

Corn and Wheat

by Dr. Erick Larson

Agronomy Notes

Corn Hybrid Trials - The new MSU Corn for Grain Variety Trials are now available online at MSUcares.com or as a printed publication from your local Extension Service office. The grain sorghum trial at Stoneville is not published this year because of excessive bird damage. I also developed a list of suggested corn hybrids formulated from our and neighboring states' yield data to provide a quick reference guide for selection purposes. It is also posted on the MSUcares.com website at: http://msucares.com/crops/corn/pdf_files/short-list07.pdf.

Corn Hybrid Selection Criteria - I generally recommend growers plant several corn hybrids based upon three primary criteria - grain yield, stalk strength and maturity. High grain yield is obviously the primary consideration because grain is sold on a weight basis. However, variety trials may not reflect harvestable yield in production fields unless stalk strength is considered. These leaning or broken stalks may significantly reduce harvest efficiency in terms of higher harvest grain loss, and increased harvest time and fuel expenses. Of course, environmental conditions and crop management influence lodging, but substantial differences between corn hybrids are often apparent. Thus, growers should use this information to select superior hybrids for their farm. Hybrid maturity influences harvest date and may also impact profit through its effect on grain moisture. Hybrids grown may differ in maturity by as much as two weeks, but the highest yielding (best-adapted) hybrids typically are 113-120 days in relative maturity. Large producers can spread harvest somewhat by utilizing hybrids varying in maturity. Producers who market their grain at harvest may also benefit from growing earlier-maturing hybrids because market prices often decline through harvest.

Short Corn Seed Supply - Corn seed supply will be very short if planting intentions remain high and it is dry during planting time. Thus, book your seed as soon as possible, if you have not already done so. The seed supply of top-yielding hybrids are exhausted in most cases, so beware that alternative hybrids, particularly those which have not been grown in your area or in University Trials and hybrids abnormal in maturity, might have yield limitations and/or adaptability issues which may limit profitability considerably when grown in our environment.

What is an Acceptable Wheat Stand?

Wheat has outstanding ability to compensate for thin stands given sound management and some cooperation from mother nature. Thus, although an optimum wheat stand is 23-30 plants per square foot, little yield loss may occur from stands up to one-third of optimum. Wheat compensates for thin stands primarily by producing more tillers (stems) per plant. The critical period for this compensation is from now through early spring (early-March). After stem elongation begins in the spring, tiller number (potential head number) is determined. In other words, it is too late to influence tiller number after plant development switches from producing more stems to developing the existing stems. The ability of wheat to compensate for thin stands depends largely upon planting date (temperatures), soil drainage, soil fertility and weed control. Warm temperatures will promote wheat growth in the form of tiller development. Thus, late-plantings have less potential opportunity to compensate for thin stands, compared to normal plantings. Good soil drainage is imperative through early spring, so saturated soils do not stunt growth during tillering stages. Producers must also supply nutrients and control weed competition in time to optimize wheat tiller growth. This will likely require earlier-timed (but not necessary more fertilizer) fertilizer applications than normal. Winter weeds should also be controlled this fall or very early next spring, because heavy competition will rob nutrients and reduce wheat development.

When should I apply DAP?

DAP (18-46-0) is commonly used to stimulate growth of late-planted or thin wheat stands. Wheat can respond to broadcast DAP applications until stem elongation begins in the spring. However, in order to get optimum response, the fertilizer should be applied in the fall or late winter, so the wheat may utilize the nutrients during tillering stages. The phosphorus included in the fertilizer will remain in the soil throughout the winter (unless soil erosion occurs) and be available to wheat whenever growth commences. The nitrogen, however, is subject to considerable loss during wet winter conditions. Thus, since wheat is normally quite dormant from until late-January, it would probably be better (because of anticipated N loss) to wait until wheat growth commences very early next year to apply DAP.

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Cotton

by Dr. Tom Barber

Flex Cotton -The number one topic of discussion lately has revolved around Flex cotton, which varieties yield and will they compete with the standards. This year like the past two, DPL 555 BGRR was planted on over 30% of the acres. DPL 445 BGRR came in second at 15% and DPL 444 BGRR was close behind on 13% of Mississippi cotton acres. ST 5599 BR dropped from 25% planted acres to below 10% this season. These 4 varieties accounted for close to 60% of all cotton acres in Mississippi in 2006. Flex cotton was on approximately 8.5% of cotton acres in 2006, with DPL 164 B2RF being the most popular Flex variety planted. What will be the hot variety in 2007? After looking at some preliminary data; the standards are still very appealing. The question is what system are you looking for and which one will help reduce the overall cost of production and hopefully increase profitability. This is a difficult question to ask because the answer may be, and probably is different for each producer. At the beginning of the 2006 season growers made comments such as "Flex will have to yield with DPL 555 BGRR before I plant it". The comment has recently changed to "Flex cotton will have to yield", which seems to lower the bar a little. Will the Flex yield? Mississippi State University now has 2 years of data to sort through in order to answer that question. This year we also started a Cotton Variety Demonstration Program at 8 locations throughout the State to aid in answering that question as well. As I sift through the preliminary yield trial data from the Mississippi OVT's and the County Trials several things become apparent. The first observation is that the standards that we have planted continue to do well and in my opinion the Flex varieties have not performed as consistently well as the standards have. However, after two years of data I believe that some Flex varieties have proven themselves competitive in yield and quality. The Flex varieties that appear to be floating to the top are (in alphabetical order) DPL 117 B2RF, DPL 143 B2RF, DPL 164 B2RF, PHY 485 WRF and ST 4554 B2RF. These Flex varieties in all my observations are agronomically sound. There doesn't appear to be any problems with growth characteristics or fruiting. However there are some very-apparent differences in growth habits with some of these varieties compared to what you may be used to. One advantage I do see while shuffling through all the yield data is the fiber quality. The fiber quality of the newer Flex varieties seems to be much better than what we have been used to with the standards. You never really learn about a variety until it has been planted over several hundred thousand acres, however at first glance it appears that the Flex cotton may be worth more per pound than our standards. Hopefully this trend will continue.

Branded Varieties - One thing to be mindful of when selecting Flex cotton varieties for 2007 is to spread risk by utilizing varieties with different maturities. This is the same recommendation the Mississippi State University Extension Service has made for years. However, with Flex cotton the situation is a little different. Several different seed companies will be selling the same germplasm under different brands. Therefore, essentially the variety will be the same but the brand will be different. According to the Mississippi Seed Law, the variety number must be printed clearly on the bag as well as the brand. Keep in mind the variety number may be printed in small letters which could easily be missed. Table 1 (on the following page) contains variety numbers and corresponding brands that represent the same variety. The biggest issue here is that a grower may think that he/she is spreading risk by planting a different brand, when actually the same germplasm may be planted across the whole farm. The following is a list of known varieties and corresponding brand names. Keep in mind there may be more that are not listed in this table. Always remember to refer to the label on the bag if you are concerned that two brands may be the same variety.

Yield Variance of Brands? Can two brand name cultivars that are the same variety yield differently? Yes, there could be differences in yield based on seed quality resulting from seed production, storage and handling. It all starts with the seed, so if seed quality from one brand is better than another of the same variety then the higher quality seed will most likely be more vigorous, have a better root system, thus leading towards higher yield potential. As always be cautious when choosing new varieties. Utilize data from all possible sources including university trials, on farm experience and industry trials. The varieties that perform well in all trials over all locations will be more consistent and less likely to fall on their face when you plant them on your farm.

Cotton continued...

Table 1. Cotton varieties sold as different brands.

Variety Number	Brand Name
Variety - 450001G	CG 4020 B2RF BW 4630 B2RF ST 4357 B2RF AMERICOT 1532 B2RF
Variety -010001G	DG 2215 B2RF NexGen 3273 B2RF BW 4021 B2RF AMERICOT 1521 B2RF
Variety -370001G	DG 2100 B2RF CG 3020 B2RF BW 3255 B2RF AMERICOT 1504 B2RF
Variety -530001G	CG 3520 B2RF ST4700 B2RF DG2242 B2RF
Variety -170001G	ST 5007 B2RF AMERICOT 1622 B2RF

2007 MSU SOYBEAN VARIETY SHORT LIST

RR Maturity Group III's

Asgrow 3905 Progeny 3900 Morsoy 3883 Asgrow 3906 Delta King 3964

Conventional Group IV's

DPL 4748S Stoddard* HBK C4926*

RR Maturity Group IV's (EARLY)

Delta King 4667 GARST 4612 Terral 46R15 Delta Grow 4660 DeKalb 46-51 Progeny 4401
 Asgrow 4403 Delta King 4661 Morsoy 4665* DPL 4546 Armor GP-454 USG 7466*
 Vigoro V47n6RR* Asgrow 4703

RR Maturity Group IV's (LATE)

Progeny 4949 Delta King 4866 Garst 4999 Pioneer 94B73 Hornbeck 4924 Schilinger RC 495
 Terral 49R17 Asgrow 4903 Delta Grow 4970 Morsoy 4993 AgVenture 50D2N Delta King 4967
 DPL 4919* Dyna-Gro 35Z49 Morsoy 4914* Morsoy 4955* Vigoro 49N6* USG 7494*

Conventional Maturity Group V's (EARLY)

DPL 5110 Hornbeck C5025* USG 5002T* Jake* Hutcheson

Conventional Maturity Group V's (LATE)

Delta King 5870* Hornbeck C5894*

RR Maturity Group V's (EARLY)

Delta King 5066 Pioneer 95B43 FFR 5663 DPL 5634 Hornbeck 5525 DPL 5115
 Terral 55R15 Dyna-Gro 33B52 Progeny 5115 Delta King 5366 Asgrow 5702 Delta King 5161
 Armor GP-513 NK S56-D7* Delta Grow 5160

RR Maturity Group V's (LATE)

DPL 5808 Hornbeck 5924 Asgrow 5905 Hornbeck 5825 Dyna-Gro 36N57 AgVenture 57D7

* Indicates that the variety was selected with minimal knowledge of field performance but has an excellent yield potential based upon the Mississippi State University Variety trials.

**Based upon yield performance, field observations, and ability to perform consistently over many different environments.

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Register Now for the 2007 CCA Exam!

by Dr. Larry Oldham

The deadline to register for the February 2, 2007 CCA Exams is December 15, 2006. This is a “firm” deadline, be sure and register now!

The deadline to register for the Certified Crop Adviser International and regional exams is December 15, 2006: NO EXCEPTIONS!

The exams which cover four major competency areas: nutrient management, soil and water management, integrated pest management and crop management, will be administered February 2, 2007 at the Bost Extension Center on the MSU campus.

The Mississippi exam is administered in cooperation with Arkansas. Registration is available on-line at: http://www.agronomy.org/cca/exam_registration.html. Arkansas/Mississippi and International Performance Objectives (what you're supposed to know about) are available either from the ICCA or Tammy Scott, MSU Extension Plant and Soil Sciences Staff Assistant.

An excellent study aide for the International Exam is available for \$40 at <http://www.ppi-ppic.org/e-catalog/MANUALS/50-1000/cca.HTM> from what is now the International Plant Nutrition Institute, formerly the Potash and Phosphate Institute.

Preparing for the Arkansas/Mississippi exam means learning and applying what goes on in producing agronomic crops in these two states. In Mississippi, just about everything that used to be in the Extension Service Agronomy Handbook is now available on MSUcares.com, particularly in the Crops and Insect/Plant Disease/Pesticides sections on the left of the webpage, or by searching the Publications section on the right side. Similar information for Arkansas is available at: <http://www.aragriculture.org/>.

Benghal dayflower found in Mississippi fields

by Dr. John Byrd

Another invasive, exotic weed has been located in southern Mississippi. Benghal dayflower, also known as tropical spiderwort, has been identified in six cotton and four peanut fields in George and Jackson counties. It has also been found in one field of ryegrass. A warm season relative of common dayflower, Benghal dayflower can be annual or perennial, depending on growing conditions. It can be separated from other dayflowers by several characteristics: 1) red hairs at the base of the leaf sheath (picture 1); leaves are significantly wider than most other dayflowers resulting in a leaf width to length ratio close to 1:2; 3) underground flowers and fruit (picture 2). It is the only dayflower that occurs in Mississippi that produces underground fruit.

Cotton and peanut producers in south Georgia and north Florida have been fighting Benghal dayflower for several years. It appears to be a more significant pest issue in cotton and peanut cropping systems than in other crops (picture 3). It also appears to be a more serious threat in cotton cropping systems where herbicides with no soil residual activity are used. My analysis of the problem is similar to the days sicklepod was the main weedy pest of soybean: No herbicide with outstanding activity, a long germination period, high germination rates all combined to make sicklepod a difficult weed to manage. In the case of Benghal dayflower, there are herbicides with good activity, but the residual activity of these herbicides does not persist the entire cropping season. Combine that with seed germination over a long period of time results in a significant weed problem. Sequential applications may be necessary to provide control the entire season. Since this plant has been a problem in Georgia for several years, weed scientists have been looking for management options. Based on the research of Drs. Stanley Culpepper and Eric Prostko at the University of Georgia and Dr. Ted Webster with USDA, s-metolachlor (Dual Magnum) provides excellent residual control of Benghal dayflower. Herbicides with similar modes of action, such as Lasso and Outlook provided good control, but provide the length of control compared to Dual Magnum. Dual Magnum can be used in both cotton and peanut, so appears to be a likely solution. However, producers often fail to treat field perimeters, so Benghal dayflower populations may be more prevalent around field borders than in the field. Other herbicides that provide good control of emerged, small, actively growing Benghal dayflower include MSMA and 2,4-D. Control of Benghal dayflower with glyphosate alone was acceptable when applied to small dayflower and growing conditions were ideal, but under poor growing conditions, control with glyphosate was poor. While Cotoran and Command provided acceptable control up to 45 days after treatment, beyond that period control dropped below acceptable levels. UGA Extension recommends Cotoran plus MSMA as a suitable treatment directed on cotton 3 inches or more tall. Tankmixing Aim, Valor, Caparol, or Direx with MSMA or glyphosate also improved control over MSMA or glyphosate

alone. Other herbicides that provided good control in peanut crops included Gramoxone, Pursuit, and Cadre. In corn, in addition to 2,4-D, Evik and Aim provided acceptable control. Australian researchers also found that atrazine and Basagran were effective for Benghal dayflower control. For soybean production systems, Axiom, Canopy, Canopy XL, Sencor, and Classic in addition to those herbicides already mentioned that are labeled for soybean may also be used. Several herbicides were evaluated and found ineffective for Benghal dayflower control: Zorial, Staple and Direx.

New populations can be initiated by spread of seed as contaminants on equipment used during crop production or harvest. Benghal dayflower can also be spread by movement of vegetative parts of the plant. So, care should be taken to carefully clean tillage and harvest equipment used in areas with known populations of Benghal dayflower before moving to other fields. Postharvest management of Benghal dayflower is an important period as well. Several herbicides mentioned in this text could be used for fall dayflower management, depending on the cropping system targeted for that field the next season. Tillage is also very effective, but must be used repeatedly as it does not provide residual dayflower control either.

The following link <http://www.gri.msstate.edu/lwa/invspec/> will provide additional information and color photographs of Benghal dayflower.

Picture 1. Courtesy of H. Pilcher, UGA..



Benghal dayflower continued...

Picture 2. Courtesy of B. Graves, MDAC, BPI.



Picture 3. Courtesy of S. Culpepper, UGA.



Rice

by Dr. Nathan Buehring

Seed Contamination Issue - A lot of changes have recently come about regarding the LL601 contamination issue. On November 24, USDA deregulated the LL601 event and in a separate report stated "that tests have identified 2003 Cheniere variety as the only foundation seed that tested positive for LL601". Upon these preliminary findings, the US Rice Federation, rice buyers, and millers proposed that Cheniere be eliminated from production in 2007. Since Cheniere is the only foundation seed that contained LL601, eliminating it from production will purge the rice market of GMO's. Cheniere rice will be accepted up to July 31, 2007.

Replacement Varieties - Given that this policy will remain for 2007, growers will be looking for replacement varieties for Cheniere. Most of the Cheniere seed in Mississippi was on planted on coarse textured soils (sand and silt-loam soils). Growers liked this variety because it was high yielding and provided some straighthead resistance. If you planted Cheniere on heavy-clay soils, the best replacement would be Cocodrie or CL 131. Variety selection becomes a little trickier on our lighter soils. Cocodrie and CL 131 are not well-adapted to lighter-textured soils because they are very susceptible to straighthead and timely draining is difficult due to their rapid maturity. On lighter soils, the best options would be Wells, XL723, Priscilla, Cybonnet, and Trenasse (in that order). All these varieties/hybrid will provide straighthead resistance similar to Cheniere. However, they also have drawbacks. Wells, XL723, and Trenasse have the potential to lodge. Cybonnet and Trenasse will require a foliar fungicide for sheath blight control. Average yields with Wells and XL723 have been equivalent or better than

Cheniere on lighter soils. Cybonnet and Priscilla have averaged 3 to 7 bu/A less than Cheniere and Trenasse averaged 13 bu/A less than Cheniere.

Seed Availability – Seed of these potential replacements for Cheniere are not widely available in Mississippi. Wells and Priscilla seed production has been reduced due to the lack of interest in the varieties. I am not sure on how much XL723 will be available next year. Cybonnet and Trenasse will have to be purchased in Arkansas or Louisiana.

Equipment Contamination - Other things to consider for purging Cheniere from the rice market is cleaning out farm equipment and storage facilities. Any small amount of Cheniere left in the system from 2006 could give you a GMO-positive result during any random testing during the 2007 growing season. Therefore, you need to check and clean grain drills, levee seeders, combines, grain bins and augers.



We would like to wish you and your family a Merry Christmas and a Happy New Year!

To receive Agronomy Notes via email, please contact Tammy Scott at (662) 325-2701.

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Michael Collins