Mississippi Crop Situation

February, 7 2008	Mississippi State University Extension Service	Number 1

http://www.msucares.com/newsletters/pests/cis/index.html

New Soybean Specialist

Please join me in welcoming Dr. Trey Koger as our new state soybean extension specialist, effective today, February 1, 2008. Dr. Koger has a 100% MSU-Extension Service assignment with responsibility for coordinating educational programs for soybean and other oilseed crops. He will be our primary contact for Extension educational information, technology transfer and programming regarding production of soybean and other oilseed crops and will be responsible for providing statewide program leadership that assists, supports, and strengthens the work of other specialists, scientists, county agents and producers and will work closely with industry to facilitate technology transfer and adoption of best management practices. As specialist, Dr. Koger will also take over management of the S.M.A.R.T. (Soybean Management by Application of Research and Technology) program.

Specific duties will include developing educational programs, preparing training publications, conducting in-service training for extension personnel, designing and conducting field demonstrations, and providing leadership with commodity groups and other agencies concerned with soybeans and other oilseed crops, as well as presenting educational programs to extension personnel, producers, and industry. Trey will work closely with commodity organizations such as the Mississippi Soybean Association, the Mississippi Soybean Promotion Board, the Mississippi Feed & Grain Association, the United Soybean Board, and the American Soybean Association and will foster good working relationships with state agencies such as, but not limited to the Bureau of Plant Industry and the Mississippi Department of Agriculture, and organizations such as the Mississippi Agricultural Consultants Association, Delta Council, the Mississippi Farm Bureau Federation, and the Mississippi Agricultural Industry Council.

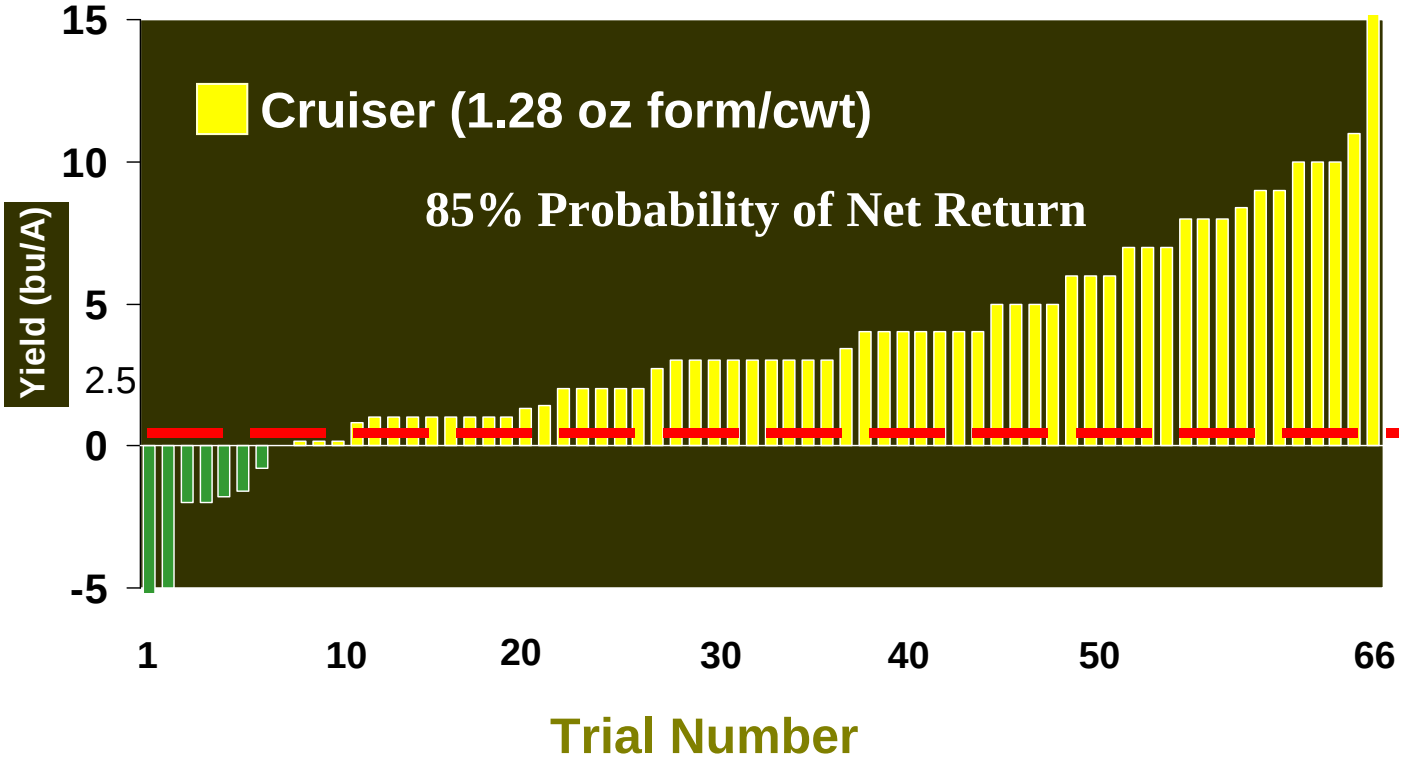
Thanks,
Michael Collins
Department Head
Plant and Soil Sciences

Soybeans

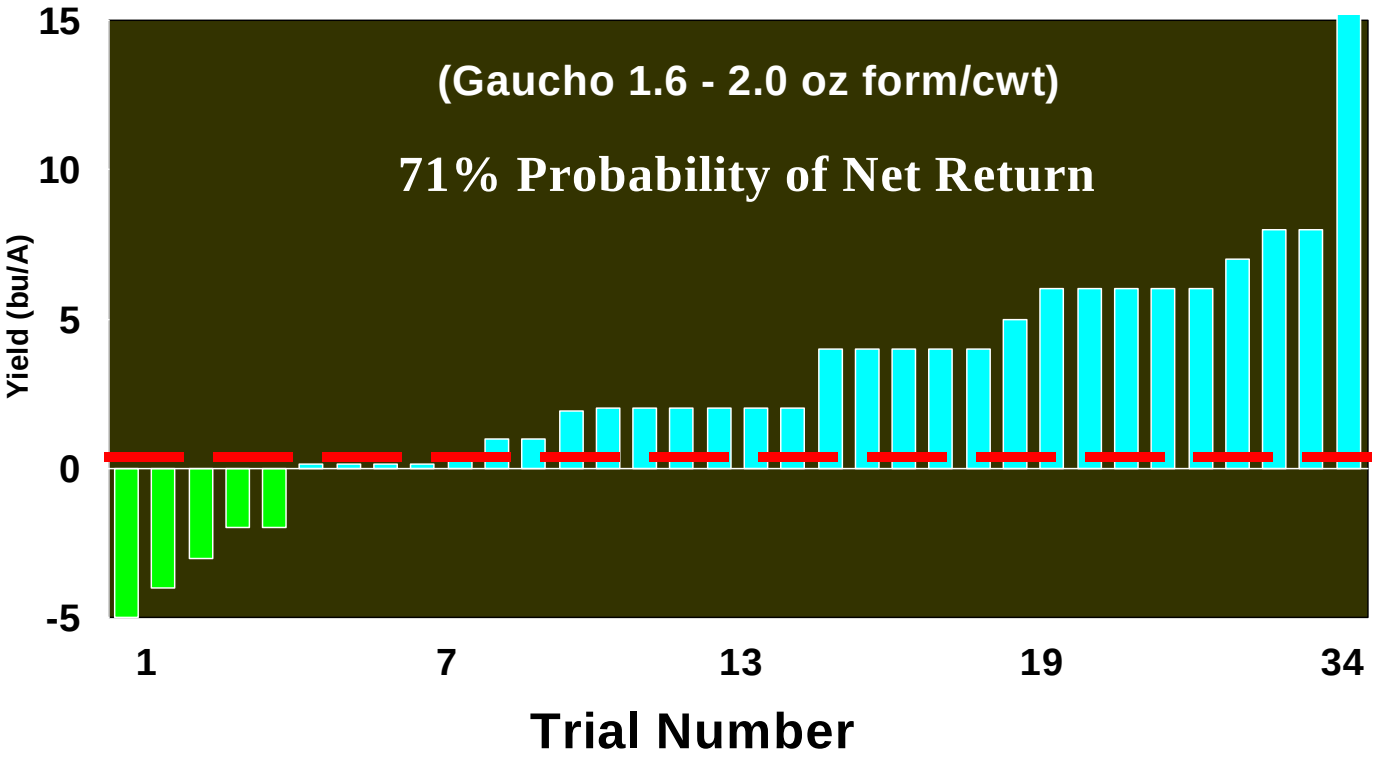
Insecticide Seed Treatments: **Angus Catchot**: Entomologists across the mid-south have been testing insecticide seed treatments on soybeans since 2003. Yield response has been fairly consistent across the mid-south states. We have enough data points at this time that I feel very confident at today's soybean prices that you have a very high probability to see an economic

return by using one of these insecticide seed treatments. At today's soybean prices, averaged over 66 university trials, the CruiserMaxx treated soybeans had an 85% probability of and economic return above the cost of the treatment. The Gaucho treated soybeans are similar with a 71% probability to provide economic returns with 34 university trials. At this time I am not prepared to actually say one is better than the other, since we have twice as much data for CruiserMaxx compared to Gaucho and most of these test were not head to head comparisons. Point is, these insecticide seed treatments look very promising and I would encourage you to take a look at them on some of your acres and see for yourself, especially on the early planted acres. I have seen a response in MS on most all planting dates but the earlier planting dates have shown the greatest yield response.

Soybean IST Performance
Mid-South 2003-2007
3.5 bu/Acre Average



Soybean IST Performance
Mid-South 2003-2007
2.8 bu/Acre Average



Wheat

Dr. Erick Larson

Wheat Nitrogen Fertility: Mississippi growers planted the largest wheat crop since the early 1990's this year. Accordingly there will likely many questions about basic wheat management. Nitrogen needs for winter wheat are very important, particularly with escalating fertilizer prices. There are several keys to successful wheat nitrogen fertilization. Split application of nitrogen fertilizer is likely more important for wheat than any other crop, including corn. This is because nitrogen for wheat production must be applied during the wettest months of the year. Thus, considerable nitrogen loss may occur before the crop utilizes it, if nitrogen is exposed to prolonged, soggy weather. Likewise, nitrogen application timing is very important, particularly for the first spring application. The initial topdress of a split application should be applied when dormancy breaks in late-winter while wheat is in prostrate, tillering stages (Feekes growth stage 3 or 4 - normally early February). Because, seasonal weather and weekly temperature fluctuation can greatly influence wheat growth (along with individual variety response), wheat producers need to closely monitor wheat health and growth, and evaluate the weather forecast, rather than applying fertilizer according to specific calendar dates.

Split Application Guide - I believe the most prudent method to apply nitrogen to southern wheat is either a 2-way or a 3-way split with at least 2/3 of the nitrogen applied in the late split(s). Using split nitrogen applications with the majority of fertilizer applied late will satisfy crop demand without subjecting a substantial amount of expensive N to denitrification loss during wet, saturated conditions typical during the early spring. Only a small amount of the total N is needed in the first topdress application (15-30 lbs. N/a.), because rapid nitrogen uptake does not occur until stem elongation begins. Neglecting wheat nutritional needs during tillering stages greatly limits the number of heads produced per acre, thus proper nitrogen timing is essential to produce high wheat yields. Thereafter, N can be applied according to crop needs, which are correlated to wheat development stage. A second nitrogen application should occur when plants become strongly erect and stem elongation begins (normally around March 1), and again prior to boot stage (late March), if you choose to make a third application.

Nitrogen Sources - Urea is the most commonly used nitrogen source on wheat because it is generally the most economical nitrogen source, it can be applied by air, and volatility is less likely to be substantial during the wheat season (because temperatures are cool and rain is frequent), than during the summer. Ammonium sulfate should be applied in an early application, if sulfur is needed. Liquid nitrogen solution (UAN) can potentially burn leaf tissue, especially if high rates are broadcast on erect wheat; so granular nitrogen sources are generally preferred, particularly for single or the latter split applications.

Nitrogen Rates - Our wet southern climate may influence nitrogen transformations considerably depending upon seasonal rainfall frequency and amount. Thus, specific nitrogen rate suggestions based solely upon crop yield goal are not very reliable for wheat production in the South. Since soil texture significantly influences soil-water relations and potential nitrogen loss during typical wet springs, our general recommended spring nitrogen rates vary depending soil texture. I normally suggest from 90 - 140 lbs. N/a. on light-textured soils and 120-170 lbs. N/a. on heavy clay soils. However, monitoring crop response to nutrition, culture and environmental conditions offers producers substantial opportunity to address needs more efficiently.

Greenbugs: **Angus Catchot** -Its time to start monitoring for greenbugs in wheat. Last week we picked up low levels of greenbugs in our wheat trial at Starkville. Also, I have heard of some findings in Arkansas. Greenbugs are small pale green colored aphids. Several aphid species can be present in wheat this time of the year but greenbugs are of particular concern since they inject a toxin when they feed. Symptomology is usually observed as yellow lesions on the leaves sometimes with brick red spots. When infestations are high, severe stunting and death can occur. Green bugs are easily distinguished from other aphid species since they are generally lighter in color and have a black line running down the middle of the body once they become about half grown. Below is a table showing greenbug treatment thresholds for wheat.

Treatment levels for greenbugs in wheat.	
Number Per Linear Foot	Plant Height
50	4 - 6 inches
200	6 - 10 inches
300	18 - 20 inches
800	30 + inches

Cotton

Burndown: Dr. Darrin Dodds - Burndown timing is key in gaining control of problematic winter weed species. Research from the Mississippi State University – Delta Research and Extension Center has shown that burndown applications made from February through early- to mid-March are more efficacious than those delayed until late March. Common winter weed species found in Mississippi include: horseweed (or marestail), henbit, Italian ryegrass, and annual bluegrass among others. Populations of horseweed and Italian ryegrass in Mississippi with confirmed resistance to glyphosate (Roundup™, Touchdown™, ClearOut 41™, Glyfos™, Glyphomax™, etc.) were documented in 2003 and 2005, respectively.

Recommendations for control of glyphosate-resistant horseweed generally involve the addition of dicamba (Clarity™) and/or flumioxazin (Valor™) to glyphosate. However, label restrictions in regard to application timing and rainfall must be followed. These restrictions are listed in Table 1. Mississippi State University scientists have observed cotton injury when the correct number of days between herbicide application and cotton planting was observed; however, no rainfall or irrigation was received during that same period. Glyphosate-resistant Italian ryegrass can be very difficult to control in the spring due to several factors. Italian ryegrass tends to have vigourous growth and is also very competitive. Preliminary research indicates that Italian ryegrass control in the spring will not be achieved with a single herbicide application (due to growth stage at the time of application). Single applications of glyphosate, paraquat (Gramoxone Inteon™), glufosinate (Ignite 280™), clethodim (Select Max™), and glyphosate plus clethodim all provided less than 65% control of Italian ryegrass. Sequential applications of clethodim plus glyphosate followed by clethodim, paraquat followed by paraquat, and paraquat followed clethodim all provided 80-85% control of Italian ryegrass. Clethodim followed by paraquat or paraquat alone provided 65-75% control. Fall applications of s-metolachlor (Dual Magnum™) and clomazone (Command™) provided 85% control whereas fall tillage only gave 30% control of Italian ryegrass.

Herbicide resistance is defined as the inherited ability of a weed population to survive a herbicide application that is normally lethal to the vast majority of the individuals of that species (Powles et al. 1997). Weed populations evolve herbicide resistance through selection pressure imparted by frequent use of one or more herbicides with the same mode of action or metabolic degradation pathway on one location over an extended period of time (Christoffers 1999). It is often thought that selection pressure forces the weeds to mutate and become resistant. However, there were probably always a few plants of any given species that were resistant to a given herbicide present. The use of a single herbicide (or herbicides with the same mode of action) repeatedly for many years (depending on the mode of action) tend to control the susceptible plants and select for plants with natural resistance. Factors that tend to promote resistance include: reliance on a single mode of action for weed control, using the same herbicide more than one time in a season, using the same herbicide in consecutive seasons, and no inclusion of other control methods (tillage, other modes of action, etc.) Resistance is no longer someone else's problem, we have it in Mississippi and it is a force to be reckoned with when planning for this years crop.

Table 1 . Time (days) required between herbicide application and cotton planting.

Herbicide	Application Rate	Rainfall or Irrigation Required	Interval Between Herbicide Application and Planting
Clarity™	8 fluid ounces	1”	21 days for every 8 fluid ounces of Clarity™ applied.
Valor™ (No-till or Strip-till)	1 ounce	1”	14 days
Valor™ (No-till or Strip-till)	1.5 – 2 ounces	1”	21 days
Valor™ (Conventional-till)	1 – 2 ounces	1”	30 days

Horseweed population of 40,000 plants per acre.

Photo Courtesy of Dr. Dan Poston.

Italian ryegrass

Photo Courtesy of: Dr. Trey Koger

IF YOU WOULD LIKE TO BE TAKEN OFF OF THE LIST, UPDATE YOUR ADDRESS, OR BE ADDED TO THE EMAIL DISTRIBUTION LIST PLEASE CONTACT SHERRY MCMULLIN AT (662) 325-2085 OR EMAIL HER AT: smcmullin@entomology.msstate.edu WITH **CIS NEWSLETTER** IN THE SUBJECT LINE TO BE ADDED TO THE ELECTRONIC NEWSLETTER LIST OR MAKE ANY CHANGES.

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