

Agronomy Notes

September
2005

Inside this issue:

Cotton Short Course pre-registration form	2
Corn/Wheat	3
Rice	4
Forage	5
Soybeans	7

2005 Cotton Short Course

The 2005 Cotton Short Course will be held November 29-30, 2005 at Mississippi State University, Bost Extension Center. Pre-registration is \$60 (**deadline is November 22nd**) and on-site registration is \$80 (begins at 8:30 a.m. on the 29th).

There will be a social/dinner on the 29th at the MAFES Conference Center (Bull Barn) starting at 6:00 p.m.

Pre-registration is available on line at http://msucares.com/crops/cotton/short_course.html.

Please contact Emily Rose (662) 325-2701 for additional information.

Cotton

By Dr. Tom Barber

High temperatures over the last few weeks have sped up the maturation of the Mississippi cotton crop. As of last week the Mississippi Agricultural Statistics service reported that 18% of cotton in Mississippi had an open boll. This compares to 20% last year and a 5 year average of 31%. We are still a little behind our average at this time but the heat unit accumulation has caught us up a good bit in August. The crop condition at this point is good overall. We are projected by the USDA to harvest 928 lbs of lint per acre this season. This is down from our record last year of 1034 lbs, but if we have a good harvest and the projection holds it will be the third largest yield in Mississippi. I do believe however with the current conditions this estimate may be a little high, but we will know for sure when we knock the leaves off and run the picker through.

At this time a few acres in Mississippi have been defoliated. The varieties that have been defoliated are the earlier maturing varieties and the leaves seem to be coming off fairly well. It is important that we make timely defoliation decisions. Delaying defoliation, especially with some of the earlier varieties (PM 1218) that tend to have high micronaire, may result in penalties. 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 provide 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 the 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 more. However, they do help in defoliation and hasten boll opening. In the past, three way mixes have worked really 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 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 to early the bolls at the top will most likely not open, and if they do, yield and quality may be reduced.

PRE-REGISTRATION FORM



**November 29-30, 2005
Mississippi State University**

Pre-registration and information available on line at:
http://msucares.com/crops/cotton/short_course.html

Please print or type

Name _____

Institution or Firm _____

Address _____

City _____ State _____ Zip Code _____

Phone Number _____ Fax Number _____

Email Address _____

Social/Dinner on 29th at the

- Will attend the social/dinner on the 29th.
 Will not attend the social/dinner on the 29th.

**Pre-registration \$60
On-site registration \$80**

**Pre-registration DEADLINE is November 22nd.
On-site registration begins at 8:30 a.m. on the 29th.**

Mail pre-registration form and payment to Cotton Short Course, Attention Emily Rose, Box 9555, Mississippi State, MS 39762. Please make check payable to *MSU-ES Cotton Short Course*.

For office use only:

Date received _____ Confirmation # _____ Amount \$ _____ Check _____ Cash _____

Corn/Wheat

By Dr. Erick Larson

Hurricane damage tips – Producers should begin harvesting lodged corn as quickly as possible. Harvest progress of lodged corn may be up to five times slower than normal, so growers should aggressively harvest mature corn, despite moisture content. Growers should take this action because the likelihood of grain quality deterioration and harvest losses are much higher than normal, and may increase substantially if wet weather is prevalent this fall. Field drying rates of severely lodged fields will be much slower, compared to normal (0.6% moisture per day), simply because aeration and exposure are reduced. Furthermore, as average daily temperatures begin to drop, field drying may virtually cease.

Combining lodged corn - Operators must slow combine speed to a crawl in order to pick up and feed the tangled pile of fallen corn into the machine. Combine harvest is generally more efficient when traveling opposite the predominant direction the corn stalks are laying. For example, if the stalks are lying towards the west, drive the combine in the east direction. Soybean platform headers may actually work more efficiently than corn heads on nearly flattened corn (less than six inches above ground level).

Harvest aids - Pre-harvest herbicide application may be necessary to kill morningglories or other weed species, which could hamper harvest considerably. The most effective herbicide treatment as a harvest aid for morningglory control is a combination of Gramoxone Max (1 pt/a. + NIS 0.25% v/v) and Sodium Chlorate (3 lbs/a). This herbicide combination needs to be applied at least 14 days prior to harvest (please check product labels for specific instructions).

Corn header attachments - Several companies manufacture aftermarket attachments to assist corn headers gather fallen corn. These devices are designed to help pull lodged stalks along the snout into the feeder mechanism. These devices can be grouped into two general types: reel-type fingers and feeder-type attachments.

Reel-type attachments:

Kelderman Corn Reel

<http://www.keldermanairride.com/category.php?id=2>

2686 Highway 92 East
Oskaloosa, IA 52577-9685
1-800-334-6150

Meteer Manufacturing

<http://www.meteer.com/ag/combine/reels/reels.html>

RR1 Box 221
Athens, IL 62613
Phone (217) 636-8109

Minden Machine Shop Inc

<http://www.mindenmachine.com/cornreel.htm>

1302 K Road
Minden, NE 68959
1-800-264-6587

Will Manufacturing

<http://www.holton.k12.ks.us/ih/willmfg/cornreel.html>

19642 X Road
Denison, KS 66419
Phone: 785-935-2304

St. John Welding and Mfg., Inc.

http://www.stjohnwelding.com/St_John_Weldin/

[Homex.html](http://www.stjohnwelding.com/St_John_Weldin/Homex.html)

P.O. Box 175
St. John, KS 67576
1-800-549-3289

Heritage Machine and Welding

http://www.hmwinet.com/corn_reel.htm

1001 W. Locust
Bloomington, IL 61701
1-800-274-0440

Feeder-type attachments:

Corn Saver

<http://www.cornsaver.com/information/>

5200 N. Columbia St.
Plainview, TX 79072
800-536-1022

Roll-A-Cone

http://www.roll-a-cone.com/harvesting_attachments.htm

7655 Roll-A-Cone Road
Tulia, TX 79088
(806) 668-4722

Lodged corn evaluation – Hurricanes Katrina and Dennis as well as late-July thunderstorms passing through various regions in the state during late July caused substantial stalk and root lodging in many corn fields. The degree and type of lodging often differ considerably depending upon man-

Continued on page 4

agement factors. Root lodging occurs when environmental forces exceed the ability of the root system to provide lateral support to the corn plant. This causes the entire corn stalk to lean or collapse from ground level, usually dislodging part of the root system from the soil. This differs from stalk lodging, where stalk internodes above ground collapse. Root lodging often results in sizable portions of a field where all plants lodge from the weight of adjacent stalks falling onto others. Root lodging often occurs as plants approach maturity, because the mass of the plant is more than any other time during the season (ear weight is maximum and the stalk is full of water). Thus, less force, usually in the form of wind, is required to push stalks over. Of course, exposure to strong winds, largely determine the degree of both stalk and root lodging. However, many types of stress, including excessive plant population, inadequate fertility, presence of rootless corn syndrome and excessively wet or dry conditions can restrict root development and/or encourage late-season root rot and thus, promote root lodging. Hybrids also differ considerably in their characteristics and ability to resist root lodging. Thus, many seed companies rate hybrid's ability to resist root and stalk lodging separately. I definitely encourage everyone to evaluate hybrids in strip trials or side-by-side comparisons, since root and stalk lodging differences are vividly apparent in many trials this season.

Aflatoxin tips – Although the likelihood of aflatoxin is only moderate this season, since mid-season temperatures were generally near or below average, improper grain handling can quickly promote aflatoxin development after harvest. Our typical hot, sultry harvest weather can promote rapid aflatoxin development if grain is not handled properly during harvest, storage and delivery. High moisture grain should be immediately dried to below 15% moisture or hauled to an elevator (which will dry the grain). Wet grain

should not be stored in trucks, combines, bins or any non-aerated site more than 4-6 hours before beginning drying. These conditions are critical to grain quality, because the fungal growth which causes aflatoxin will escalate to excessive levels very quickly in wet, warm grain. Conversely, fungal growth becomes relatively dormant when grain moisture drops below 15%. Producers should thoroughly sanitize handling and storage facilities before and during harvest to eradicate these potential contamination sources. Producers should also expect substantial variability from chemical analyses for aflatoxin quantification and detection. Substantial aflatoxin testing variability is common because few kernels are normally contaminated with aflatoxin (less than 0.1 percent), but concentration in individual kernels is often very high.

WHEAT

Wheat Varieties - The 2005 MSU Wheat and Oat Variety Trials are now available on the MSUcares.com website or at your county MSU Extension Service office. 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 five or six years, Stripe rust has become a major disease problem on wheat grown in the mid-south. This past season, Stripe rust infected our wheat earlier and more substantially than in the past. Susceptible wheat varieties were severely infected at nearly all variety trial locations, causing substantial yield reduction. Thus, growers should likely utilize wheat varieties with considerable resistance to Stripe rust, particularly since it often flourishes earlier than other diseases.

Rice

By Dr. Nathan Buehring

Katrina came and left her mark on the Mississippi rice crop. This was a very tough storm with high winds. Wind speeds were between 30 and 40 MPH for over 12 hours straight, and I believe the highest wind speed was near Hollandale at 70 MPH. When I left my office on Monday evening following the hurricane, I was expecting to see 80 to 90% of our rice crop on the ground. However, a good bit of the rice crop withstood the high winds and did not lodge over. While surveying the damage this past week, I believe 40 to 50% of our crop is down. It is not as bad as I had expected, but it is bad enough. Some producers South of Highway 8

have 80 to 90% of their crop on the ground. This is just due to there being more rice ready to harvest in this area.

Yield reductions, as a result of down rice, will be in the range of 15 to 25 bushels/A. The effect on rice quality will depend on how the weather treats us over the next couple of months. If we have good harvest conditions, I would not expect to lose too much in quality. If we get into a rainy pattern, quality will definitely go down.

Continued on page 5

Extra combines and draper headers are pretty much nonexistent due to the need for increasing harvesting capacity. With down rice, these combines will have to be slowed down. I know it can be aggravating running at snails pace-I have been there. As you change harvesting conditions and/or varieties, be sure to check that your combine is set appropriately. If you have grain loss monitors, be sure to keep them calibrated accurately as well. Also, the header reel will need to run faster to pick up the rice and get it into the header before the grain shatters off the panicle.

Phone calls were starting to slow down right before harvest. However, they have picked back up due to Katrina. One of the biggest questions is-Will sodium chlorate help dry down lodged rice? It will help to a certain extent. It will be difficult to get spray coverage on rice that is under a thick mat of straw. Therefore, total desiccation will be hard to accomplish in these conditions. To get the best coverage as possible, I would up the GPA to 10. Sodium chlorate rates to consider would be in the range of 3 to 6 lbs/A. On greener foliage, I would use higher rates.

Another main point I want to make is do not get ahead of your combines. If you are using sodium chlorate, be sure that you will be able to get the rice out within 7 days. Also, look at the 7 day weather forecast and see if weather could potentially impact your ability to get the rice out. If it looks like it is going to rain, do not apply sodium chlorate on as many acres. If the rice moisture drops below 15%, rice is subject to rewetting and drying cycles caused by rain or

heavy dews, which will reduce head rice yields.

Post-harvest management is a requirement for maximum milling yields. The following are tips to maximize milling yields: 1) avoid leaving high moisture (18-20%) rice on trucks or in combines for more than 24 hrs and low moisture (16-18%) for more than 48 hrs, 2) avoid using high heat (> 90E) and high volumes of air to dry high moisture rice (set temperature to 85 to 90E for rice that is above 15% moisture) 3) avoid placing rice with a moisture difference of 3% in the same bin, 4) avoid placing high moisture rice on top of low moisture rice in the bin. Keeping these key things in mind can result in a high quality crop.

This will probably be one of the most expensive rice crops Mississippi has every produced, especially due to high fuel costs, the dry growing season, and problems we encountered early on this season. This was not a total disaster for us. I had expected the crop to be worse off than it is after this storm. Keep in mind, things could always be worse. If you have any questions or concerns, please do not hesitate to call.

Once again, September is Rice Month. The Annual Rice Luncheon sponsored by Delta Rice Promotions will take place September 16, 2005 from 11:00 a.m. to 1:00 p.m. in Cleveland, MS at Delta State University-Walter Sillers Coliseum.

Forage By Dr. Richard Watson

Seed Drill Calibration- An important step towards establishing a successful forage crop and reducing the cost associated with wasted seed.

Fall is a busy time of the year for forages. It is a time when millions of pounds of annual ryegrass, tall fescue, and various clover seed are planted in the Southeast USA. The methods of planting range from broadcasting with a fertilizer spreader to no-till seeding with a sod drill. Irrespective of the seeding method, correct calibration of the seeding equipment is vital in ensuring enough seed is planted for the successful establishment of the crop. Correct calibration will also help prevent wastage of seed and money from using a seeding rate that is much higher than necessary.

Most commercially available seed drills have charts that indicate the settings for different rates of some of the most common forage crops. However, they may not include all of the commonly used forage crops, and even of they do, it is still important to go through the calibration process to ensure that the charts are correct for the particular seed you are using. Seed varies greatly in size and weight between species and sometimes even between varieties within a species. For example, most clovers have a relatively small heavy seed while ryegrass and tall fescue have a larger less dense seed. Therefore, it is not a good idea to use the same drill setting for these two seed types. The first step in calibrating your seed drill (or broadcast spreader) is to determine what the recommended seeding rate is for the particular crop you

Continued on page 6

are planting. Table 1 shows the seeding rates and depths for many of the commonly used forage crops in Mississippi.

Table 1 Seeding rate and depth of common Mississippi Forage Crops.

Forage Seed	Seeding Rate (lb/A)	Seeding Depth Inches
Grasses		
Annual Ryegrass	20-30	0-1/2
Tall Fescue	20-25	¼-1/2
Cereal Rye	90-120	1-2
Wheat	90-120	1-2
Clovers		
Arrowleaf	5-10	0-1/2
Ball	2-3	0-1/2
Crimson	20-30	¼-1/2
White (Ladino)	2-3	0-1/4
Red	12-15	¼-1/2

Adapted from Southern Forages 3rd Edition, Ball, Hoveland and Lacefield 2003.

Once you know the desired seeding rate, you can begin setting your drill.

First you need to make sure that the drill is clean and in good working order. Cobwebs, old seed and dirt can block the pipes that carry the seed from the seed box to the coulters, so these need to be cleaned out. Any old dirt should be removed from the coulters to make sure the seed flows as it should and that it is placed at the correct depth for germination. A blocked coulter will lead to “skips” in the drill rows, which will ultimately result in a thinner stand. Once you have made sure that the drill is working as it should, you can begin the calibration process. If your drill has a chart indicating the correct settings for the seed you are planting, then you can start at that setting. If the chart does not have a setting for the seed, or you have lost the chart, you will need to start at the lowest setting and work your way up until you get the desired rate.

Step 1. Pour a small amount of seed into the seed box so that all the outlets are covered.

Step 2. Remove the hoses from the seed box outlets and place collection devices over the outlets (I use small Ziploc bags attached over the outlet with rubber bands or cable ties).

Step 3. Measure a distance of 100 feet and the width of your drill. This will give you the area in which the seed is dispensed (i.e. 100 feet x drill width = area). You can then lower the drill and run it for 100 feet. If you have a 12 foot drill your total area covered will be 100 feet x 12 feet = 1,200 square feet. An acre is 43,560 square feet so to get the acres covered by your drill you need to divide the area by 43,560 (i.e. (100 feet x 12 feet)/43,560 = 0.0275 acres).

Step 4. While your’re running the drill over the 100 feet, the plastic bags should be collecting the seed being dispensed from the outlets. Combine all the seed from the bags and weight with a set of kitchen scales. The weight of the seed is how much was dispensed over the 0.0275 acres. To convert this into pounds/acre you will need to divide the weight by 0.0275.

(For example, if your weight was 0.55 lbs your rate/acre would be 0.55/0.0275 = 20 lbs/A).

Step 5. If your measured seeding rate is either higher or lower than that desired, you will need to adjust the drill and repeat steps 2-4 until you get the correct rate.

Alternatively, if you know the circumference of your ground wheel (i.e. the distance traveled in one revolution of the ground wheel), you can lift the drill off the ground and rotate the wheel a given number of times to achieve the desired distance. For example, if you have a ground wheel that travels 5 feet in one revolution you can spin the wheel 20 times to get your 100 feet of distance.

After you have done this a few times you will get a pretty good feel for which settings will achieve certain seeding rates. Remember to record this information for future reference so next year you will know where to start. Even if you know the setting from the previous year, it is still a good idea to check that the setting is still accurate as equipment can lose its precision over time and may need to be adjusted. The calibration process can also help identify any mechanical problem before you begin sowing the seed you just paid for.

Calibration does not take a lot of time and it can save us money and ensure that we have the best chance of achieving good establishment of our forage crop.

Soybeans

By Dr. Alan Blaine

Yields have been well above expectations thus far. Ranging from 80 and 90 bushels (irrigated) to the mid 20's. As a whole, growers are amazed at dryland yields where little if any rainfall fell on the crop. Early planting/ early maturing varieties were the answer and this will be the norm for the Mississippi crop in the future. Approximately 20% of the crop was harvested prior to Katrina but what we had hoped would be a good week was hampered by wet conditions, fuel shortages, and dampened spirits.

The soybean crop fared better than other crops following Hurricane Katrina. South of I-20 and east of I-55 were the hardest hit areas but I have not personally surveyed crops in this area thus far. However, whether you have 5 acres or 5,000, what we just experienced was devastating and the effect will be felt for years to come.

Five main concerns have surfaced due to Katrina:

1. Some fields that were ready to harvest experienced some shattering due to the beating rains, wind and delayed harvest.
2. The biggest problem I have observed is flooding. Although only for short durations this occurred in many areas.
3. Harvest will have to be slowed where plants are severely lodged or are leaning in one direction.
4. If harvest had to resume soon after the hurricane, rutting of fields will occur adding additional expense to next year's crop. However, even in areas where 5-7 inches fell it was so dry that the ground absorbed it very well.
5. River traffic will be slowed due to low levels on the Mississippi river and the devastation at the port of New Orleans. Due to the earliness of our crop it may not effect us as much but it will effect the US crop greatly in the next few weeks.

Ironically, the northeast Mississippi crop is slightly later so it benefited from the recent rainfall. Desiccants continue to go out and our mix of Gramoxone (.25 lb/A) + sodium Chlorate (3 lb/A) + .25 -.5% surfactant has done a wonderful job.

We continue to see the benefits of foliar fungicides on diseases other than rust and many producers will be disappointed they did not apply a fungicide to their crop this year, especially given the yield potential.

Although this year is winding down, I encourage you to help producers stay on top of late season insects. Loopers and

stink bugs are increasing particularly in the hill crop. For the last two years stink bugs have hurt the northeast Mississippi crop and unless producers look hard it is about to happen again. Numbers are at threshold and above in many fields and have been there for a couple of weeks. Do not let stink bugs take away the benefits of the recent rain. They can cause seed deterioration to the degree that the plants can remain green and unharvestable. This was observed in numerous fields last year in the northeast corner of the state. These numbers did not get here overnight and they are not going to go away any faster. Watch fields next to corn because as corn harvest begins stink bugs will move into neighboring soybean fields.



Calendar of Events

September

16, Delta Rice Promotions Rice Tasting Luncheon. Walter Sillers Coliseum (DSU), Cleveland, MS, 11:00 a.m. to 1:00 p.m. For additional information contact Don Respass (662) 843-8361, dresspass@ext.msstate.edu.

17, North MS Garden Expo 2005. Hiram D. Palmtree North MS Research and Extension Center, Verona, MS, 9:00 a.m. to 1:00 p.m. For additional information contact (662) 566-2201 or visit <http://msucares.com/expo/index.html>.

November

3-4, Mississippi Entomological Association Insect Conference, Mississippi State University, Bost Extension Center. For additional information contact Michael Williams (662) 325-2986.

29-30, 2005 Cotton Short Course, Mississippi State University, Bost Extension Center. Pre-registration and information available on line at http://msucares.com/crops/cotton/short_course.html. For additional information contact Emily Rose (662) 325-2701.

December

2, Horticulture Club Christmas Open House, Mississippi State University, Plant and Soil Sciences Greenhouse, behind Dorman Hall. For additional information contact Dr. Richard Harkess (662) 325-4556 or email rharkess@pss.msstate.edu.

