LOUISIANA CROPS NEWSLETTER

Cotton, Corn, Soybeans, Sorghum

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End-of-season corn checklist

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With the month of July currently upon us, we begin to see how different two years can be. Last year many were greasing up the combines and some very early corn was about to come off the field. However, this will not be the true on a state-wide basis for 2013 with the majority of Louisiana's corn ranging from silking through dent. With harvest comes a sense of completion and satisfaction from intense hours of labor and management. However, there are some issues that should be addressed to not only ensure optimum production for the current year's crop but also set up next year's crop with the best opportunity to succeed.

Identifying corn growth stages and associated management decisions:

While this article will not go into all of the growth stages in detail, a more complete description of most are given by Dr. Erick Larson (http://www.mississippi-crops.com/2013/06/26/identifying-corn-reproductive-growth-stages-and-management-implications/)

R1- Silking

This stage (as well as the previous stage VT- tasselling) is the final stage in which late-season N management can be made. However, in optimum situations this late-season management will have been during VT. This is because corn is extremely sensitive to stress during this period and any stress can have a large potential to drastically decrease yields.

R5- Dent

This stage is the beginning of hard starch formation and the maturation of the kernels. While this does indicate the beginning of kernel maturation, it does not mean irrigation can terminate as final grain weight is still being determined and as much as 20% yield loss can occur from premature irrigation termination. Additionally, early termination can decrease stalk strength and has the potential to increase lodging, given the right conditions.

R6- Physiological maturity

At this stage the crop is considered complete. It is typically identified by a black-layer which forms when hard starch has progressed throughout the kernel. When black-layer is achieved, most management practices, especially irrigation, have no further effect on the crop or final yield.

Physiological maturity (black layer)

Residue management:

One of the more challenging management practices for corn

production does not actually occur when the crop is in the ground and that is residue management. Corn produces a high amount of biomass,

which can almost be a double-edge sword at times for the production system. Corn residue can contribute more than most row-crops to the soil organic matter content. Problems have occurred when corn stalks are cut too short or are shredded prior to winter. This can lead to high amounts of residue run-off with winter rains as well as impeding some production practices in early spring. In an attempt to alleviate these challenges while still allowing this valuable residue to contribute to improving soil quality, consider leaving corn stalks knee high in the fall. Over-winter the roots will do a better job holding the residue in place and by spring most of the residue will have decomposed enough where planting equipment can easily push over the standing stalks. In addition, these standing stalks will be easier to plant through than the residue “mat” that can occur due to shredding the residue in the fall.

Nutrient management plans:

As any soil scientist will tell you, correcting soil fertility deficiencies is much easier during the fallow season than while the crop is actively growing; however, much can be learned from the current crop to ensure optimum fertility for successive years. This can be done by using the actively growing crop and any yield data as a guide for identifying fields that might have a nutrient deficiency problem. Once fields have been identified, or if your farm has not been sampled in over three years, collecting soil samples can directly identify nutrients which will be deficient in next season’s crop. A detailed guide on correctly collecting soil samples can be obtained at the Louisiana crops blog (http://louisianacrops.com/2012/09/05/soil-samplingtesting-recommendations-for-louisiana/). Using these soil samples and problem areas within a field will help to create a nutrient management plan that can be a beneficial guide for not only short-term nutrient management planning but also for more long-term nutrient budgeting.

Compaction:

While compaction was more of a wide-spread problem in 2012, it can still cause problems with root growth and therefore cause phantom nutrient deficiencies. Many producers have the ability of running deep vertical shanks to break through any plow pans or hard layers that may be present. These activities will also allow for winter rains to penetrate

the soil more deeply and build a greater moisture profile for the following crop. Deep tillage should be conducted when not only surface soil is dry but also when sub-soils do not have excess moisture because hard pan shattering will not be as affective.

Fallow field management:

With corn harvest in Louisiana occurring in late summer and early fall, it exposes the fallow ground for up to 6 to 7 months. Much can be done during these fallow periods to make early spring practices simpler as well as improve the potential productivity of the successive crop. Two management practices that should be considered are fall weed control and the utilization of cover crops.

Potassium deficiency caused by a compaction zone. Soil tested optimal for soil K; however, root growth was restricted.

Weed scientists at the LSU AgCenter have been warning that winter weeds are not only becoming harder to control due to resistance issues but also, if left unchecked, can create problems during spring burn-down. LSU AgCenter weed scientists have indicated that a proactive weed management program

that utilizes at least one fall application paired with spring burn-down can be more efficient and help better control fall and winter weeds. For further details on specific weed control and area specific questions, contact you parish County Agent or Drs. Daniel Stephenson and Donnie Miller. Additionally, the below two links to the Louisiana Crops blog discuss these topics in greater detail.

http://louisianacrops.com/2013/05/03/the-battle-within-the-battle-glyphosate-resistant-palmer-amaranth/

http://louisianacrops.com/2013/05/03/ryegrass-management-scout-now-for-fall-control/

While research identifying the benefits of cover crops in Louisiana is currently underway, much research is still needed to quantify the benefits. However, numerous other states have detailed the benefits to soil water holding capacity, water infiltration rates, suppression of winter weeds, and improvement of soil quality. In addition, cover crops can provide ground cover during the winter months, which are often times the most intense rainfall periods. With winter cover provided, either through previous crop residue or winter cover crops, soil detachment can be decreased and therefore surface runoff of soil sediment will be reduced.

Surface run-off with high sediment load from a bare fallow field during winter rains. Ground cover has the potential to drastically reduce sediment load and increase rainfall infiltration rates.

While harvest within the coming months may indicate the completion of the current corn season, it indicates just the beginning of next year's crop. If a producer is pro-active and starts their planning right away, it will provide the successive crop the best opportunity for optimum production.

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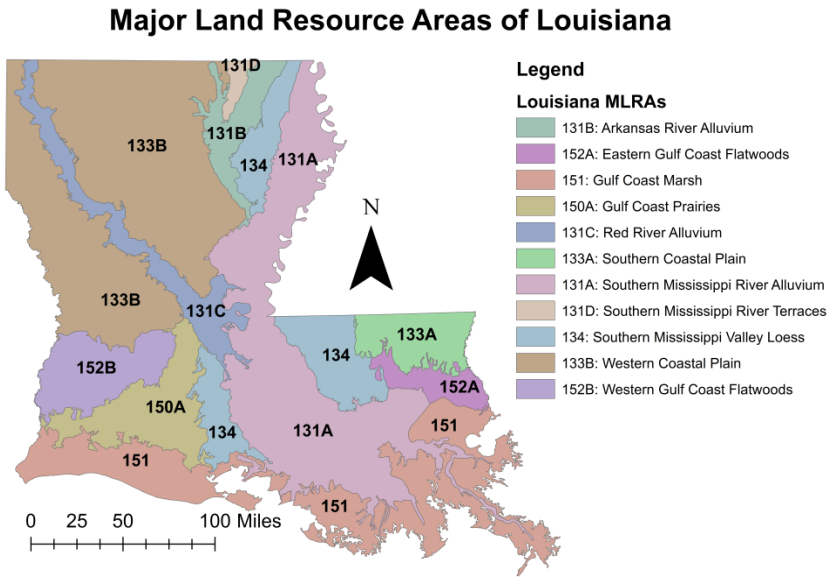
Soils in Louisiana

Beatrix Haggard, LSU AgCenter

The state of Louisiana has a very diverse soil system. Water greatly impacts the formation of soils in Louisiana, whether it was from rivers, marshes, or the Gulf of Mexico. Overall, in the state of Louisiana there are 11 different Major Land Resource Areas (MLRAs) or geographically similar regions. The MLRAs allow USDA to differentiate regions based on similar geology, climate, and vegetation. Major land resource areas are used for agricultural planning, and are also important for transportation and community planning for government entities. Out of the twelve soil orders recognized by USDA, seven are found in Louisiana including Alfisols, Entisols, Histosols, Inceptisols, Mollisols, Ultisols, and Vertisols. There are 315 soil series in Louisiana that include the Sharkey, Commerce, Gigger, and Ruston. The latter of which is the Louisiana state soil.



In the upcoming months we will look into soils located in the different MLRAs and how they influence the crops grown and management practices in each region. This information is essential because it can not only give us information on the soils that make up our production systems, but also how the differing properties that make each soil distinct, can be highly influential on management decisions that we make. While this can sometimes be a challenge in Louisiana, due to our Alluvial soils which constantly change throughout a single field, it can provide us with a better understanding of our systems and in turn help us make better management decisions.

If you have any questions concerning your soils, please contact:
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Soybean Planting Dates – Optimal

Early planting of soybeans has increased in Louisiana over the last several years because of grower success. Despite cold soil temperatures and slow plant growth of seedlings, producers have seen a yield advantage from early planting.

Date of planting study – 12 varieties MG3, MG4 and MG5 soybeans planted every 2 wks. Beginning March 14th the last planting June 15th . 4 Replications

There are many advantages to early planting. Germination and emergence are slower in cooler soil temperatures but soybean plants are less sensitive after first trifoliate (V1) producing about two nodes per week. Later planted soybeans simply cannot catch up with soybean node development of earlier planted soybeans. Earlier soybean planting increases crop yield potential by allowing plants to generate more stem nodes. Plants need to produce as many stem nodes as possible, simply because stem nodes are where the plant produces flowers, then pods, and ultimately seeds within those pods.

In order for plants to acquire carbon dioxide to produce dry matter, the stomates in the leaves must open, allowing water inside the leaf to escape and carbon dioxide to be taken in for photosynthesis. Crop water use includes evaporation loss directly from the soil, and water lost as transpiration from the leaves. Crop water use efficiency can be improved by reducing evaporative water losses. Early planting helps reduce water loss because the cooler soil and air temperatures in early plantings reduce water evaporation compared to temperatures in late May and early June plantings. Canopy closure earlier in the season reduces solar radiation on the soil surface, lessening soil water evaporation. Higher humidity in a closed canopy also minimizes soil water loss.

In the future, planting dates could be slightly earlier. In some years higher yields have been recorded from earlier than our optimum plantings date. Earlier canopy closure will cover the ground sooner in the growing season, collecting nearly all of the incoming sunlight for use in photosynthesis. For highest yields, the soybean crop should collect as much of the available solar radiation as possible, simply because plants require the energy of sunlight to convert carbon dioxide into carbohydrates, protein, and lipids (oils). Later planted soybeans will not have the opportunity to collect as many hours of sunlight compared to earlier planted crops reducing yield potential. Remember the longest day is June 21, summer solstice.

In the future, planting dates could be slightly earlier. In some years higher yields have been recorded from earlier than our optimum plantings date. Earlier planting dates will result from varieties developed to provide sufficient vegetative growth under cooler soil temperatures and adverse conditions. Planting date studies continue to answer questions concerning the optimum planting dates. It appears many of the new varieties are not as photoperiod sensitive as older varieties; therefore, early planting has contributed to increased yields. Late planting dates are usually the most damaging to yields. Yield losses are quite variable but decline rapidly as soybeans are planted beyond the optimum planting dates.

Optimal seeding dates for each maturity group planted in Louisiana are:

Group III – April 15-May 10
Group IV – April 15-May 10
Group V – March 25-May 5
Group VI – March 25-April 30

County Agents Attend Educational Tour to Monsanto Research and Learning Center in Scott Mississippi

pictured from left to right as they appear are as follows:

Stephen Roberts, Stuart Gauthier, Scotty May, Rodney Johnson, Stephen Borel, Vince Deshotel, Donna Lee, Terry Erwin, Keith Normand, Thomas Legiandenyl, Jimmy Flanagan, Donna Morgan, Carol-Pinnell-Alison, J.B. Anders, Ronnie Levy, Fran Deville (Monsanto).

Entomological Crop Update

Sebe Brown and David Kerns: LSU AgCenter Entomologists

Cotton

With the majority of cotton across the state at bloom or close to it and the dry down of corn typically across the turn row, tarnished plant bugs (TPB) are beginning to move into cotton. Preliminary sampling of alternative hosts along field borders and ditch banks yielded very high levels of adult TPB for the second year in a row; however, we have yet to see the large numbers materialize in cotton.

Once cotton has reached bloom, producers and consultants should consider transitioning from sweep nets to drop cloths if they have not already. A typical drop cloth is 2.5 X 3 ft in area and black in color. Drop cloths are a better for sampling immature TPB while sweep nets are more suitable for sampling adults. However, adults moving out of alternative hosts, particularly along the edges, should be sampled using a both sweep net and drop cloth to accurately estimate adult and immature TPBs.

Cotton aphids and spider mites continue to be problem around the state; however, widespread infestations have not been found of either pest in cotton growing areas of Louisiana. We are continuing to receive reports of inadequate control with abamectin products for spider mites which is resulting in applications of alternate chemistries to clean up fields.

Soybeans

Soybeans around the state are from V5 to R6 depending on the region and all seem to have some stink bug pressure. Redbanded (RBSB) stink bugs were discovered in clover and other alternate hosts much earlier than anticipated in North and South Louisiana. This resulted in RBSB populations migrating into soybeans at the R1 stage and essentially waiting for beans to set pods. Brown and southern green stink bugs are being found in areas adjacent to corn usually mixed in with RBSBs as well. The LSU AgCenter has lowered the RBSB threshold from 6 insects per 25 sweeps to 4 insects per 25 sweeps.

A new invasive insect, the kudzu bug, was confirmed in Madison and Tensas parishes on June 25th and 26th. Kudzu bug numbers were very low resulting in 1 adult captured per 100 sweeps. This number is far below the action threshold set by Georgia and South Carolina entomologists at 1 nymph per sweep and/or if adult numbers are extremely high (multiple adults per sweep) and soybeans are stressed, a treatment should be considered.

Corn earworms have also begun to migrate into soybean fields between R2-R5 in North Louisiana. Corn earworms are typically more attracted to soybeans from R2-R5 because adults are attracted to flowering beans to oviposit their eggs. Fields further along in maturity are less desirable for colonization by ear worms; however, fields should be scouted routinely so populations are not missed. Pheromone trap catches confirmed a relatively small flight, less than 50 adults, in traps at the Northeast and Macon Ridge Research Stations in the past week. Although this is not a large outbreak of corn earworms, larvae will consume flowers and small pods if populations are not kept in check. Fields that have had a previous application of a pyrethroid for stink bugs or three-cornered alfalfa hoppers will typically have greater numbers of earworms because of the elimination of natural enemies.

Corn/Milo

Much of the corn around the state has surpassed the insect susceptibility stage of maturity; this has resulted in ear feeders such as corn earworms seeking other agronomic hosts including milo, soybeans and cotton.

In years previous, pyrethroid applications provided satisfactory control of corn earworms and sorghum web worms in milo; however, pyrethroid susceptibility monitoring has indicated high levels of resistance, and pyrethroid applications may not provide effective control of these pests.

Stink bug injury in corn has been relatively low and many fields around the state experienced very little stink bug pressure throughout the season. However, late corn should be routinely scouted for stink bugs ,especially corn prior to tasseling, since the damage often goes unnoticed until ear formation and no rescue treatments are available.

Sorghum midge numbers around the state have been relatively low throughout the season and scouting for midge can be difficult, especially in windy conditions. Sorghum midge only attack flowering sorghum, which occurs during the morning. Scouting sorghum for midge after 1 pm is almost always ineffective. Also, sorghum midge adults live only 1 day so each day is a new brood of midge. Thus, flowering sorghum should be scouted daily if possible, twice weekly at minimum. Because midge are weak flyers, infestations will typically begin along field borders and spread downwind from alternative hosts (Johnson grass). The threshold for sorghum midge in Louisiana is 1 or more midge per head.

If you have any questions or concerns please contact your local parish extension office or extension specialist for more information.

Upcoming Calendar of Events

2013 Macon Ridge Research Station Pest Management and Crop Production Field Day

When: Thursday, September 5th
Coffee and doughnuts at 8:30 a.m., field tours begin at 9:00 a.m.

Where: Tours begin at the Tom H. Scott Research, Extension, and Education Center
212 Macon Ridge Road, Building B Winnsboro, LA

Topics to be discussed by LSU AgCenter Research and Extension faculty during the field tour include:

- Effect of Management Practices on Late-Season Soybean Quality
- Influence of Starter Fertilizer on Corn and Grain Sorghum Yield and Plant Development
- Insect Pest Management Strategies
- Utilization of Cover Crops in Production Systems
- Plant Disease Management Strategies
- Pesticide Application Technology

Please join us as we showcase and discuss our 2013 research and demonstration plots. In addition, pest management, pesticide application issues, and AgCenter services updates will be provided following the field tour. Sponsored lunch will be provided at noon. Contact Donnie Miller, Resident Coordinator, at 318-435-2157 or dmiller@agcenter.lsu.edu for information concerning the field day.

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LSU AgCenter Research & Extension

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