The University of Georgia
Cooperative Extension
College of Agricultural and Environmental Sciences

Georgia Cotton

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Current Cotton Issues *(Collins, Whitaker, Roberts, Culpepper, and Shurley)*

There have been several recent reports of poor stands and seedlings having difficulty emerging. The information below involves complex and multidisciplinary information, and was released to county agents one week ago, however the situation in Georgia has changed very little since then.

1. Since it has been so dry, many dryland fields were planted rather deep (1.25-1.5 inches) in hopes of utilizing some of the moisture that was present at these depths for a very short period of time. Anytime cotton is planted this deep, difficulty with seedling emergence could be expected. Exceptions may include rather soft soils that do not form a surface crust, with moisture relief in the near forecast. In many of the recent reports, some seedlings germinated/emerged while others did not, primarily resulting from inconsistencies in available moisture at these depths, and also a result of this moisture being depleted more rapidly than anticipated. Some of the seed that did not germinate soon after planting, may in fact still germinate once rains return, and only time will tell. In several cases this week, some seed may have germinated and died before (or soon after) emergence, due to hot soil temperatures and rapid depletion of moisture at or near the soil surface. Some growers were able to save their seedlings with a very timely irrigation, which will likely need to be followed by subsequent irrigations. However in these cases, timeliness of irrigation was absolutely critical, as waiting another day or two may have been too late. If this is the case, the grower may consider replanting, although this is something that should generally be avoided. The need for replanting must be determined on a case-by-case basis, and potential benefits must be weighed against additional costs for each individual situation. Previous data from Georgia suggests that replanting may generally be justified if approximately half of the planted area is occupied by 3-foot skips. When determining how many 3-foot skips are present, remember to give appropriate credit to large skips (for example, a 12-foot skip should be considered as four 3-foot skips)

2. Some folks have reported seedlings expressing difficulty emerging through the soil surface with some "broken neck" seedlings observed, where the cotyledons appear stuck in the soil and the hypocotyls break under this pressure. For most situations, the only option was to keep the water running in fields where irrigation is an option. We don't want to flood any cotton, nor irrigate unnecessarily, however it is very important that the soil remain moist until seedlings

have fully emerged. Remember, that we have had deficit soil moisture for quite some time, and warm windy conditions continue to dry the soil more rapidly than normal. These situations must also be monitored very frequently to determine if and when the soil surface dries out again. Light to moderate (0.5 to 0.75 inches of water, depending on soil type) and frequent irrigation could also improve stands. Heavier irrigations may be required in fields where subsurface moisture has been severely depleted. There is a risk of herbicide injury in these cases, but establishing a decent stand should be priority at this point. Herbicide injury can be managed in most cases, if a good stand is present. Delays in maturity can be expected, possibly increasing the importance of very frequent monitoring for thrips. If particular fields are crusting over, light rotary hoeing may help seedlings emerge, but this needs to been done in a very timely manner, as it could damage fully emerged seedlings. Switching to a hill-dropped planting system from this point forward could also improve stands in soils that tend to crust.

3. Similar to last year, some growers have observed extensive herbicide injury with evidence of severe thrips damage. Herbicide injury typically slows seedling growth for a while, allowing thrips to feed longer on developing leaves. We have been experiencing higher than normal thrips infestations, especially in early planted cotton, which tends to exacerbate the problem. In these cases, growers should monitor for thrips presence very frequently, and should also treat these fields very promptly, **if** a foliar spray is justified. Keep in mind that seed treatments may not provide optimal suppression in situations where seedlings are not growing rapidly, and one or more foliar sprays may be required.....this can only be determined through frequent monitoring, and unnecessary sprays should be avoided. Additionally, these situations may scare some folks away from the use of some pre-emergent herbicides. This should not be the case!!!! By now, most folks should realize the absolute necessity of every pre-emergent herbicide option we have available for combating pigweed, and this should not change. Prior to Roundup Ready cotton, a little herbicide injury was not uncommon at all. This is nothing new.

By this point in time, thrips numbers appear to have decreased substantially. With warm temperatures and moisture, seedlings should be growing rapidly, and are therefore less likely to require a foliar spray. Again, unnecessary sprays should be avoided, but the necessity of a foliar spray can only be determined by intense and frequent scouting.

4. There have been a number of questions regarding the decision to "dust-in" cotton and wait on rainfall prior to the insurance cut-off date. There are two ways to approach this. One approach is a risk management and/or business decision based on prior experience and the rapidly approaching insurance cutoff date. This approach may result in variable business decisions from grower to grower. The other approach is from an agronomic standpoint. Some folks may dust in cotton, and get a rain two to three weeks later and achieve optimal stands. Others may have poor stands. This is largely dependent on how much (if any) moisture is available at planting, how deep this moisture is, temperatures after planting, and how much rain occurs when it finally does rain. Due to this variability, it is very difficult to recommend that a grower dust-in cotton unless a rain event is almost guaranteed within a few days (usually a tropical depression or a wide-spread front / storm system that covers most of the state). Some folks have dusted in cotton in fields that had some very marginal moisture in the zone where seed was placed. In many cases this has led to erratic stands and other complications. Keep in mind that replanting should be generally avoided, so it is important to get it right the first time, speaking from an agronomic

standpoint. Additionally, if a grower decides to dust in cotton, the seed should be placed in a relatively shallow zone without moisture to allow rainfall to reach the seed and begin germination. A significant risk of dusting in cotton is associated with a very light rain (0.1-0.2 inches) following planting which may provide just enough moisture for some seed to germinate but not enough to sustain seedling growth through full emergence. Of course, there is always the risk that conditions will remain dry to the end of our planting window, however we can achieve acceptable yields if germination occurs by June 15th if we have good weather throughout most of our growing season, so we still have some time. However, preventing delays in maturity may become more important if cotton is planted towards the end of our planting window. At these later planting dates, rapid germination and stand establishment becomes more critical, as we have lost most of our flexibility by that point in time. Therefore, timely irrigation and managing the crop for a short-season (preventing any additional delays in maturity) are more critical to the success of later planted cotton.

Dr. Shurley recently released some helpful information regarding planting/replanting considerations from a crop insurance and risk management standpoint. This report entitled "2011 Drought and Cotton Planting/Replanting Decisions" can be found at www.ugacotton.com under "Breaking News".

5. As we are in the second half of our planting window, some folks have asked when they should start planting earlier maturing cultivars. There are several things to consider here as well. Historically, approximately 20 percent of our cotton is planted in the first two weeks of June, even when DP 555 BR was widely planted. Not all June planted cotton was planted to DP 555 BR, but some likely was. Late June planting was not necessarily uncommon in far South Georgia, however this may have been risky in some circumstances. We now have a rather wide range of maturity among our currently available varieties, but it is important to remember that essentially all of our newer varieties are earlier maturing than DP 555 BR to some degree. Additionally, there is no magical date when we need to convert over to earlier maturing varieties for several reasons. Keep in mind that even an early maturing variety may have late maturing tendencies if it is over-fertilized and over-watered, with little or no PGR management. Thrips and herbicide injury may also further delay maturity. Other varieties may behave like an early or a late maturing variety depending on the environment in which it is grown. For early June planted cotton, naturally we will have to focus more on developing a crop in a shorter season environment, but this encompasses more than just variety maturity alone. Therefore these decisions should be made more in regards to management and environment as opposed to simply making these decisions based on variety maturity. At later planting dates (first 2 weeks of June), possible delays in maturity should be prevented or managed, and growth should be monitored very frequently to prevent excessive growth, regardless of the variety planted. For later planted cotton, more attention and/or management may need to be given to mid/full-season or growthy varieties in order to rapidly develop an acceptable crop before the onset of unfavorable conditions, but variety decisions should still be made based on yield potential in particular environments (dryland versus irrigated). For example, it may be unwise to plant a very early maturing variety in a dryland situation (if its performance is likely to be reduced) just because it is planted late.....on the other hand, a grower may not want to plant a late maturing growthy variety in a heavily irrigated situation of if he is not likely to manage it for a shorter season environment.

Rapid emergence is also imperative for later planted cotton. As the planting window comes to an end, replanting may no longer be an option, therefore irrigation may be necessary for rapid emergence and stand establishment. Slightly increasing seedling rate may be necessary in some cases in order to offset the risk of stand loss. Remember that we tend to lose a lot of flexibility during the latter part of our planting window. Additionally, waiting on rain during this time will further delay emergence and maturity of this late planted cotton. Keep in mind that soil temperatures during this time are usually quite a bit hotter, and soil moisture may deplete much quicker than normal.

Disease and Nematode Management Options Limited in June (*Kemerait*)

Prior to closing the furrows in the field, today's cotton growers have numerous options for the management of plant parasitic nematodes and seedling diseases. For example, ST5458 B2RF and PHY367 WRF offer some resistance to the southern root-knot nematode. Though 2011 may be the "swan song" for Temik 15G, growers still have a powerful ally in Telone II and the more limited efficacy but convenience afforded by AVICTA Complete Cotton, AERIS Seed-Applied System and Acceleron N for nematode control. For some growers, Vydate-CLV may also be a management option. Cotton growers can fight seedling diseases with in-furrow fungicides and with additional fungicide treatments like Dynasty CST, Trilex Advanced, and Acceleron for added insurance. However, with the exception of an early season application of Vydate CLV, once the furrow is closed, there are few if any management options for seedling diseases or nematodes.

Recent findings at the University of Georgia offer hope that a newly recognized disease, Corynespora leaf spot, can be managed with the judicious use of a fungicide like Headline; however such a fungicide application is generally not recommended until approximately 2-4 weeks after first bloom. Research will continue this season towards management of this disease with Headline, Twinline, Quadris, and tebuconazole. If current weather conditions persist throughout the season (i.e. hot and dry), growers can expect severe outbreaks of Stemphylium leaf spot, which is largely the result of deficiencies of potassium within the cotton plant. Management of Stemphylium leaf spot is largely dependent on ensuring adequate levels of potassium in the plant; fungicides generally have very limited, if any, benefit in the management of this disease.

Although management options are few and far between, cotton growers are encouraged to pay particular attention to their crop in the first month of the season to begin to observe areas in the field where stunted growth may indicate problems with nematodes. Once such areas are identified, growers may have the opportunity in the near future to use site-specific applications of Telone II to ensure cost effective management of such problems that affect only a predictable portion of the field. The University of Georgia Cooperative Extension will be conducting studies at several locations in the southern part of the state to validate the efficacy of site-specific applications of Telone II based upon soil particle size estimated using soil-conductivity measured with a Veris rig. Growers interested in observing such trials should contact their UGA Cooperative ANR agent.

Cotton Herbicide Issues Seem Overwhelming This Season ***(Culpepper)***

This year has simply been a nightmare when it comes to herbicides and cotton injury, if you are lucky enough to have cotton up. Therefore, lets attempt to address some of the more common and challenging questions.

1. Why am I getting so much herbicide injury in a drought? In most situations, the level of injury from at-plant herbicides is directly related to the time in which rainfall (irrigation) occurs and the specific herbicides used. In cotton, herbicide injury from at-plant products often takes two forms.

The first type of injury is observed when the herbicide is moved into the soil profile (rain/irrigation) where the herbicide is surrounding the germinating seed. As the seedling is emerging, herbicide uptake by roots and shoots are occurring. This type of injury most often results in stand loss, stunted (slower emerging) plants, and or plants that exhibit chlorosis. Obviously, stand loss can influence cotton yield but in most cases where cotton plants are slightly stunted, yield loss is not observed. However, slower growing cotton increases the likelihood that growers will delay postemergence herbicide applications. Delayed postemergence applications will likely reduce pigweed control and increase management costs.

The second type of injury is observed when the herbicide is sitting on the soil surface and rainfall or irrigation occurs at or near emergence (usually 1 day before emergence through 5 days after emergence). In this situation, the herbicide injury is a result of foliar uptake as the herbicide often splashes onto the emerging plant or is taken up as the cotyledons (crook) push through the soil surface. Injury (necrosis, malformed leaves etc…) of this sort can vary widely depending on the herbicides applied.

The level of injury noted this season is likely a response to the increased number of irrigations being required to get a stand of cotton. Multiple irrigations are essentially making herbicides much more available, thus more active. There is no good solution as growers must provide water for the cotton but understanding the relationship of irrigation and herbicides can be beneficial.

2. Herbicide injury is killing us, we have to stop with these at-plant herbicides. There is essentially no way to produce Roundup Ready cotton in our state without at-plant herbicides. In fact, for a Roundup Ready system, growers will need either a Reflex mixture or a mixture of Prowl + Staple + Diuron (or Cotoran) behind the press wheel. Ignite-based programs do allow much more flexibility in selecting at-plant herbicides but we strongly encourage growers apply at least one residual herbicide at planting.

3. In Roundup Ready cotton, I have half a stand up and I am waiting on the rest of my cotton to emerge but weeds are up? For a Roundup Ready producer, three valid topical options exists including 1) Roundup + Dual Magnum (or other Dual products), Roundup + Warrant, or Roundup + Staple. In this situation, Dual is out of the question as it could severely injure the cotton that has not emerged. Our 2011 research with Warrant is very intriguing, but for now we would still encourage growers to avoid this application to cotton seeds that have not emerged.

Thus, the best option would be Roundup + Staple as Staple can be applied both preemergence or postemergence safely to our cotton crop.

4. I have not decided if I am going to replant or keep the stand I have. While I am deciding, weeds are emerging and I need to spray…..what should I spray. Again our topical applications in Roundup Ready cotton include Roundup + Staple, Roundup + Dual, or Roundup + Warrant. If we don't replant, all of these options are valid. But, if we do re-plant, then this herbicide application would be made prior to re-planting, essentially being a burndown treatment. None of the residual herbicides (Dual, Warrant, Staple) are labeled for a burndown and therefore are not recommended; however, research suggests the greatest potential for injury to re-planted cotton would be Dual, with Staple being the least concerning.

In an Ignite-based program, simply apply Ignite and then decide if you are going to replant or keep the stand that is present. Apply residual herbicides in the system once the final decision is made.

Cotton Scout Schools: Tifton June 13, and Midville June 21, 2011 (*Roberts*)

Cotton insect scouting schools are annually held at various locations in Georgia. These programs offer general information on cotton insects and scouting procedures and will serve as a review for experienced scouts and producers and as an introduction to cotton insect monitoring for new scouts. The annual Cotton Scout School in Tifton will be held on June 13, 2011 at the UGA Tifton Campus Conference Center. The Midville Cotton Scout School will be will be held on June 21, 2011 at the Southeast Georgia Research and Education Center. The training programs at each location will begin at 9:00 a.m. and conclude at 12:30 p.m. No pre-registration is required.

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Your local County Extension Agent is a source of more information on these subjects.
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