolls at the top is decreasing, especially with the temperatures cooling off. Time the defoliation on the older crop. If it is 60% open, it can be defoliated. Waiting on these new bolls will cost you time and money. The longer this bottom crop stays out there the more chance there is for quality problems and discounts at the gin. The chances of high micronaire are very good this year because of the hot, dry conditions. Don't make the situation worse by waiting. Timely defoliation and harvest are the best tools we have against these discounts.

Defoliation Tips:

The two main things that can make or break defoliation are **tip selection** and amount of water applied (**GPA**). Make sure to utilize a tip, such as a twin jet or a cone nozzle, that provides good coverage and droplet size. **Coverage is essential.** If air-mix or air induction tips are used, expect to make a second shot. The application should be made with no less than 15 GPA (Gallons Per Acre) by ground and 5 GPA by air. If you have the proper combination of tips, pressure and water the product selection is somewhat less important. With the high temperatures and humidity, utilize thidiazuron products (Dropp, FreFall) at lower rates (1:80 liquid) to reduce the possibility of stuck leaves. I would rather make a second application than stick the leaves the first time around.

The use of a boll opener (ethephon) with thidiazuron is a common practice and seems to be working well this year. Boll openers may not be needed if the crop is 75% open or greater. However, they do help in defoliation and hasten boll opening. In the past, three-way mixes have worked real well. Combinations such as Dropp, Freefall (1:80 liquid) mixed with Finish, Prep 1:8 or 6 plus the addition of a phosphate Def, Folex 1:40 have done an excellent job. Remember that crop oil and other adjuvants mixed with any product may increase the probability of stuck leaves. The thidiazuron products at higher rates help with re-growth, but once the temperatures get cooler (60 degrees) effectiveness decreases and the use of phosphates (Def, Folex) and other products are warranted at higher rates.

Remember before you decide to pull the trigger, go out and cut a few bolls. Take the biggest boll towards the top of the plant that you want to harvest and cut a cross section. Look at the seed coat. If there is a black ring around the seed then the boll is mature enough to open. However if jelly is present in the seed, delay defoliation (weather permitting) a few days until the bolls at the top are mature. If you pull the trigger too early the bolls at the top will most likely not open. If they do open, yield and quality may be reduced.

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Corn and Wheat

By Dr. Erick Larson

Corn Residue Management - After harvest, producers face management decisions as they begin preparing fields for next year's crop. Following a corn crop, the primary factor producers consider is managing the corn stalk residue for subsequent field preparation and planting. As fuel (and fertilizer) prices soar, many growers are reconsidering their need to perform costly fall tillage practices. Mississippi growers have traditionally manipulated corn stalks using stalk shredding and/or multiple disking operations to destroy crop residue. Some producers also consider burning. However, one of the primary advantages of utilizing corn in crop rotation systems is improving soil properties by adding more organic matter. Heavy tillage and burning both considerably reduce organic matter recycling to the soil. Increasing soil organic matter content improves soil tilth and structure, which reduces soil crusting and erosion, and increases soil-water infiltration and soil water and nutrient holding capacity – also reducing the need for deep-tillage. Reduced tillage or no-till systems improve these benefits even more, because tillage accelerates organic decay. This is particularly true in the South, because our warm, wet climate encourages microbial activity and rapid organic decomposition, much more than drier, colder regions. Furthermore, equipment manufacturers now produce planters (or attachments for existing planters) and other implements specifically designed for use in heavy corn residue. Thus, growers nationwide and in Mississippi are rapidly eliminating tillage operations from their crop production systems. I would encourage hesitant producers to try new methods and/or minimal tillage on some acres – let mother-nature decompose those stalks over the winter, rather than burning diesel.

Nutrient Removal with Corn Hay – Many growers are baling corn stalks after grain harvest to feed livestock because little hay is available due to the drought. Growers should be aware that considerably more nutrients may be removed from the field in the hay, than if the stalks were recycled to the soil. Potassium removal would be affected more substantially than other nutrients. I estimate about 150 lbs. K/a. will be removed in the hay, compared to about 29 lbs. K/a. in 100 bu/a grain. Thus, net K removal will likely be at least 120 lbs./a. more when baling stubble, compared to grain harvest only.

Wheat Varieties – Wheat acreage intentions are very high this fall, so book your seed soon. The 2006 MSU Wheat and Oat Variety Trials and a “short list” of wheat varieties which have had superior yields over the past several years are now available on the MSUcares.com website or at your county MSU Extension Service office. Plant characteristics, maturity, straw strength, disease

resistance and other helpful information are noted for each variety. Variety evaluation should be based primarily upon yield history (particularly on different soil types or management regimes), plant characteristics (including maturity, straw strength and height) and disease resistance for predominant pathogens in the region. During the past seven years, Stripe rust has become a major disease problem on wheat grown in the mid-south. Although Stripe rust development was very light this past season, it has reduced wheat yield more than any other disease during recent years. Thus, growers should always utilize wheat varieties with considerable resistance to Stripe rust, particularly since it often flourishes earlier than other diseases.

Preparation for Wheat Planting – Poor preparation plagues wheat yield potential perhaps more than any other crop grown in Mississippi. Drainage, field selection/preparation and fertility are extremely important factors governing wheat yields which should be addressed in the fall. Wheat is grown during the rainy season, potentially exposing it to saturated conditions at any time. Optimal water drainage is critical to Mississippi wheat production because extended waterlogging may reduce stands, hamper vegetative growth, encourage pathogen development and reduce nutrient availability. Thus, field selection and soil physical improvements capable of improving drainage, such as multiple surveyed water furrows, raised beds and clean ditches, can enhance wheat yield tremendously. Soil tillage hardpans may also substantially limit yield potential by inhibiting internal drainage. Thus, disruption of soil hardpans with moderate to deep tillage equipment is encouraged, if needed. Although Roundup Ready cropping systems have reduced problems regarding herbicide carryover associated with crop rotation, growers should heed cropping intervals for herbicides used in the previous crop. Growers should keep fields weed-free for several weeks prior to planting to eliminate a “green bridge” for pests. Likewise, growers need to prepare fields now, so they have a smooth, firm, moist seedbed at planting time. Wheat yield potential is extremely dependent upon nutrient availability because it is a very shallow rooted crop grown during the wet season. This makes it nearly impossible for wheat to mine nutrients from the soil profile. Thus, wheat growers need to take soil tests now, so they will know how much phosphorus, potassium, zinc, magnesium and lime are needed to meet crop demand and correct soil pH before planting, or yields will suffer tremendously. Diammonium phosphate (DAP 18-46-0) is an excellent fall fertilizer source, particularly for late-planted wheat, because it supplies both nitrogen and phosphorus, which will promote vigorous growth and advance maturity - essentially serving as a “starter fertilizer.”

Soybeans

By Dr. Alan Blaine

Harvest Reports - Harvest has been progressing well, with approximately 70% of Mississippi's soybeans harvested as of September 1. Soybeans yields have varied tremendously, with some growers harvesting their lowest ever to some cutting their personal best.

Although the weather was not the least bit cooperative tillage, soil type, variety, planting dates, and irrigation were all major factors affecting yields. Many areas of the state went all season long without any appreciable rainfall. Some areas of the south Delta went from early March until late August with no rainfall. I recognize that 2006 was tough, but it should provide an opportunity to reflect on how we can address some of the differences that were observed.

Even though most are ready for this year to be over, we will learn from this year. We can use this information to greatly improve our production systems, but we must be willing to alter some long-standing practices.

Late-season Insect Management - We have observed a couple of fields that had almost a complete yield loss due to stinkbugs. This does not happen often, but high numbers at specific growth stages can ruin a crop. Research has shown that they will damage the crop up through growth stage R7. We have several areas where stinkbugs were not a problem, but this is due primarily to past efforts.

A lot of calls on pod worms in the northern end of the state were received. This is not surprising on these later plantings. They are looking for something green and this is the only option.

In addition, looper pressure picked up north of Hwy 82. They are infesting later plantings but can be effectively controlled. Maybe we are far enough north that they are not the problem as in some locations, but the half rate of Intrepid (2 oz./acre) is still working quite well on loopers. We even have some tests out at lower rates where we needed no residual. Some continue to complain about this rate, but I personally have not observed any failures. When I reflect back on how we used to control loopers (two shots, very little residual and about \$24 total for materials), I think technology has brought us a long way.

Irrigation - Irrigation has still been a topic on most everyone's mind. Questions about irrigation, timing, and termination continue to surface, but this topic will be discussed more at a later date.

Harvest Aids - Since temperatures have dropped, I have switched to straight Gramoxone as a desiccant. Use rates vary from 16-20 ounces plus 0.25% surfactant. This is a fairly fast treatment, but it requires higher volumes of water to get the job done. Ten gallons and less by ground is not enough. Twenty gallons is my preferred rate and is much better than 15 gallons per acre. Many keep complaining that it won't work. This is true because about only 1 in 10 will put it out right. This is a non-translocated desiccant – you must cover it to kill it. Flat fan and cone tips work much better than air induction tips unless you run the pressure up real high. If applying by air, I prefer 10 gallons. This treatment will be fairly fast but harvesting 4-6 days after application will be about right. Do not get too far in front of the combine, as this will cause brittleness in the crop.

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Forages

By Dr. David Lang

Annual Ryegrass is a cool-season premier forage that grows in Mississippi from September through May or early June, depending upon weather conditions. It can be susceptible to gray leaf spot or blast during wet autumns, particularly if planted in late August or early September. This plant disease can be quite active following a tropical storm and can result in stand loss and significant stunting. Small grains, such as oats, wheat or rye, make good companion crops with annual ryegrass because they are not as susceptible to blast. Oats are more heat tolerant and can provide earlier grazing than ryegrass but they tend to winterkill if night temperatures drop below 15°F. Rye and wheat are less heat tolerant, but are very winter hardy and will provide mid-winter forage. Normal planting dates for ryegrass are mid to late September in north Mississippi and late September to early October in south Mississippi. Ryegrass planting rates vary from 25-30 lbs. per acre if drilled, and 35-40 lbs. per acre broadcast-seeded. Reduce the rate by 5-10 lbs per acre if planted with a small grain species and use about one-half the recommended seeding rate for the small grain (40-60 lbs./acre, rather than 80-120 lbs./acre for a small grain planted alone). Small grains have about half the yield potential of annual ryegrass, but they fill production niches and offer some protection from losses due to plant disease, such as blast.

Ryegrass and small grains will grow quicker and yield more in the fall if planted on a prepared seedbed compared with sod seeding. If the land is hilly, consider disking 100 foot wide strips on the contour leaving 10 to 20 foot strips of unbroken sod as buffers between strips. This will reduce soil erosion and provide vigorous fall growth. Fall armyworms can damage ryegrass seedlings, leading to some stand loss, particularly during dry weather. Be sure to scout for them and apply an insecticide labeled for pastures, such as Sevin or Tracer, if warranted.

Soil fertility requirements of ryegrass are a soil pH from 5.5-6.5 and moderate levels of potassium (K) and phosphorus (P). A soil test will determine fertilizer and lime needs. It's best to apply lime, K (also known as potash) and P before planting. All grasses need supplemental nitrogen fertilizer (N) to optimize productivity. Nitrogen is also the largest expense in a ryegrass budget. It takes 50-60 lbs actual N per acre (150-180 lbs ammonium nitrate) applied at seeding and again in January/February and also in March/April to optimize ryegrass profitability. Ryegrass will respond more than 50-60 lbs N applied three times, but it may not be economical, due to high N

fertilizer prices. Rates higher than 80 lbs N per acre per application may also potentially cause nitrate toxicity, so it's essential to split N applications. Annual legumes, such as arrowleaf or crimson clover, can be grown with ryegrass and help provide some nitrogen, particularly in the spring. N fertilizer can be reduced in the spring when ryegrass is grown with an annual legume, but apply 50 lbs. N per acre in the fall to stimulate fall and winter growth.

Ryegrass generally establishes quickly and will compete well with most weeds. Thus, it often does not require herbicides to control weeds. However, some broadleaf weeds, such as *Ranunculus* (Yellowtop) may become problematic, but are usually easily controlled with less than a pint per acre of 2,4-D applied in early winter. Yellowtop becomes much more difficult to control once it begins flowering in the early spring, so don't delay herbicide application. Allow the ryegrass to grow to 3-4 inches or to the 4-6 leaf stage before applying broadleaf herbicides, since young grass seedlings are often sensitive.

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Rice

By Dr. Nathan Buehring

This year the preliminary yield reports have been good to excellent. Most of the yield reports are from 160 to 200+ bu/A. I have also heard of some yields down to 150 bu/A. We have started out quite better than I was expecting. I have harvested two RITE fields so far and they averaged 170 bu/A (Cl 131) and 203 bu/A (Cocodrie) dry (12% moisture). These two fields have exceeded the highest yielding field in last year's RITE program. Hopefully these high yields will stay throughout the harvest season. With soybean yields down and production costs up, a high yielding rice crop along with a good price will be necessary to help producers this year.

The biggest issue right now in the forefront is the LL601 contamination in our conventional rice varieties. As of today, we have a little more information. An August 31 press release from LSU confirmed 2003 foundation seed rice of the variety Cheniere contained trace amounts of the genetic material LL601. However, the 2005 Cheniere foundation seed appears to be free of LL601. Also, 13 other varieties tested, including Cocodrie, CL 131, and CL161, appeared to be free of LL601. The press release can be accessed on the web at:

http://www.lsuagcenter.com/en/crops_livestock/crops/rice/News/Liberty+Link+601+Found+In+LSU+AgCenter+Foundation+Seed+Rice.htm

Right now there are a lot more questions than answers. Everyone involved is focused on finding the answers to all of these questions. At this moment, I have very few facts and I am not going to contribute to any more speculation because there is plenty of that.

The main thing I have been encouraging producers to do is keep every variety separated in your storage bins. If the LL601 contamination is narrowed down to only one variety, this will help keep your other varieties from being contaminated with LL601. I cannot promise this will help you market your rice better in the upcoming months, but I would rather keep them separated so you would have that option, if necessary.

We will keep you informed on the situation as more factual information becomes available. If you have any questions, comments, or concerns do not hesitate to call me at any time.

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Peanuts

By Mr. Mike Howell

Peanuts are generally maturing much faster than anticipated. I have been looking at some fields of Georgia Green this week that are 115 to 120 days old and most will be ready to harvest in the next 7 days. Typically, this peanut variety matures in 130 days. There are many factors that determine how fast peanut plants will mature. Temperatures, drought stress and timing of stress have affected peanut maturity differently in various areas. I encourage growers to use the hull scrape method to determine when peanuts should be dug, rather than relying on a calendar date.

For growers that have been on 14-day fungicide programs, these applications need to continue until within two weeks of harvest. Once this maturity has been reached, fungicide application is no longer necessary.

I have been seeing a lot of insects, especially in young peanuts. Many fields have needed insecticide applications for foliage feeding caterpillars. Their threshold is 6 larvae per row foot. Several fields have also required treatment for Spider mites. The Spider mites have usually been more prevalent in drought stressed fields.

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