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College of Agricultural and Environmental Sciences
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Early Season Irrigation Considerations for Peanut Production Wesley Porter, Extension Precision Ag and Irrigation Specialist, UGA David Hall, Extension Water Educator, UGA Jason Mallard, Extension Water Agent, UGA

Most if not all peanuts in the state of Georgia should be planted sometime during late April and into early- to mid- May. Once the crop is in the ground it's time to start considering how to manage it, and specifically how to manage irrigation. There are many irrigation scheduling tools available to producers from Checkbook methods, to computer models and soil moisture sensors. Depending on your operation and what your irrigation capabilities are one of these methods may be a better fit than another. The simplest method is the UGA Checkbook in Figure 1 below. UGA Extension has developed a quick and easy irrigation scheduling guide that is laminated and contains the four major row crops grown in Georgia. The guide can be downloaded at Irrigation Reference Guide for Corn, Cotton, Peanuts, and Soybeans | UGA Cooperative Extension. Peanuts typically do not require a lot of water in the first month after planting as exhibited by the yellow box and water use curve below. However, if it gets hot and dry you may need to apply a few small irrigation applications. The yellow box below represents the first five weeks after planting of peanut water requirements. Keep a track of rainfall and temperature, your irrigation efficiency (typically around 65-70% for high pressure systems and 80-90% for low pressure systems), and make irrigation applications accordingly. Keep in mind that the water requirement below is irrigation plus rainfall, and the weekly water requirement recommendation was developed based on a historical average of evapotranspiration. So, your actual water/irrigation requirement may vary slightly based on weather conditions and rainfall during the growing season.

For most of Georgia, we have not received significant rainfall since Mid-April and our soil moisture has depleted relatively rapidly. There is no significant rainfall predicted through the long-term forecast. Thus, we need to be planning on pre-irrigating if necessary. The temperature predictions for the first week of May are getting into the upper 80 to low 90's. Thus, if it stays hot and dry irrigation will most likely be needed during the first month after peanut planting. So, don't fall behind early during the season. In addition to early season irrigation, due to the depletion of soil moisture from the heat and lack of rainfall, farmers may need to consider pre- and post- irrigating their fields to aid in promoting better seed germination during planting. It is advised not to just irrigate after planting into hot dry soils, as the cooler water may shock the seeds. If irrigation is needed for germination irrigate prior to and after planting! For a more in-depth irrigation recommendation it is suggested that you look into implementing either a computer scheduling model either online or via a Smartphone App, or soil moisture sensors. For more information about either of these contact your local county Extension Agent.

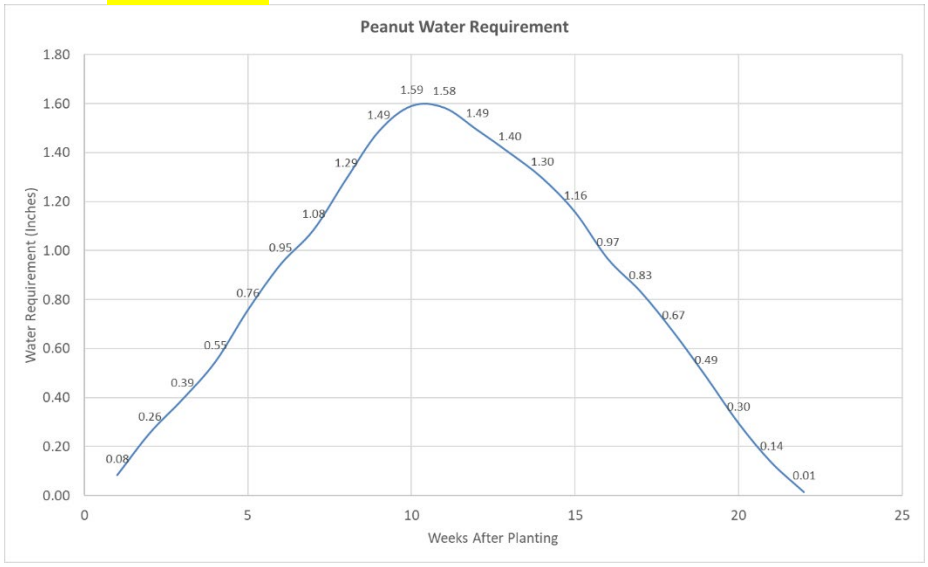

Figure 1. Seasonal Peanut Water Requirement.

For peanut farmers who utilize tools such as soil moisture sensors for irrigation scheduling, there are a few quick reminders to keep in mind. We tend to visualize the above ground plant biomass and forget what is growing below the surface. We can sometimes be guilty of placing a sensor in the row of the peanuts let it start logging data, making decisions from that data and assuming everything is good to go. Unfortunately, we need to make sure we know what is going on in the field before we blindly start following the sensor. Based on when you planted certain fields peanuts may be spread in age by several weeks while some are still in the bag, this is a good time to think about “weighting sensor depths” according to rooting depths.

Figure 2. Visual development of root development as the peanut plant progresses in age.

Late April/early May signals planting time for peanuts. One thing is certain in farming, one year from the next is never the same. Weather and available moisture are constant variables. Adding rooting depths and plant needs in the equation and creates the need for a formula for weighting sensor depths in your irrigation scheduling decision an important factor throughout the growing season. Most sensors come with two or three depths that measure available moisture. Early in the season, we generally have cool nights and afternoon temps are "normally" around the low to mid 80s. The evaporation rate is low in comparison to the dry hot summer days and nights. The root profile for the first month develops fairly shallow in the soil. These combinations of events reflect the plant water needs, as shown in our UGA Checkbook method.

Moisture sensors generally default to an average of using sensors available on the probe for a trigger decision. This can provide false water needs for young peanut plants. For example, if a 16" depth is showing a dry reading and the 8" sensor is reading adequate moisture, the average will possibly trigger an irrigation event. If a peanut plant has just fully emerged and your root profile is in the 8"-10" range in this scenario, you actually do not need to irrigate. Now, considering the rooting depth let's weight the 8" sensor by an 80% value and the 16" sensor by 20%. Now since the average is weighted higher on the shallow sensor it can be seen that irrigation may not be needed. You should not begin to fully use deeper sensors for irrigation scheduling decisions until you see water use occurring at those depths. Weighting moisture sensors can be very beneficial but can be harmful if adjustments are not made during the growing season. If you are interested in weighting sensors, below are UGA Extension suggestions to consider for weighting sensors during the growing season:

D1 = shallow sensor D2 = middle sensor D3 = deepest sensor

- Early Season: 80% * D1, 20% * D2, 0% * D3
- Early-Mid Season: 60% * D1, 30% * D2, 10% * D3
- Mid-Season: 50% * D1, 25% * D2, 25% * D3
- Late Season: 40% * D1, 30% * D2, 30% * D3

Soil moisture sensors provide the most accurate means of monitoring available soil moisture. Monitoring the root zone and available moisture present is a great tool in irrigation scheduling. If you have further questions about irrigation scheduling on your peanuts reach out to your local UGA County Extension Agent.

Weather and Climate Outlook for May 2022 and Beyond
Pam Knox, Agricultural Climatologist, UGA

April 2022 was a mixed bag climate-wise, with some areas in central Georgia receiving a lot of rain while others missed out. This led to dry conditions in some parts of the state that have farmers there worried. Temperatures in the northern ¾ of Georgia were cooler than normal overall, while farmers in southern Georgia experienced conditions that were a bit warmer than normal. As a result of the variable rainfall and warmer than average temperature, moderate drought and abnormally dry conditions cover a quite a bit of South Georgia as of the beginning of May.

The climate prediction for May shows a continuing trend towards warmer than normal temperatures across the state, but especially along the southeastern coastal plain. This is due both to the continuing trend towards warmer temperatures we see worldwide and the surprising continuation of La Niña into a third year. The prediction for May's precipitation from NOAA's Climate Prediction Center shows us in equal chances of lower, near, and above normal rainfall for May. This is not surprising since our current weather state puts us in a summertime pattern, with daily thunderstorms (and some occasional severe weather) dropping rain in some places while it misses others, so large-scale rainfall patterns are hard to forecast. Because of that, the drought conditions are predicted to continue through May, although they may disappear later in summer once the tropical season kicks in.

The Atlantic tropical season officially begins on June 1. The predictions this year are for another active season due to the continuing influence of La Niña, which tends to suppress the jet stream which might otherwise keep tropical waves developing into storms or hurricanes. Of course, the predictions only cover the number of named storms per year, so we cannot say at this point if they will bring rain to the Southeast or if they will move over Texas or up the East Coast this year. Tropical rainfall is an important part of the water cycle in summer in the Southeast, so we hope that at least some tropical moisture will come over the summer. It is not too early to think about tropical storms, since for most of the last few years we have at least one named storm before the official start of the tropical season. The long-range models are already suggesting that we may get at least one storm in mid-May off the East Coast, although it may not bring much rain to most of the Southeast. Now is the time to prepare for hurricane weather, since the season will be on us before you know it.

The current La Niña has been surprisingly strong this year, and for now we don't see an end. Only a couple of La Niñas since 1950 have lasted for three years, so this makes it more difficult to predict what effects it might have on climate conditions. For now, our best bet is to consider this just another La Niña summer, with limited effects on temperature and rainfall during the growing season and the biggest impact on the tropics.

Peanut Pointers - May, 2022 Mark Abney, Entomologist, UGA

Most of the insect questions we receive from growers in May are going to be about thrips. Usually thrips questions in May mean something went wrong (or at least someone thinks something went wrong).

"The thrips are eating me up. Should I spray them?" The answer is: "It depends".

When were the peanuts planted? Thrips injury is almost always most severe around 28 days after planting, but spraying them then is generally not a good idea. By that time, the damage is done, and if growing conditions are favorable the plants will begin to "grow out" of thrips injury within a week. If it is hot and dry and/or the peanuts have herbicide injury, spraying might be justified, but it will still be late.

What insecticide was used at plant? There will almost always be some adult thrips on peanut seedlings regardless of insecticide use. Peanuts treated with phorate (Thimet) or aldicarb (AgLogic) rarely require any additional insecticide. Thrips injury is often

worse in fields treated with imidacloprid in-furrow than those treated with either of the granular insecticides, and the decision to spray fields treated with imidacloprid can be tough. By the time we think a field that was treated with imidacloprid needs a foliar insecticide, it is usually too late to do much good (we should still consider the weather and any herbicide injury). I think most fields that are not treated with an insecticide at plant will benefit from an automatic acephate application around 14 days after planting.

How many thrips are on the plants? Recently completed research at UGA suggests that the threshold for thrips on untreated peanuts is 2 adult tobacco thrips per plant at 14 day after planting. It is not uncommon to find two adult thrips per plant on treated peanuts, but we expect reproduction to be low in treated fields. Immature thrips cause most of the injury. In fields where an insecticide was applied atplant, the presence of large numbers of immature thrips can indicate a problem with the in-furrow application. When this happens, we have to go back to the first and second questions and consider if it is too late to benefit from a foliar application.

When the decision is made to spray thrips, most growers will be using acephate. It is important that the "peanut rate" is used…the "cotton rate" will not be effective in peanut. Cutting the acephate rate IS NOT the place to save some money.

Another question is, "Will this foliar spray help reduce tomato spotted wilt?" Sometimes this is phrased more as a statement: "I am going to spray thrips because I'm concerned about tomato spotted wilt". There are no foliar applied insecticides that reduce the incidence of TSWV.

Lesser Cornstalk Borer

No one knows what the weather will do over the next few weeks, but current warm, dry conditions are favorable for the development of lesser cornstalk borer populations. If it remains hot and dry at the end of May, we need to be scouting fields for LCB. Here is a link to a UGA video about scouting for LCB in early season peanuts: Lesser Cornstalk Borer Scouting Video. Remember that irrigated fields remain susceptible to LCB at least until the row middles lap. After that, adequately irrigated fields will generally be at low risk while non-irrigated fields remain at high risk.

In-Field Planter Considerations Simer Virk and Wes Porter

As peanut planting picks up across the state, it is important to re-emphasize the value of proper planter setup and operation to attain a timely and uniform stand. The previous article on planter preparation covered key points on planter inspection and maintenance that could be performed before heading out to the field. While it provided a good opportunity to prepare for planting, an important aspect of ensuring good planter performance is regular in-field checks and adjustments to different planter components as needed for the prevalent field conditions. Planter issues are common during planting but can be mostly avoided by paying attention to the planter operation and catching issues before or as they occur in the field. Here are few additional considerations to keep in mind while planting peanuts to minimize or prevent any potential planter related issues in the field:

- First and foremost, if you haven't started planting peanut yet, there is still time to perform a thorough planter inspection using the checklist available here Planter Checklist (UGA).
  Remember to take care of any major issues or parts that needs to be replaced before getting out in the field and plant. Neglecting minor issues now can result in greater downtime and/or major problems later in the season.
- If you are already out in the field planting peanut, make sure to get out and dig behind the planter to ensure that the desired seeding rate (seeds per foot), seed depth, and seed-to-soil contact are attained across every row. Seeding rate

and/or depth variability is very common among the row-units on the same planter so checking each row is important to have a uniform stand across the field.

- Variability in planting conditions within the same field or among the fields is again common and will require adjustment to planter settings based on the existing conditions, with special consideration to variability in soil texture and moisture. A change in crop such as from cotton to peanuts or corn to peanuts would require adjustments to vacuum (due to seed size) and seed meter settings to ensure proper seed metering with good singulation.

- When you notice any seed singulation, spacing, or depth issues in the field while planting, make sure to properly identify and fix planter issues before continuing to plant across the whole field with the same planter. It doesn't take long for small seed metering or spacing issues to translate into much bigger emergence problems later.

- Always keep a visual on important planting parameters including vacuum pressure, row-unit bounce, operation of row-cleaners, gauge-wheels and closing wheels from the tractor cab during planting. Minor planter issues – which can affect seed placement and emergence – during planting are often the hardest to catch and often go unnoticed until they become a problem. The last place you want to identify a problem is after emergence.

- When using a seed monitor or any other planting technology such active downforce, pay attention to the planting feedback for each row instead of looking at the overall population and other averaged planting metrics. Planting issues are usually not consistent across the whole planter but more specific to individual row units so they are easy to identify and fix when viewing by-row feedback.

May Peanut Pointers Scott Monfort and Scott Tubbs

Planting season is in full swing in many counties through the state. Early to mid-April planted peanut are up and growing. I have not seen any issues except for a few fields planted during the cool and wetter period in mid-April. For the most part, we have had a successful start to the season. The biggest issue right now is the high temperatures and lack of moisture over the last two weeks. This is beginning to slow down planting in the non-irrigated fields as moisture is disappearing rapidly. Please encourage your growers to be cautious about planting in subpar conditions as it will likely lead to poor stands.

I have included below a few things from Scott Tubbs regarding replant decisions:

Determining when to replant a peanut field can involve a number of factors in order to make the best decision depending on the situation.

Here are a few important things to consider:

1. Is the plant stand that did emerge relatively uniform or very spotty? If it is very spotty, it may require a combination of techniques to optimize the eventual production for the field

2. What is the average plant stand that emerged? Conduct stand counts in several places in the field. If plant stands are 2.5 plants per foot or more, then the decision to replant the field has a much lower likelihood of having an economical benefit.

3. How long has it been since the original planting date? If more than 3 weeks have already elapsed, then the chances of gaining any benefit from replanting a field are slim except in very extreme cases when original plant emergence is nearly non-existent (less than 1 plant per foot of row)

4. Evaluating the cause of initial stand failure – correctable errors or circumstances not easily remedied? If the poor plant stand was a result of planting poor quality seed, or into soil that was too cool or too dry, or with an inadequate amount of fungicide seed treatment, etc. – these things can be corrected. But if it was the result of a large family of hogs that live nearby

but haven't been eradicated, or a poorly drained field that pools with any substantial rainfall, or any number of factors that are not resolved, then replanting may not be the best option if the situation could easily repeat itself.

When replanting is needed, the most consistent result from our research trials was that keeping the initial plant stand and replanting a new furrow several inches to the side and parallel to the original row was a better option than a burn down of the initial plant stand and completely starting over.

If plant stands are at least 2.5 plants per foot of row (whether twin row or single row; strip-till or conventional tillage; and the stands are relatively uniform without large gaps in the field), the chances of gaining a return on the investment of replanting a field is very low. When stands are 2.0 plants per foot of row or less, the opportunity for return on the investment of was much greater.

Remember, no two fields are the same so please make sure to evaluate each field separately.

Disease and Nematode Management; After the Furrow is Closed

Bob Kemerait

The time from when the furrow is closed until approximately 30 days after planting is a relatively quiet period in terms of disease management needs for peanut growers. Once the furrow as closed, growers have made significant decisions that impact risk to seedling diseases, Cylindrocladium black rot, tomato spotted wilt disease, and root-knot nematodes. Approximately 30-45 days after planting, growers begin treatment for leaf spot diseases. From 45 to 60 days after planting, growers should continue protecting the crop from leaf spot diseases, begin protecting the crop from white mold, and perhaps add additional treatment for nematodes.

Though a grower's attention is generally diverted to other critical needs and away from fungicides for the first 30 to 35 days after planting, there are still disease issues that deserve consideration. Aspergillus crown rot can severely affect stand, especially when conditions are hot and dry or in the presence of lesser corn stalk borers. There is little that can be done to protect against this disease after planting, other than to pray for rain or to use irrigation to cool the soils. Still, noting the impact of crown rot on this crop of peanuts can help to make improved decisions in the next peanut crop.

When conditions are unusually warm during the first month after planting, *Sclerotium rolfsii*, the fungus that causes white mold, can become active and begin to attack the taproot and lower stem of young peanut plants. Banded applications of the fungicide prothioconazole (Proline) between 3 to 5 weeks after planting followed by irrigation can prove to be very beneficial in slowing the development of earlyseason white mold epidemics.

Though leaf spot treatments typically do not begin until at least 30 days after planting, growers who have applied Thimet for control of thrips and tomato spotted wilt and Velum for nematode control have already begun to fight leaf spot. Both use of Thimet and Velum in-furrow at planting can delay onset of leaf spot disease. Use of Velum allows growers to initiate fungicides for leaf spot management until 40-
45 days after planting. While use of Thimet does delay the development of leaf spot early in the season, UGA Extension recommends that this benefit be considered additive and not strong enough alone to delay the start of a fungicide program.

During the first 30 days following planting, growers are encouraged to carefully consider the fungicide program that they will use throughout the remainder of the season. Peanut Rx (www.peanutrx.org) is a powerful tool to aide in the development of fungicide programs.

Though the first 30 days after planting are relatively quiet with regards to disease management needs, this is a period where a grower can lay a solid foundation for successful management of diseases throughout the remainder of the season.

Early Season Growth and Canopy Development (*John Snider, Gurpreet Virk, Ved Parkash, and Camp Hand*): The previous newsletter covered the different processes occurring during germination and emergence and some important factors affecting stand establishment. Post-emergence, cotton is well-known to have poor seedling vigor compared to other major row crops such as peanuts, corn, and soybean. One of the main reasons for slow early season growth is that cotton has smaller sized seeds with fewer energy reserves compared to the aforementioned crops. Another reason is that true leaves must develop after emergence from an undifferentiated region called the epicotyl, whereas some other crops have their first true leaves present at emergence. Another cause of slow early season shoot growth is higher plant investment in root growth during early development. For example, by the time the cotyledons have unfolded, the tap root may be up to 10 inches deep, and root growth will continue rapidly until flowering. At the onset of flowering, the plant redirects more of its resources to boll production, drastically slowing or even halting root growth altogether. Similar to germination and emergence, early season growth temperatures also impact root growth and early season canopy development. Therefore, it is important to minimize stress in the early season to maximize root growth and promote vigorous canopy development. Figure 1 (A) shows the effect of two different day night temperature regimes- optimal (86/68 °F) and suboptimal (68/59 °F), on root and shoot growth in cotton. Sub-optimal growth conditions can result in reduced root growth along with substantial inhibition of leaf area development. Figure 1 (B) below shows the relationship between average leaf area per plant and total root length per plant at two weeks after planting. Healthy roots are positively associated with healthy shoots.

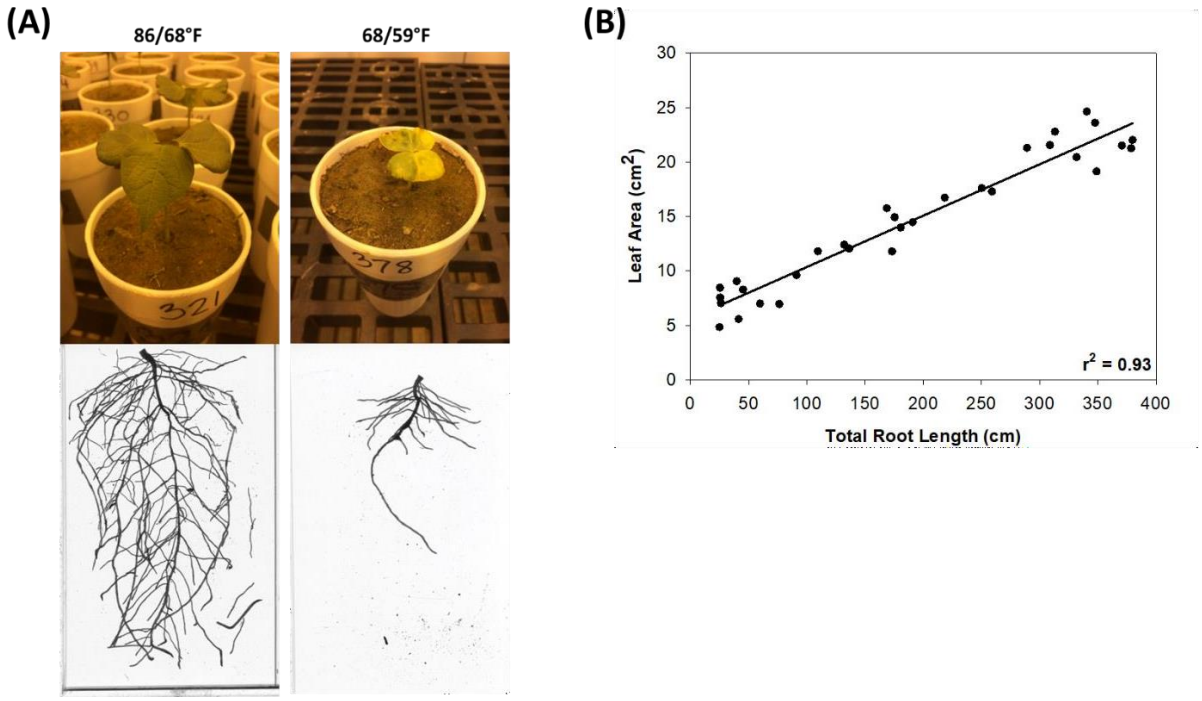

Figure 1. Effect of growth temperature on root and shoot growth in cotton seedlings. (A) provides images showing two-week-old roots and shoots under optimal (86/68 °F) or suboptimal (68/59 °F) temperature conditions, and (B) shows the relationship between average leaf area per plant and total root length per plant at two weeks after planting.

Canopy Development: Rapid true leaf differentiation is an important factor affecting growth and vigor in cotton. The crop requires approximately 50 DD60s for emergence and another 50 to produce its first true leaf and each mainstem leaf thereafter. The cotton plant begins producing branches at approximately the fifth node above the cotyledons, and there are two types of branches: monopodial (vegetative branch) and sympodial (reproductive branch). At approximately the sixth mainstem node (plus or minus one), the plant will produce its first fruiting branch (usually after having produced one or more vegetative branches), and the first square will be visible on the first fruiting branch at approximately 35 days after planting, but even the timing of squaring depends on the initial rate of node development, which (as we've noted previously) is temperature dependent. Each fruiting branch will add additional fruiting sites at positions further away from the mainstem and new fruiting branches will continue to be produced at newly-generated nodes above the first fruiting branch. Furthermore, each fruiting site on a fruiting branch will have a subtending leaf associated with it.

Due to its indeterminate growth habit, the development of leaf area and fruiting sites in cotton are inextricably linked with sympodial leaves accounting for a larger percentage of total leaf area as the season progresses. Leaf area development of the cotton crop follows a sigmoidal growth response, with a slow increase in leaf area during first 6 to 7 weeks after planting (lag phase) and rapid leaf area development during the early fruiting stage (exponential growth phase), eventually resulting in canopy closure at

approximately 75 days after planting if development proceeds normally. Vigorous vegetative growth prior to flowering will increase the number of fruiting sites available to set bolls, and because each fruiting site has a leaf associated with it, the rate of new fruiting branch development can partially determine the timing of canopy closure which is important for maximizing light interception for whole-canopy photosynthesis. The number of mainstem nodes above a first position white flower (NAWF) at first flower can be indicative of stress or excessive vegetative growth requiring application of plant growth regulators (PGRs). Values ranging from 9 to 12 squaring nodes above a first position white flower are indicative of ideal to vigorous vegetative growth. While fewer squaring nodes could potentially be indicative of stress (water, nutrients, etc.), yield is a function of the number of fruiting sites produced and the rate of fruit retention, so acceptable yields can also be achieved with fewer nodes, provided fruit retention is high. Thus, during the pre-flowering phase of canopy development it is important to maximize canopy growth by 1) obtaining acceptable stands (see previous or current newsletter articles dedicated to planting considerations and control of seedling diseases), 2) minimizing abiotic stresses such as water deficit or nutrient stress (see newsletter articles addressing early season fertility and irrigation), and controlling weed and insect pests that are most common during this phase of development. Once flowering begins, crop monitoring and growth management decisions become critical to ensuring an acceptable balance between vegetative and reproductive growth.

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Herbicides and Dusting in Cotton can be a Mighty Challenge! (*Stanley Culpepper*): *It seems most years, we are extremely dry at some point during planting which challenges our herbicide decisions. Below is an article provided last year that I am resharing without changes as our research continues to support this discussion.*

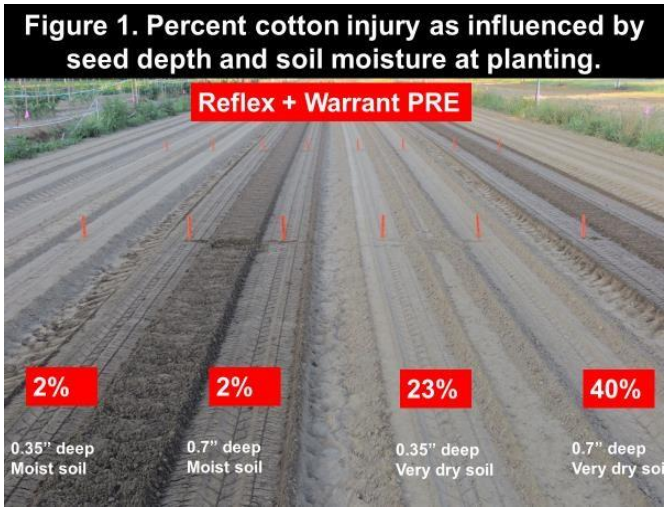


Figure 1. Percent cotton injury as influenced by seed depth and soil moisture at planting.

The most effective approach to minimize cotton injury from preemergence (PRE) herbicides is to place the cotton seed in moist soil where it can imbibe (absorb) clean water free of herbicides (Figure 1). Next, we need our cotton roots to "out run" the herbicide as the herbicide is moving down into the soil with rainfall or

irrigation. When placing cotton seed in dry soil and then applying a PRE herbicide, it is likely impossible for water to get to the seed without being contaminated with the herbicide causing a much greater potential for injury.

Thus, dusting cotton in and applying PRE herbicides is far from ideal in regards to avoiding cotton injury. The next thought from every grower is to hold off on the herbicides until the cotton emerges. This thought is extremely dangerous when considering the monumental challenges our family farms face with herbicide resistance in Palmer amaranth. However, it may be the only option in some environments. If one does follow the path of not using PRE herbicides and planting cotton into dry soils, there are several key points to consider.

First, there needs to be no weeds emerged (especially Palmer) when the cotton seed is placed in dry soil. If there is, get the backhoe out to dig the Palmer up later in the year. In theory, if the field is weed-free when dusting cotton in the soil then no additional weeds should emerge until it rains.

Second, the first postemergence herbicide application should occur as soon as the cotton is fully emerged; the treatment must kill emerged weeds and must include residual herbicides. The level of selection pressure placed on the postemergence herbicide in this situation is very high and not sustainable in time.

Third, a second postemergence herbicide application should be made 12 to 15 days later and again include a residual product, this timing assumes you were timely with the first postemergence application. If you were not timely, the interval needs to be shortened following label recommendations.

And finally, the value of the layby application in fields without a PRE increases astronomically in regards to herbicide sustainability. Although it is time consuming, it is still better than pulling pigweed!

In-field Planter Considerations (*Simer Virk and Wes Porter*): As cotton planting ramps up across the state, it is important to re-emphasize the value of proper planter setup and operation to attain a timely and uniform stand establishment. The previous newsletter article on planter preparation covered key points on planter inspection and maintenance that could be performed before heading out to the field. While it provided a good opportunity to prepare for planting, an important aspect of ensuring good planter performance is regular in-field checks and adjustments to different planter components as needed for the prevalent field conditions. Planter issues are common during planting but can be mostly avoided by paying attention to the planter operation and catching issues before or as they occur in the field. Here are few additional considerations to keep in mind while planting cotton to minimize or prevent any potential planter related issues in the field:

- First and foremost, if you haven't started planting cotton yet, there is still time to **perform a thorough planter inspection** using the checklist available here Planter Checklist (UGA). Remember to take care of any major issues or parts that needs to be replaced before getting out in the field and plant.

Neglecting minor issues now can result in greater downtime and/or major problems later in the season.

- If you are already out in the field planting cotton, make sure to **get out and dig behind the planter** to ensure that the desired seeding rate (seeds per foot), seed depth, and seed-to-soil contact are attained across every row. Seeding rate and/or depth variability is very common among the row-units on the same planter so checking each row is important to have a uniform stand across the field.

- Variability in planting conditions within the same field or among the fields is again common and will require **adjustment to planter settings based on the existing conditions**, with special consideration to variability in soil texture, moisture, and/or crop residue. A change in cotton variety, specifically seed size, would also require adjustments to vacuum and seed meter settings to ensure good seed singulation with minimal skips or doubles.

- When you notice any seed singulation, spacing, or depth issues in the field while planting, make sure to **properly identify and fix planter issues before continuing to plant** across the whole field with the same planter. It doesn't take long for small seed metering or spacing issues to translate into much bigger emergence problems later.

- Always keep a **consistent visual on important planting parameters** including vacuum pressure, row-unit bounce, operation of row-cleaners, gauge-wheels and closing wheels from the tractor cab during planting. Minor planter issues – which can affect seed placement and emergence – during planting are often the hardest to catch and often go unnoticed until they become a problem. The last place you want to identify a problem is after emergence.

- When using a seed monitor or any other advanced planting technology such electric seed meter drives or active downforce, **pay attention to the planting feedback for each row** instead of looking at the overall population and other averaged planting metrics. Planting issues are usually not consistent across the whole planter but more specific to individual row units so they are easy to identify and fix when viewing by-row feedback.

Early Season Irrigation Requirements for Cotton Production (*Wes Porter, David Hall, and Jason Mallard*): While every year brings something different we must keep an eye on the weather, soil moisture

conditions, and future forecast and make necessary adjustments. While other areas of the country are struggling to plant due to excessive rainfall and moisture, we have not had a significant rainfall in southern Georgia since mid-April (around Easter). While, it can change, and you cannot put too much faith in a 10+

day forecast, currently the long-term forecast is for us to remain dry with less than a 30% chance of rain until mid-May. Temperatures are expected to reach the 90's during the first week of May. Knowing this, we need to plan for planting into dry conditions and should plan to apply a small amount of irrigation prior to planting if possible in irrigated fields.

Most of the cotton across Georgia should be planted during early- to mid- May. Similar to peanut, cotton does not require very much irrigation during the first month or so of growth and in some cases if adequate rainfall is received cotton can go up to squaring and even bloom without additional irrigation applications as exhibited by the red box and water use curve below in Figure 1. UGA Extension has developed an Irrigation Reference Guide for Corn, Cotton, Peanuts, and Soybeans | UGA Cooperative Extension, a quick and easy irrigation scheduling guide that is laminated and contains the four major row crops grown in Georgia. However, if it gets hot and dry again like it did during late May and early June of 2021 you may need to apply a few small irrigation applications either weekly or potentially a few times per week. The red box below represents cotton water requirements the first five weeks after planting. Keep a track of rainfall and temperature, your irrigation efficiency (typically around 65-70% for high pressure systems and 80-90% for low pressure systems), and make irrigation applications accordingly. Keep in mind that the water requirement below is irrigation plus rainfall, and the weekly water requirement recommendation was developed based on a historical average evapotranspiration. Thus, your actual water/irrigation requirement may vary slightly based on weather conditions and rainfall during the growing season. As stated above, this year is shaping up to be hot and dry, so keep that in mind during the early part of the cotton season. For a more in-depth irrigation recommendation it is suggested that you look into implementing either a computer scheduling model either online or via a Smartphone App, or soil moisture sensors.

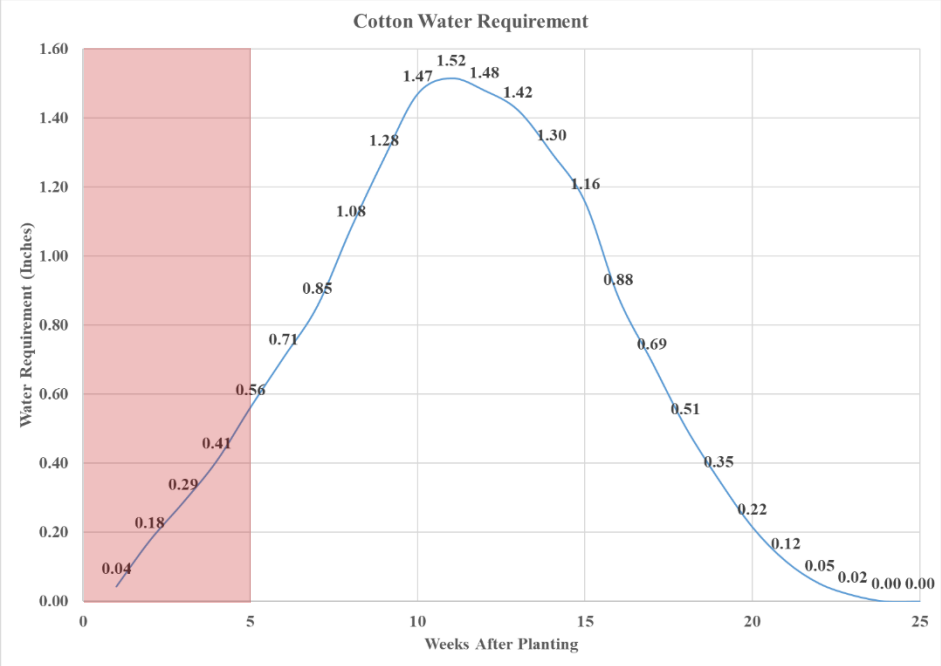


Figure 1. Seasonal Cotton Water Requirement.

For cotton farmers who utilize tools such as soil moisture sensors in their irrigation scheduling, there are a few quick reminders to keep in mind. We tend to visualize the above ground plant biomass and forget what is growing below the surface. We can sometimes be guilty of placing a sensor in the row of the cotton let it start logging data, making decisions from that data and assuming everything is good to go. Unfortunately, we need to ensure we know what is going on in the field before we blindly start following the sensor. Based on when you planted certain fields cotton may be spread in age by several weeks while some is still in the bag, this is a good time to think about "weighting sensor depths" according to rooting depths.

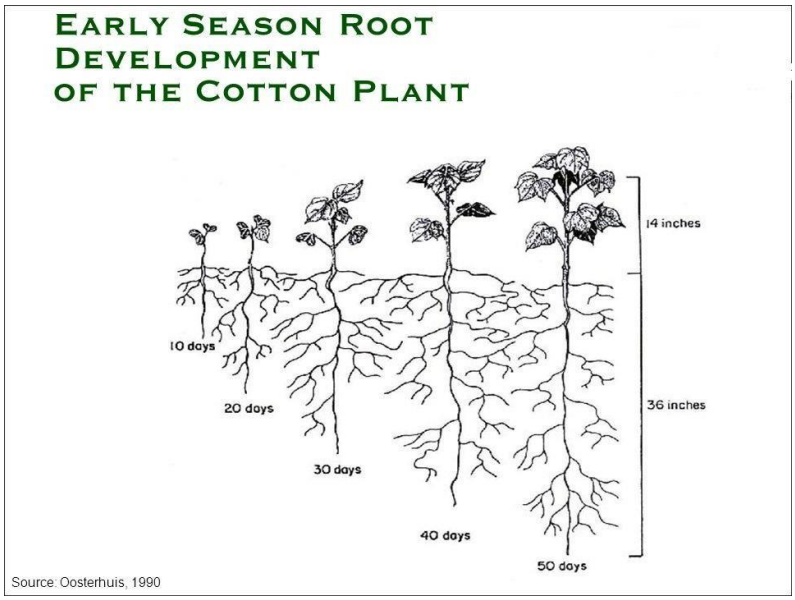


Figure 2. Visual development of root development as the cotton plant progresses in age.

One thing is certain in farming, one year from the next is never the same. Weather and available moisture are constant variables. Adding rooting depths and plant needs in the equation creates the need for a formula for weighting sensor depths in your irrigation scheduling decision, an important factor throughout the growing season. Most sensors come with two or three depths that measure available moisture. Early in the season, we generally have cool nights and afternoon temps are "normally" around the low to mid 80s. The evaporation rate is low in comparison to the dry hot summer days and nights. The root profile for the first month develops fairly shallow in the soil. These combinations of events reflect the plant water needs, as shown in our UGA Checkbook method. Moisture sensors generally default to an average of using sensors available on the probe for a trigger decision. This can provide false water needs for young cotton plants. For example, if a 16" depth is showing a dry reading and the 8" sensor is reading adequate moisture, the average will possibly trigger an irrigation event. If a cotton plant has just fully emerged and your root profile is in the 8"-10" range in this scenario, you actually do not need to irrigate. Now, considering the rooting depth let's weight the 8" sensor by an 80% value and the 16" sensor by 20%. Now since the average is weighted higher on the shallow sensor it can be seen that irrigation may not be needed. You should not begin to fully use deeper sensors for irrigation scheduling decisions until you see what water use is occurring at those depths. Weighting moisture sensors can be very beneficial but can be harmful if

adjustments are not made during the growing season. If you are interested in weighting sensors, below are UGA Extension suggestions to consider for weighting sensors during the growing season:

D1 = shallow sensor D2 = middle sensor D3 = deepest sensor

- Early-Season: 80% * D1, 20% * D2, 0% * D3
- Early-Mid Season: 60% * D1, 30% * D2, 10% * D3
- Mid-Season: 50% * D1, 25% * D2, 25% * D3
- Late-Season: 40% * D1, 30% * D2, 30% * D3

Soil moisture sensors provide the most accurate means of monitoring available soil moisture. Monitoring the root zone and available moisture present is a great tool in irrigation scheduling. If you have further questions about irrigation scheduling on your cotton reach out to your local UGA County Extension Agent.

General Thoughts and Last-Minute Decisions (*Camp Hand*): As we enter what is supposed to be full swing for cotton planting, I have a few thoughts and considerations to take into account regarding the situation we are currently in.

The first thought I have is that I am praying for a rain for our growers across the state. We have gotten pretty dry in a hurry as a whole, and many conversations that I am currently having with folks go something like this: "How's things your way?" "Just hoping for some rain!" Luckily, over the past few days pop-up showers have given some folks what they need to start or continue planting. However, others have not been quite as fortunate.

We need to keep in mind that we are still very early in our window for planting cotton and that now is not the time to press the panic button just yet. Although I would much rather spread out our planting dates, thus spreading out our risk, if we get backed into a corner and have to plant our crop in a hurry (particular for dryland situations) we can make it work. It wouldn't be the first time, and won't be the last.

Other conversations I have been having are around some supply issues with seed. For one reason or another, growers might not be able to get the variety they wanted. It's important to know that along with the general supply chain snags we are facing with everything else under the sun, 2021 was generally a bad seed production year for the western part of the cotton belt which is part of what we are dealing with now.
Although the variety you want may not be available, there are resources available to help you find a replacement. Throughout the meeting season this past winter, many of you heard me talk about the on-farm variety trials and those results. Just as a reminder, those results can be found here. Historically, these varieties have represented roughly 75% of the planted acres in our state. With that being said, your preferred variety might be on this list and might be affected by some of these supply issues mentioned above.

Another extremely valuable resource to use if you are trying to make a decision on a variety that you aren't familiar with and isn't included in the on-farm variety trial is the Statewide Variety Trial, commonly referred to as the OVTs. These trials evaluate far more varieties than I ever could on a grower's farm, and provides a relative evaluation of variety performance in six different environments. The OVT results can be found here.

If you have last second questions about varieties, or anything else for that matter, don't hesitate to reach out to your local UGA County Extension Agent. They, along with myself and the rest of the cotton team, are here to help.

Early Season Disease and Nematode Update (*Bob Kemerait*): The peak of cotton planting is upon us and cotton growers are reminded that careful decisions made now are critical to protecting the crop and yield potential for the rest of the season. Nematodes, especially root-knot, reniform, and sting, can cause serious damage to a cotton crop. The best, and sometimes the only, management options are spent once the furrow is closed. Where root-knot and/or reniform nematodes are an issue, growers are reminded that they can plant nematode-resistant varieties. Planting resistant varieties will protect the plants from damage without the use of nematicides and will also help to reduce growth of nematode populations that will affect the cotton crop next season.

Growers who choose not to plant nematode-resistant varieties, for whatever reason, are encouraged to use nematicides judiciously. No nematicide can provide season-long protection to the cotton crop and certainly will not any effect on nematode populations for next season. (Only planting resistant varieties or rotating away from cotton to a non-host crop will reduce populations for next season.) However, use of an appropriate nematicide at the appropriate rate will allow a cotton plant to get a "head start" and begin to develop a robust root system before the inevitable damage occurs. Protecting that young root system for 4 to 6 weeks early in the season can have lasting benefit on yield and profit.

Below are several key points to getting the most out your investment in use of a nematicide:

1. Know the type of nematodes and the size of the population in your fields. This is best accomplished with samples taken after harvest in the previous season. Some nematodes, such as the ectoparasitic sting nematode, may be an easier target because they stay outside the root and are more exposed to the nematicide. Knowing the population size helps to determine which nematicide, fumigant (Telone II), granular (AgLogic 15G), liquid (Velum), or seed treatment (e.g. AVICTA, Copeo, BIOst, or Trunemco) is likely to best provide the needed protection to the cotton crop.

2. Once the furrow is closed, the only additional option for nematode management available to growers in a foliar application of oxamyl (Vydate-CLV or ReTurn XL) at about the 5th true leaf stage to possibly extend the protective window of nematicides applied at planting.

3. New products are often being made available to cotton growers for management of nematodes. Averland FC nematicide (active ingredient abamectin) is such a product for 2022. As there is very little data available for the efficacy of Averland at this time, growers should use caution before

whole-scale replacement of products that have proven effective in the past. UGA Extension will have additional data on Averland FC after this season.

4. Nematode problems for corn growers seem to be especially severe in 2022. I suspect that the combination of a warmer "La Niña" winter coupled with corn-behind-corn has led to such problems. Cotton growers should also anticipate increased problems with nematodes in 2022 for similar reasons.

5. Getting the most out of a nematicide requires using the right product at the right rate. It also requires consideration for environmental conditions as well. For example, fumigation with Telone II is affected by soils that are too wet or too dry at time of application and by significant rain events after fumigation. Likewise, granular products such as AgLogic 15G require some soil moisture to be activated and also taken up into the roots.

Though the 2022 cotton season has only just begun, protecting a cotton crop against nematode now will have lasting benefit throughout the season. Growers are encouraged to make the best management decisions now.

When to Spray Thrips (*Phillip Roberts*): Thrips are the most consistent and predictable insect pest of cotton and will infest near 100 percent of cotton planted each year. Thrips are the only insect pest that UGA recommends use of a preventive insecticide as preventive systemic insecticides used at planting provide a consistent yield response to this predictable pest. Decisions to treat other pest should be based on scouting and use of thresholds. At-plant systemic insecticides include AgLogic (aldicarb) applied as a granule infurrow, Admire Pro (imidacloprid) and Orthene (acephate) applied as a liquid infurrow, and neonicotinoid seed treatments (primarily imidacloprid). Acephate can also be used as a seed treatment. In general, aldicarb and the liquid applications of imidacloprid and acephate provide greater and more residual control compared with seed treatments. If thrips populations are high, potentially any of the above-mentioned treatments may need a supplemental foliar spray. However, we would expect seed treatments to require foliar sprays more often than aldicarb or infurrow applications of imidacloprid or acephate.

All fields should be scouted for thrips and thrips injury. Seedlings are most susceptible to thrips during early growth stages (i.e. 1-2 leaf cotton is more susceptible to thrips than 3-4 leaf cotton). Economic damage rarely occurs once seedlings reach the 4-leaf stage and are growing rapidly. Growing rapidly is an important point. Thrips injury will be greater on slow growing seedlings compared to rapidly growing seedlings during any growth stage. Thrips are feeding on unfurled leaves in the terminal. Let's consider a slow growing seedling which unfurls a new true leaf in 6 days and a rapidly growing seedling which unfurls a new true leaf in 3 days. If the same number of thrips were feeding on each plant, injury would be much more severe on the slow growing seedling as thrips feed on that leaf for 6 days compared to only feeding on the new leaf in the rapidly growing seedling for 3 days. To sample thrips simply pull an individual plant and slap against a surface such as a note pad or cigar box to dislodge thrips. Count adult and immature

thrips on multiple plants in a field. Adult thrips are winged and are most often brown or almost black (these are tobacco thrips). Immature thrips are wingless and cream colored. The threshold for thrips is 2-3 thrips per plant with immatures present. The presence of immatures indicates the at plant insecticide is no longer providing control, thrips eggs laid on the plant, eggs hatched, and thrips are developing. Recommended foliar insecticides for thrips control include Orthene, Bidrin, and dimethoate; pyrethroids will NOT control thrips. It is important that you begin scouting soon after emergence. Remember that early growth stages are much more sensitive to thrips feeding compared with later growth stages. At the latest, you need to be scouting and prepared to react as seedlings begin unfurling the first true leaf. I have seen many times that growers will wait to apply a thrips spray with a POST herbicide. If you have a thrips problem at the 1-leaf stage, it needs to be addressed in a timely manner.

The figures below illustrate within season risk for thrips in Tifton, Waynesboro, and Madison, Georgia. You can generate thrips risk info for your location using the **Thrips Infestation Predictor for Cotton** at the following web site: https://products.climate.ncsu.edu/ag/cottontip/. Thrips risk for most of southwest Georgia is similar for Tifton in that thrips risk is highest on April plantings and begins to decline in May. Note the risk for Waynesboro is greatest during late April and then declines in May. Interestingly, thrips risk in Madison (North Georgia) is greatest during the first three weeks of May. This predictive model does not consider tillage, thrips infestations are significantly lower in reduced tillage systems where residue is on the soil surface. The more residue, the greater the reduction in thrips.

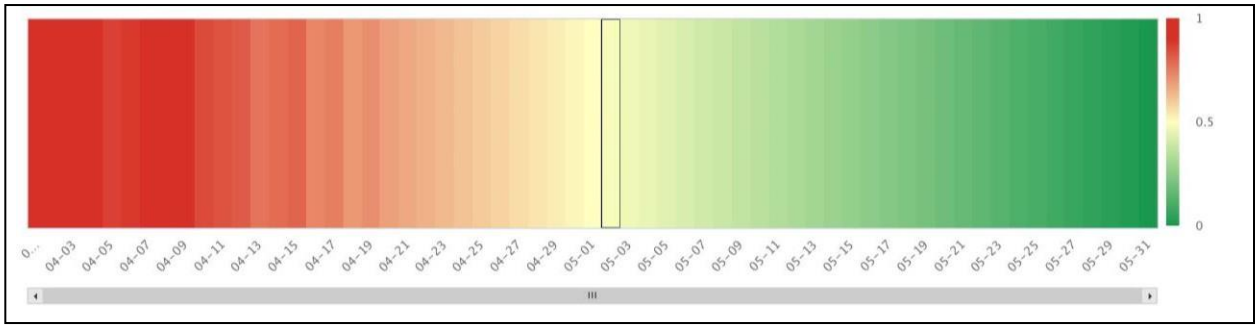


Figure 1. Within-Season Risk for 2022, Tifton, GA

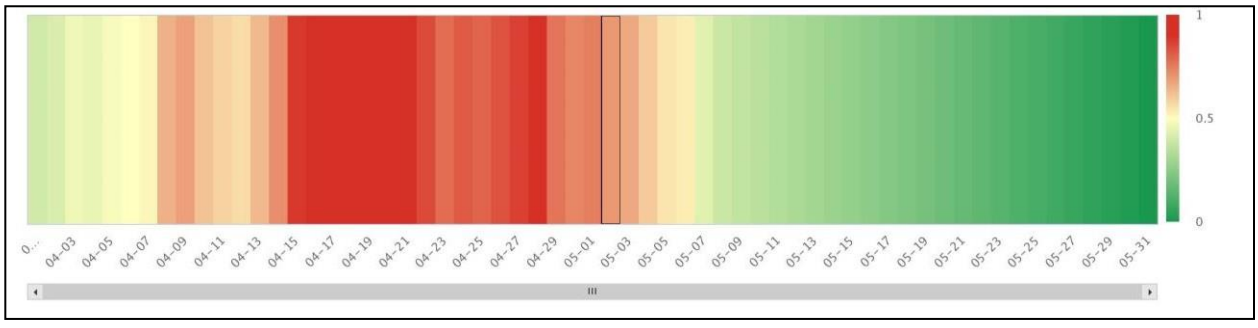


Figure 2. Within-Season Risk for 2022, Waynesboro, GA

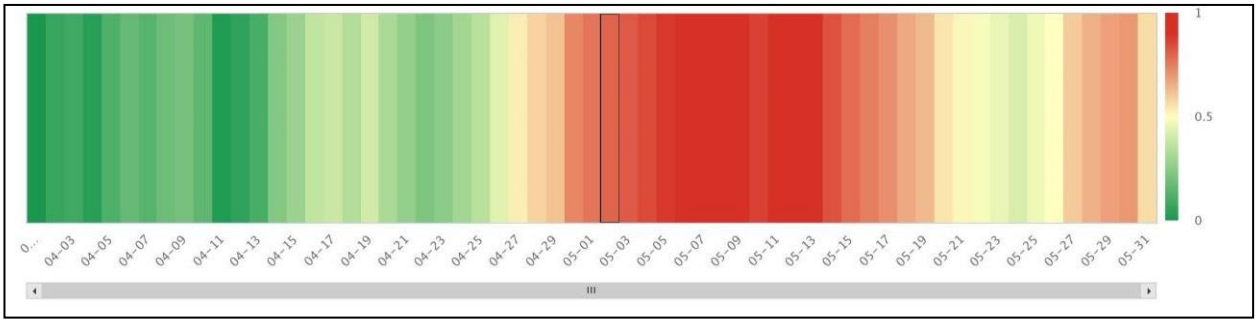
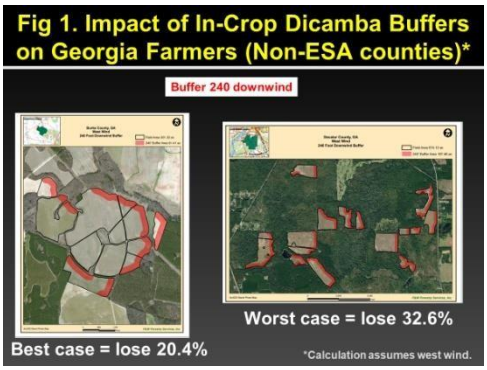
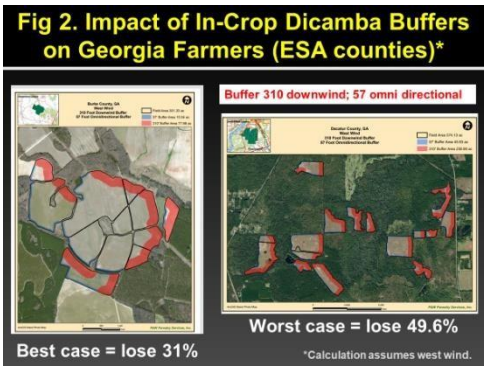


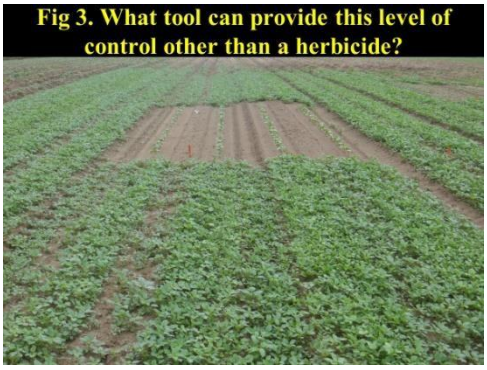
Figure 3. Within-Season Risk for 2022, Madison, GA

Your Weed Management Toolbox is in Trouble; Are You Paying Attention? (*Stanley Culpepper*): The ability to control weeds on our family farms in the future is frightening, at least for those paying attention. If you are one of those reading popular press articles or listening to scientists, then you know weed resistance to herbicides is extremely alarming, removing tools from the toolbox rapidly. Palmer amaranth with resistance to glyphosate, ALS-herbicides (Staple,etc.), atrazine, and the PPO herbicides (Reflex, Valor) has been documented in our state; keep in mind resistance issues in ryegrass are an even greater problem for some! Although the loss of tools to resistance is justifiability alarming and a very serious situation, unfortunately, I am not sure this alone is our greatest challenge.

In fact, I would suggest it is not! The current regulatory atmosphere is equally if not more of a concern and unlike resistance, we have little influence on the decisions being made. In-field buffers placed on dicamba products labeled for use in cotton prohibit their legal application on 20 to 50% of our fields (Figs 1 and 2), and don't forget the court system will likely determine our ability to use these tools in any practical manner over the next 12 months. Enlist Duo is no longer registered in 11 Georgia counties because of the Endangered Species Act (ESA); MSMA is facing serious use limitations due to rotational restrictions; and just last week, the U.S. EPA released details informing us diuron may be removed from our weed management programs (cotton, veggies, and fruit). Diuron is, as you already know, one of the most important herbicides available on a cotton farm today providing excellent weed control, resistance management, and economic sustainability. Make yourself more aware of this situation and be prepared to act







https://www.epa.gov/pesticides/epa-seeks-public-comment-measures-address-human-health-and-ecological-risks-posed-diuron. Unfortunately, that is not all, glyphosate and atrazine face serious threats especially from the Endangered Species Act, as does most every other pesticide.

Research evaluating alternatives to herbicides is critically important and heavily investigated by weed scientists. Cover crops, tillage, flaming, mowing, mulching, solarization, see and spray technologies, weed electrocution, weed-seed harvesters, and even using radiated pollen to manage weeds all have potential. However, each of these approaches is likely only consistently effective (on large scale) when used in conjunction with herbicides, especially for Georgia farmers as our weed population densities and continual emergence makes our weedy competitors fierce adversaries (Fig 3).

So, what about protecting and hopefully one day expanding our toolbox? Mitigating resistance is the first step, and each farm is in control of this step by making the decision to implement sound diversified management programs in a timely manner. The greater challenge is regulatory. Agriculture must unite to address the loss in the practical use of herbicides (and other pesticides) through cooperative efforts, developing methods to assist regulators by generating sound science to help them make better decisions at a local level. Our farmers and ranchers must also lead the mission of using pesticides wisely and only in ways that are safe for applicators, the environment, wildlife, neighbors, and our consumers!

Georgia Grain News 5-6-22

Soybean

Early System Soybeans are looking good. 16 days old and already forming nitrogen fixing nodules. We can tell the beneficial nodules from nematodes because they are stuck to the side of the root whereas root knot nematodes will be a swelling of the root.

Good way to check the plant population is the 1000th of acre method like in corn. These are 20 inch rows so I measured 26 feet 2 inches and got on average from many counts, 76.6 plants. in that distance. So his plant pop is 76,600 plants per acre which is on the low side for early system beans but should be ok since they are evenly spaced.

Needs 0.65 inch of water a week according to our water guide. https://secure.caes.uga.edu/extension/publications/files/pdf/C%201189_5.PDF And

we need to be watching for pests like 3 Cornered alfalfa hoppers and lesser cornstalk borers.

Corn Herbicide Drift

This week we can see a little herbicide drift, small white round spots, in almost all corn fields. Likely mostly Paraquat drift. Lots being sprayed now for burndown.

I asked Dr. Prostko why it's so common for that particular herbicide? He says, "Corn is super sensitive to paraquat. Growers only use 3 oz/a of Valor vs 32-48 oz/a of paraquat. So more floating around. All pesticides move when windy just don't notice cause rates are low."

Also, I went into a corn field this week and I at first thought they had burned the V5 corn with fertilizer, you could tell it was something that happened at a point in time, as the new growth was good. but looking closely it looked more like herbicide burn. I questioned the spray guy and yes they didn't clean out the Valor herbicide very well from spraying peanut ground. This will likely cause some yield loss but would be worse if the corn were older. Dr. Prostko has some great research slides about yield loss, more photos and info concerning this common problem, so check with him if you would like to learn more.

Georgia Grain News 5-13-2

GDUs

It is useful to look at Growing Degree Units(GDU) or Heat units. Heat units are calculated based on the day's high and low temperatures. With a base (in Corn) of 50 and a high limit of 86. So yesterday , 5-12-22, 87°F was the high and 57°F was the low.

So use the equation found in the UGA Corn Production Guide,

$$GDU = \frac{T_{max} + T_{min}}{2} - T_{base}$$

, 86(high limit, can't put in 87) + 57 = 143 divided by 2 = 71.5 - 50= **21.5 GDUs**

So we accumulated 21.5 heat units yesterday. Corn generally tassels at about 1200 GDUs. We know corn is usually mature at 2800 Heat units (depending on the hybrid and other factors, but that's close). So under cooler growing conditions we will hit these milestones later.

So a grower has an actual field I was in this week, and took the below photo, planted on March 1. It has accumulated 1179 GDU so far as you can see in the chart below and has the tassel in the stalk at my face level and an ear I cut out of stalk that is 1.5 inches long now. It survived the March 13,14 freezes and the grower went to the field and said "I think it's dead" on March 15. And it did look dead, the top growth was dead, but the growing point survived and it looks pretty good now, he lost a few plants and nematodes affected sandier parts of the field. It's 73 days old now so over half way to harvest time!

Since the tassel in the stalk is my face high then it will pop out the tassel next week (VT stage), right in line with predicted tassel about 1200 GDUs.

We can go to the UGA Weather station site to figure the Growing Degree Units if we have the planting date.

Pull up www.weather.uga.edu and go to "Calculator", "Degree day", choose your location, set it to 50 minimum (Base temperature) and 86 maximum (Disregard temperatures above that), and put in planting date.

Notice it will automatically give you the last 3 years as well. Below is my screenshot using Donalsonville, Ga Station.

This shows we've had about average heat unit accumulation in 2022, looking at 4 years data, for this timeframe.

Degree Day Calculator

Choose a station : Donalsonville

From: March 1 2022

To: May 12 2022

Base Temperature: 50

Disregard Temperatures Above: 86

○ US ○ Metric

Calculate

From March-1	To May-12	Total
2022	2022	1179
2021	2021	1118
2020	2020	1322
2019	2019	1149
50 <= Temp <= 86 °F		

Monday Musings (May 9) - Prostko

Here are a couple of things to think about based upon recent phone calls/texts and observations from some of my current research projects.

1) If growers observe unexpected/unusual leaf injury/burn after a corn herbicide is applied, it is most likely caused by Valor sprayer contamination. See below for what this injury looks like and how it could potentially influence corn yields.

2) When evaluating the potential effects of Liberty on pigweed control, growers should wait at least 7 days before making a final decision on whether or not it worked. FYI, the colder temperatures this week (< 60 F) will slow down the activity of Liberty for sure.

3) Peanut growers will be making the decision to spray or not spray an early-postemergence (*cracking*) herbicide. If the peanut field was clean at planting and a strong residual herbicide program was used (activated with moisture), it is very likely that a cracking spray will not be needed. See below (i.e. no weeds in my standard PRE program at 12 DAP):

4) My general recommendations for early-postemergence (*cracking*) treatments in peanut are as follows:

a) Either paraquat (2 lb/gal) @ 12 oz/A or paraquat (3 lb/gal) @ 8 oz/A + either Storm @ 16 oz/A or Basagran @ 8 oz/A + one Group 15 herbicide [either Anthem Flex @ 3 oz/A or Dual Magnum @ 16 oz/A or Outlook @ 12.8 oz/A or Warrant @ 48 oz/A or Zidua @ 2.5 oz/A (liquid)].
Generally, I have no preference between the Group 15's when my suggested PRE/EPOST/POST peanut weed control programs are followed.

b) Add NIS @ 0.25 v/v when using Anthem Flex, Warrant, or Zidua.

c) If need be, growers can make their own Storm (*I call it Georgia Storm*), by tank-mixing Ultra Blazer (16 oz/A) + Basagran (8 oz/A). This is a slightly different rate than what is applied with current commercial Storm formulation @ 16 oz/A (equivalent to Ultra Blazer @ 11 oz/A + Basagran @ 11 oz/A).

d) Use at least 15 GPA and pressure/nozzle configurations to produce medium to coarse droplets (236-403 microns). Medium/coarse droplets are yellow and green on this chart.

e) Excessive dust caused by dry weather and tractors driven at Warp Speed 10 will reduce the effectiveness of paraquat.

Monday Musings (May 16) - Prostko

A few things from the field earlier today:

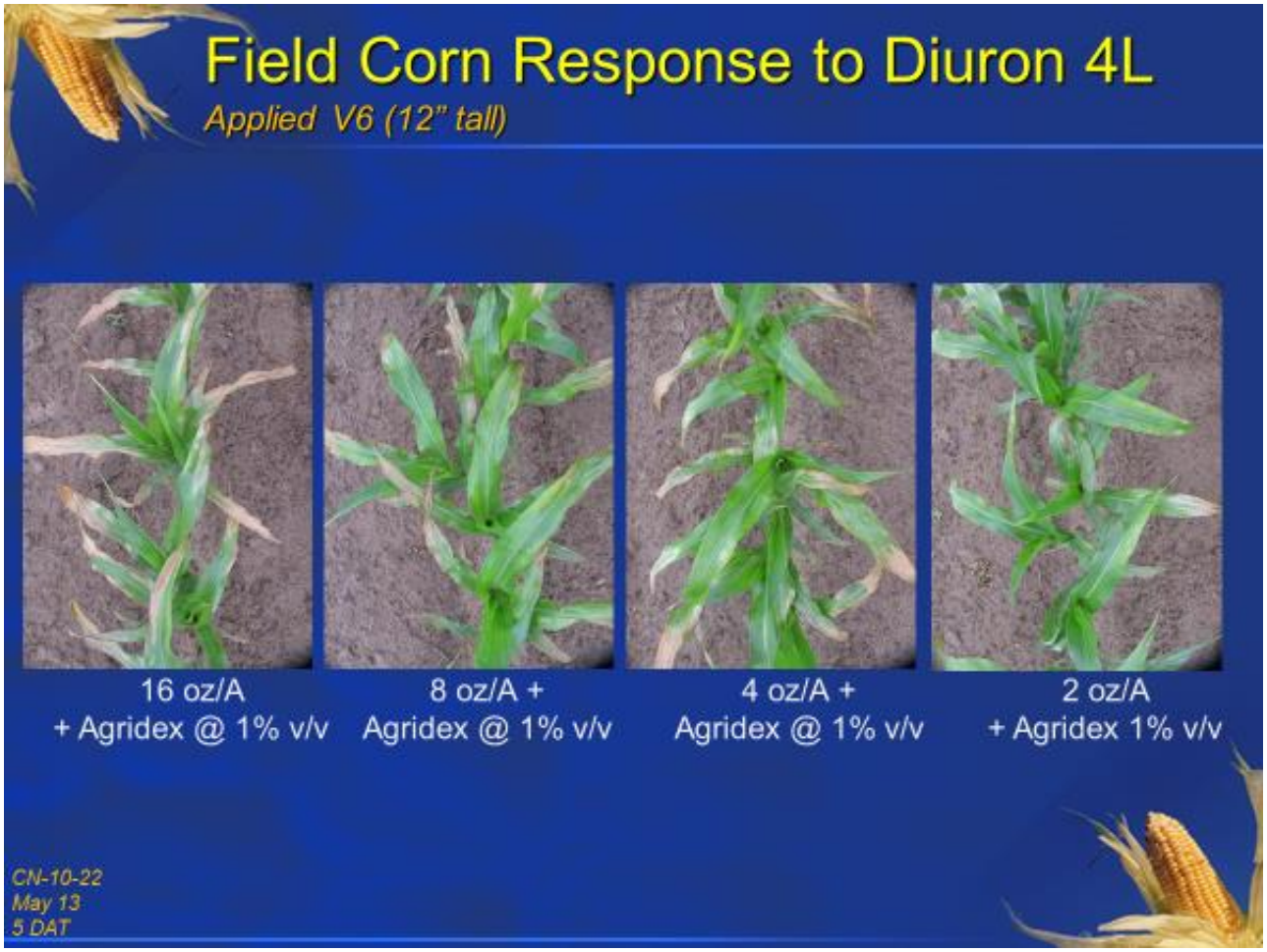
1) When you get up early, you get to see some cool stuff!

Irrigating under the "blood" moon from last night (6:31 am)

Rainbows for breakfast! A great omen for the rest of the week (*hopefully*).

2) Check out the awesome power of a PRE herbicide (activated with moisture). These are from my grain sorghum plots. It's 2 weeks after planting and in plots that are not weedy, there were PRE applications of various residual herbicides including one of the following: Aatrex (atrazine); Moccasin II Plus (*S*-metolachlor); Parallel (metolachlor); Everprex (*S*-metolachlor); Parallel Plus (atrazine + *S*-metolachlor); or Cinch ATZ (atrazine + *S*-metolachlor). EPOST treatments were applied today. Not sure why growers, especially those with irrigation, are often reluctant to use a PRE??????????

3) Here's what diuron injury looks like on field corn. It took 3 days before the symptoms started to show up. I will let you know what happens to final yield.



4) I am seeing some good weed control results in my soybean plots with Liberty + Enlist One (applied 19 DAP, V1 soybeans, 3-6" Palmer amaranth).

5) Peanut growers who use Anthem Flex (carfentrazone + pyroxasulfone) in their paraquat "cracking" applications should expect to see more leaf injury (cosmetic) than when Dual Magnum, Outlook, Warrant, or Zidua are used. Based upon previous UGA research, this injury should not reduce yields.

Gramoxone/Anthem Flex - 2022

NTC

Gramoxone 2SL @ 12 oz/A
Storm 4SL @ 16 oz/A
Anthem Flex 4SE @ 3 oz/A
Induce @ 0.25% v/v

PE-11-22
May 13
3 DAT

Insect and Nutritional Update on Newly Planted Trees

May 13, 2022 | Written by Andrew Sawyer

We're seeing different issues on young and newly planted trees we want to share. These issues relate to insect damage and nutritional problems. It is common to see many of these issues in newly planted trees.

Insect Damage

For young trees, Ambrosia beetle and pecan budmoth are our most consistent insect pests. The Ambrosia season was typical. It appears our second flight has passed, and those beetles will become less active now. However, pecan budmoth is active and damage is showing where budbreak sprays were not made. Here is a picture to demonstrate:

Trees with good leaf growth were treated for budmoth the first week of April. All other trees received first spray the first week of May.

The trees with good leaf growth were sprayed with a budmoth product at budbreak, and the other trees were not. The trees without good leaf growth were sprayed a month after budbreak. This is the

importance of spray timing for pecan budmoth. Trees with heavy pressure from budmoth appear to not budbreak or have died. In this situation, a knockdown insecticide – to kill the active caterpillars – should be sprayed followed by a residual application.

Another issue (below) is the major suckering of these 1st and 2nd year trees. This was obvious once the tree guards were removed. The suckers are growing due to the stress from budmoth damage on exposed leaves. These suckers need to be removed when trees are sprayed so its energy can be put back into the top leaf.

Pecan budmoth damage

Suckering due to budmoth damage stress.

Nutrient

Some growers have sent pictures of “purple” colored leaves on young trees. When a plant shows a purpling color, it is most always a deficiency of phosphorus. Yellowing is associated with many other nutrients including nitrogen and potassium. The way a plant takes up these nutrients from the soil is different. Because nitrogen is mobile in the soil, it moves with water across the roots often referred to as ‘mass flow.’ Phosphorus is unlike nitrogen and potassium and has very little soil mobility. The way a plant takes up phosphorus is when a root grows to the P in the soil, referred to as ‘root interception.’

With these younger trees without established roots OR cooler weather slowing down root growth, it is common to see this deficiency. This does not change what we do in terms of our fertilization. Continue to fertilize with a complete fertilizer and rate according to tree age.

Phosphorus deficiency

A very common deficiency on newly planted trees is nickel deficiency or ‘mouse ear.’ It is easy to tell by the leaves which become round in shape. This is site specific where nickel is difficult for newly planted trees to take up. Nickel competes with many nutrients in the soil. If you see this in your young trees, use a foliar nickel product and spray leaves at a rate of 1.5 qt / 100 gallons of water. You sometimes have to spray multiple times a year. If the problem persists, make a spray in September or October since the tree stores nickel in the buds.

Nickel deficiency (mouse ear)

Young trees fight zinc deficiency for the same reason as nickel. Zinc deficiency in pecan is characterized by “wavy” or “curly” leaf edges. Grower will ask if they need to apply soil zinc. The answer is yes, but not for the current deficiency. Most soils need zinc since pecan requires zinc for nut production. Mature trees take up zinc from both the SOIL and LEAVES. But it must be able to take up zinc in the soil because just leaf sprays will not be sufficient for its needs. This is why we apply 1 – 3 lbs of zinc per tree every year for the first four years.

If young trees have zinc deficiency, it is normal. Go ahead and apply foliar zinc and 1 quart per 100 gallons of water on to those trees. Sometimes zinc deficiency and glyphosate injury appear similar since they are both yellow in color. The difference with glyphosate is the leaves appear “thin” or “strapped”.

Zinc deficiency in the upper right section of the tree characterized by “wavy” leaf edges.

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