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Louisiana Crops NEWSLETTER

CORN • COTTON • GRAIN SORGHUM • SOYBEANS • WHEAT

ISSUE HIGHLIGHTS

Tips for late-planted soybeans

BY TODD SPIVEY

Though most soybean-producing parishes of the state faced an unseasonably cool, wet spring in late March and April, soybean plantings did not fall behind the five-year average until the third week of April. Soon after the first of May, however, Louisiana began to dry out and plantings quickly caught up with and surpassed the five-year average by the end of the second week of May.

Even with this quick recovery by most producers, some 40 percent of our soybean acreage was or will be planted beyond the LSU AgCenter's recommended planting window.

Extensive planting date research conducted across the state has shown that soybeans typically begin to lose yield potential as planting extends past the second week of May.

Late planting decisions

For acres that have yet to be planted, there are a few ways to maximize the yield potential of late plantings. When choosing a variety for these late plantings, consider longer-season varieties to increase the amount of time available for vegetative development.

Soybeans are a photosensitive crop, so the date of planting influences the number of days to flowering. The use of early-maturing varieties will cause soybeans to bloom before the plants have fully developed. This means they will lack the vegetative infrastructure necessary to produce the number of pods needed to reach the maximum yield potential.

Growers should choose late maturity group IV or early MG V varieties when planting after the second week of May. Should plantings extend into late May and early June, select mid- to late MG V varieties.

Figure 1. Planting date research at the Dean Lee Research and Extension Center near Alexandria, Louisiana. The goal is to better understand the challenges faced by producers at various times throughout the growing season.
LSU AGCENTER PHOTO

Cultural practices can also help ensure maximum yield potential is realized when planting late. Growers should increase seeding rates by 10 to 15 percent, and if possible, they can reduce row widths to 20 inches. Both of these practices increase the chances of canopy closure, improving the plants' ability to intercept light while helping reduce weed pressure.

Even though the threat of seedling disease is considerably lower with late-planted soybeans, broad-spectrum fungicide and insecticide seed treatments should still be used with these plantings. Preventing stress in late-planted soybeans is critical, and seed treatments help prevent stand loss and early-season stresses such as seedling diseases and insects.

Managing late-planted soybeans

Early-season weed control is vital to eliminate competition with newly emerged soybean seedlings. Producers may need to make an additional burndown application prior to planting to ensure a clean seedbed. This is especially true considering the rainfall needed to activate many preemergence herbicides can become scarce in late May and June.

Producers will need to increase scouting for weed emergence and be especially timely with postemergence herbicide applications. Research by LSU AgCenter weed scientists has shown soybeans must be kept weed-free for five weeks after emergence to avoid yield loss due to weed competition.

Late-planted soybeans also have an increased probability of facing threshold-level foliar- and pod-feeding insects throughout the growing season. Late-maturing soybeans can also be inundated with late-season populations of stinkbugs as surrounding fields are desiccated. With little room for error, producers should intensively scout this crop and make timely insecticide applications when necessary. This could result in increased costs, but additional applications are vital to maximizing yield potential.

Soybean rust is often associated with late-planted soybeans in Louisiana. Although treatment for soybean rust in Louisiana is not usually economical, late plantings are more likely to need fungicide treatment, as they will be susceptible through the majority of reproductive development. Rust is easily controlled with fungicide applications. Producers should carefully scout these plantings and consult their local AgCenter agent for product recommendations if an application is warranted.

The longer soybean plantings are delayed, the greater the risk of drought stress-induced yield loss. For irrigated fields, this may mean increased irrigation applications throughout the reproductive development of the crop. Again, this increases the potential to incur additional costs of production.

Late plantings have less time to compensate for stresses in the growing season, particularly once soybeans transition into reproductive development. For producers with a late-planted crop, it is beneficial to anticipate these challenges. Knowing upfront the stresses that may be faced will help prepare for management of the crop to maximize the yield potential for late-planted soybeans. §

Growing season is starting to heat up

BY DAN FROMME

On April 22, we were running about 200 DD50s less than the same time last year. However, this past month has been a warm one, and we are now less than 100 DD50s away from last year's numbers as of May 22 (**Figure 1**).

Calculations of DD50s are based on the modified growing degree formula: the average daily temperature minus 50 degrees Fahrenheit. The ceiling for the daily maximum temperature is 86 degrees. The daily minimum temperature can be no lower than 50 degrees. §

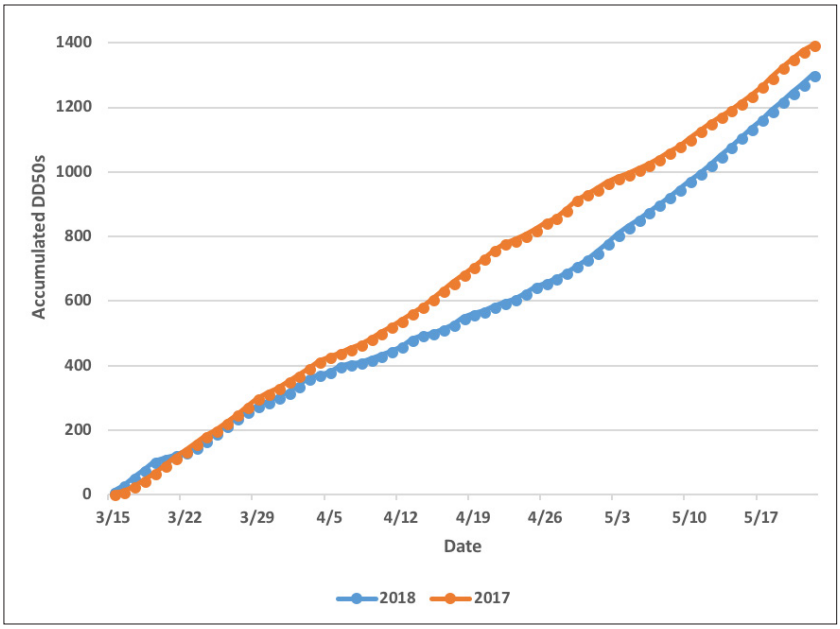


Figure 1. Accumulated DD50s for corn in Alexandria, March 15 to May 22.

Are you experiencing water stress?

BY STACIA DAVIS CONGER

This crop season started fairly hot and dry, with some farmers initiating irrigation as early as late April. I had anticipated the need to irrigate earlier than the past few years based on our less-than-adequate winter rains. However, it is still important to know if the plant stress can be attributed to lack of soil moisture before applying full irrigation events.

Figure 1. Field of corn that showed signs of stress during an early growth stage. LSU AGCENTER PHOTO

As a plant grows, it pulls moisture from the soil through the roots and transpires it from the surface of the leaves. When there is adequate soil moisture, the plant can easily exert the energy required for this process. However, plants will exhibit stress by physiologically slowing the transpiration process when the energy required to remove moisture begins to reach the available energy provided by the plant.

The visual cue for the reduction in transpiration can manifest in many ways, including curled or folded leaves. Thus, curled plant leaves have become synonymous with moisture stress. But they also could be the result of other factors, such as heat stress and soil compaction, or a combination of factors.

For example, **Figure 1** shows a portion of a corn field about to be watered at the beginning of May. The topsoil looks bone dry, as rainfall last occurred approximately 17 days before the photo was taken.

Leaves were twisting on all plants in the field, indicating the condition causing the stress was broadly applicable and not specific to a portion of the field. The majority of the corn in this field had reached the V5 stage.

A soil core was pulled from the root zone of a corn plant — about 2 inches from the stalk and 9 to 10 inches deep (**Figure 2**). The soil from the top 2 inches of the core (right side in picture) shows crumbly soil with a light brown color. The soil from 2 to 7 inches deep has a darker color than the surface soil. There is a bit of flaking and cracking on the outside but the soil remains formed by the corer. The soil from the bottom 4 inches was fully formed by the corer with some slicking and had a similar dark brown color.

Considering the appropriate indicators of soil moisture status using the look-and-feel method, the top 2 inches would be classified as dry, with no available moisture for the plant. The 2-to-7-inch section is approaching low moisture conditions, with almost 50 percent of available moisture left in that section of the profile. The bottom 4 inches of soil indicates fair to excellent moisture. There would be significant moisture for the plant as long as the core represents a homogeneous soil type. Thus, this stress likely relates to the high frequency of daytime temperatures exceeding 90 degrees Fahrenheit.

If the soil type changed between the bottom and middle portions of the core (potentially indicated by the slight reddish tint in the bottom 4 inches), then it's more likely that water stress was a product of a shallow root system caused by a hard pan or compaction that was amplified by the high daytime temperatures.

In both of these potential situations, applying irrigation with the intention of reaching the active roots of a deep-rooted crop may become wasteful — and costly — as the water does not need to infiltrate below the top 6 inches. However, irrigation may become beneficial for reducing heat stress and can help reduce water stress caused by compaction. Still, this would only provide temporary relief of those issues.

The LSU AgCenter recommends irrigating near the beginning of the reproductive phase (R1 to R2) or in the late vegetative stages of most row crops (corn, soybeans, cotton) if there is not adequate moisture. Irrigating for a deep-rooted crop before this period can waste water, as the plants can typically handle water stress early in the season without reductions in yield or quality. As always, it's better to check the soil moisture in some way before pulling the trigger on irrigation. §

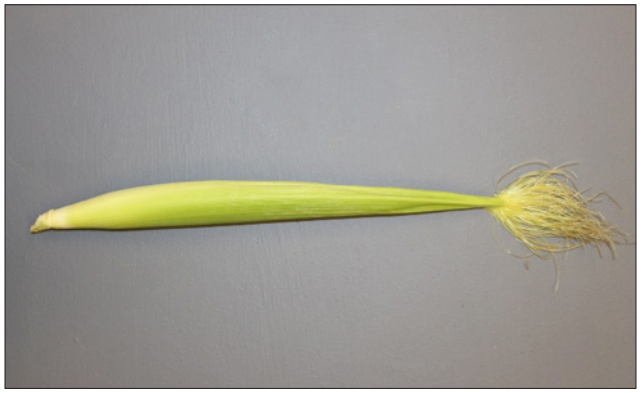
Figure 2. A soil core was extracted near the roots of the corn to determine available moisture levels. There appears to be adequate moisture approximately 2 inches below the surface. LSU AGCENTER PHOTO

Reproductive growth stages of corn

BY DAN FROMME

R1 (silk)

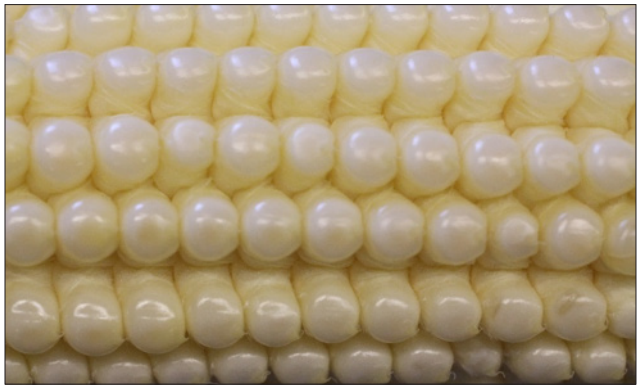
About 65 days after planting



- One or more silks extending outside the husk leaves.
- Only reproductive stage defined not by the characteristics of individual kernels but rather by the appearance of silks outside the husk leaves.
- The first silks to emerge from the husk leaves are those attached to potential kernels near the base, or butt, of the ear.
- The plant has now reached its maximum height.
- The upper, or primary, ear is most often located on node 13 but may be off by one node due to the hybrid, planting date and environmental conditions.

R2 (blister)

About 12 days after silking



- Kernels resemble blisters now. The outside is ivory-colored and the inside is a clear liquid.
- The ear is now at its maximum length.
- Kernel abortion occurs primarily during R2 and R3 and is related to an inadequate carbohydrate supply from the plant.
- The kernels fertilized last are those aborted first. Tip kernels are aborted most often.
- Ear silks are mostly brown and drying fast.
- Kernel moisture content is approximately 85 percent.

R3 (milk)

About 20 days after silking

- Also known as the roasting ear stage.
- Kernels have a milky interior. The outside is yellow and the inside is translucent white.
- Kernels now completely fill the space between the kernel rows.
- Kernel abortion can still occur.
- Kernel moisture content is approximately 80 percent.

R4 (dough)

About 26 days after silking

- The inside consistency of kernels is similar to dough.
- Near the end of R4, kernels (often those near the base) begin to indent at their top.
- Cob color varies by hybrid. It can remain white (as it was prior to R4) or change to pink or red.
- Stress during this stage will not result in aborted kernels, but instead a reduction in kernel weight.
- About half the mature kernel dry weight is in place.
- Kernel moisture weight is approximately 70 percent.

R5 (dent)

About 38 days after silking

- Kernels are dented due to declining moisture content and increasing starch accumulation.
- The milk line progresses down (see photo on the right).
- At full dent, kernel dry matter is about 60 percent of final.
- By half milk line, kernel dry matter is about 88 percent of final.
- Kernel moisture content at the beginning of the dent stage is approximately 55 percent.

R6 (physiological maturity)

About 60 to 65 days after silking

- Starch development has progressed to base of kernel.
- Phloem tubes, which carry food to grain, are cut off.
- Kernels are at maximum dry matter accumulation.
- A black layer forms at the kernel base where the kernel attaches to the cob.
- Stress has little effect on grain yield.
- Kernel moisture is 30 to 35 percent.

* The number of days between the different reproductive stages are what has been observed in Louisiana during the past several years. All normal corn plants follow this same pattern of development, but specific time intervals between stages may vary between different hybrids and planting dates. The number of days between reproductive stages will vary as temperature varies between years. Also, environmental stress may lengthen or shorten the time between the reproductive stages. §

Thrips, mites showing up in Louisiana cotton

BY SEBE BROWN

Cotton

With much of our cotton planted for 2018, Louisiana is beginning to experience insect issues in seedling cotton. Based on our thrips species surveys, the breakdown appears to be a 50-50 mix of western flower and tobacco thrips. However, I have received reports of almost 100 percent western flower thrips or 100 percent tobacco thrips, depending on the location.

Tobacco thrips adults are black, while western adults are amber to yellow in color. Immature thrips are small versions of adults that lack wings. Immature thrips from both species appear yellow to orange.

Thrips species can dictate how well an insecticide seed treatment holds up. Westerns are still susceptible to Cruiser (thiamethoxam) while tobacco are resistant. Both species are susceptible to imidacloprid. Avicta Elite seed treatment contains thiamethoxam, imidacloprid and abamectin (abamectin is for nematodes). Aeris contains imidacloprid and thiodicarb. Aeris is a consistent performer in our insecticide seed treatment efficacy trials, and Avicta Elite is performing well in 2018.

I expect to see Avicta Elite hold longer in areas where the primary species present is western and Aeris to perform well where tobacco thrips are the primary species. However, both treatments are satisfactory where we have mix of both species. Depending on species present and environmental conditions, insecticide seed treatments have held well in many places but needed an over-spray in others. Once cotton reaches the four-true-leaf stage, thrips are no longer a cause for concern.

Twospotted spider mites are appearing in much of the cotton in northeast Louisiana. Spider mite infestations often originate from incomplete spring burndown applications, tree lines and turn rows. Post-emergence herbicide applications and hot, dry weather create an ideal environment for mite proliferation. Mites move the greatest distances by wind and mechanical movement, which often create hot spots in different parts of fields.

Spider mite infestations in seedling cotton usually do not warrant applications for an entire field. Spot treatments where severe injury and stand loss is occurring may be warranted. If fields are questionable on treatment and rain is in the forecast for the near future, it may be prudent to wait on dedicated miticide applications. Rainfall, especially on seedling cotton, will often dislodge spider mites, effectively reducing populations.

If an application is warranted, rotate modes of action if further applications are needed later in the season. Abamectin resistance in twospotted spider mites has been documented in Louisiana, and high label rates should be used.

An unconventional option is to use glufosinate (Liberty, Cheetah, etc.) for post-emergence weed control. The LSU AgCenter has documented miticidal activity of glufosinate in cotton. Glufosinate is not labeled as an insecticide or miticide. However, this compound has the utility of controlling twospotted spider mites that may be on weeds or cotton when an application is made. Glufosinate works on contact and has no efficacy on eggs.

Finally, immature thrips are voracious predators of spider mite eggs. Thrips are an economic pest in cotton from the one- to four-true-leaf stages, but once cotton reaches the four-true-leaf stage, thrips are an important natural control agent that will help keep mite populations in check.

Soybeans and corn

Insect issues have been minor in early-season corn and soybeans. Corn earworms are beginning to appear in pre-tassel corn in north Louisiana. Corn borer trap catches remain at zero. §

Crop Production & Pest Management Field Day

EXPO

Field Crops Research Tour

Horticulture Seminar featuring

IPM Interagency Training

June 19, 2018

LSU AgCenter

Tom H. Scott Research, Extension and Education Center

Winnsboro, LA

8:30 a.m. – Agricultural Industry EXPO

10 a.m. – Field Tours & Horticulture Seminar

Noon – Lunch & Administrative Updates

1:30 p.m. – Interagency Agent Training

The LSU AgCenter and LSU provide equal opportunities in programs and employment.

Agricultural Industry EXPO

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