

# Peanut Pointers

September, 2022



UNIVERSITY OF  
**GEORGIA**

*Peanut Team*

## Water Requirement vs Water Supplied (a different perspective)

R. Scott Tubbs & Wesley M. Porter, UGA

When considering monthly rainfall averages, looks can be deceiving. For example, let's look at the rainfall received during the current 2022 growing season at Midville, GA according to the University of Georgia Weather Network ([georgiaweather.net](http://georgiaweather.net)). In Table 1, the section labeled A shows the cumulative rainfall based on the standard monthly total. However, if we were to shift the calendar by 3 days earlier, we have results as shown in the section labeled B. The distribution of rainfall appears considerably different when represented this way, even though the season total is the same. Here, the majority of the month of June is much drier (and not shown is the fact that over half of that amount came in a single event – 1.07 inches on June 14). July appears drier, while August is much wetter. Yet if we shift the calendar the opposite direction by merely 1 day later as in section C, the results look substantially different once again. In this case, the majority of the months of June, July, and August appear much more evenly distributed. Hence, in scenario B, August appears to have nearly 4.5 inches (over 3x) more rain than June. Although scenario C shows August to have only around 1 additional inch of rain than most of June. Here, June doesn't look like it suffered much, especially given the stage of the crop with much lower water demands early in the season.

Oh, the difference a few days can make! The point of this exercise is that it is important to assess how the rainfall distribution is occurring in smaller increments rather than larger chunks when trying to meet the crop's overall needs and supplementing with irrigation. It is very important to note, crop water requirements are about timing and distribution of water, not just total amount.

Table 1. Precipitation accumulation at Midville, GA in 2022. Monthly averages represented in three different ways.

Monthly Rainfall (season total = 16.69 inches)

	May 1-31	June 1-30	July 1-31	Aug 1-26
	3.27	2.74	5.60	5.08

Shifting 3 days earlier (season total = 16.69 inches)

	Apr 28-May 28	May 29-June 27	June 28-July 28	July 29-Aug 26
	3.16	2.04	5.02	6.47

Shifting 1 day later (season total = 16.69 inches)

	May 2-June 1	June 2-July 1	July 2-Aug 1	Aug 2-Aug 26
	3.27	4.02	4.32	5.08

Breaking it down to a weekly distribution, we can get a better understanding of how the crop's overall water demand is being met or missed. For the example below, I am using actual rainfall data from the Tifton, GA weather station and comparing it to the peanut crop's weekly water demand in two different planting scenarios. The water demand curves represented below (dashed blue line in the Figures) are

based on the UGA checkbook method, which was developed on historical average rainfall conditions and a planting date of May 1.

Figure 1 represents a peanut field planted during the last week of April. The historical average rainfall (dotted red line) does a fairly nice job of matching the crop’s weekly water demand (dashed blue line). It is typically drier early in the season when we need to get equipment in the field to get seed in the ground, and also later in the season when we need to start digging. It is typically wetter during the period of peak fruiting and pod fill. The 2022 actual rainfall data (solid yellow line) is demonstrating similar patterns to the overall crop need and historical averages, despite a few peaks and valleys. There is an overall deficit of 2.66 inches of water if subtracting total rainfall received vs. total water needed at this stage. However, that does not mean that this crop is only behind by 2.66 inches of irrigation water in order to meet the crop demand. Since excess rainfall in one week is typically not available in weeks where there are other deficits, we have to consider irrigation totals on a weekly basis in order to meet the crop’s demand for that specific week. When taking that into consideration, a total of 7.69 inches of irrigation would be needed to bring each week with a deficit up to the total crop’s need.

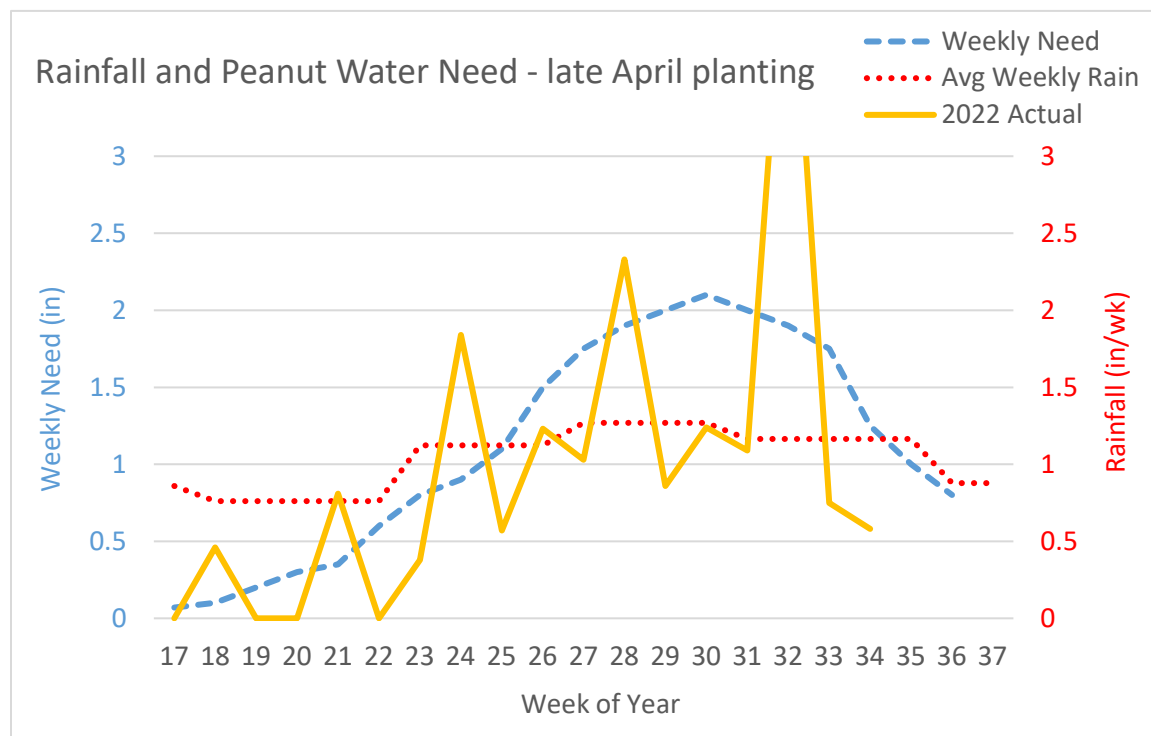


Figure 1. Water requirements of late April planted peanuts with 125-yr average and actual rainfall.

If we shift this same concept to a peanut crop that was planted late in the planting window (i.e. the first week of June), then the crop’s water needs do not match the historical average rainfall as closely. The crop’s peak water demand comes at a time when rainfall is typically becoming more scarce.

Fortunately, the current rainfall received up until this point in the 2022 season is meeting the crop's needs. There is actually a 7.07 inch surplus of water in total. However, this again does not necessarily distribute to when the crop needs it. In total, the supplemental irrigation needed at this point in the season has been 2.33 inches, although that has all come within the last two weeks as water demand (dashed blue line) is increasing while rainfall received (solid yellow line) has been less than that line on the curve. Hence, the late planted crop should be in good position to produce an excellent yielding crop, based on rainfall up until now. However, with the most critical water demand coming over the course of the next 4-5 weeks, rainfall will need to continue to be above the historical averages if maximum potential production is going to be maintained. Continued consistent rainfall over the next month could position the late planted crop to be better than the early planted crop. However, a dry spell over the next month could spell disaster for the late planted crop while the early planted crop has essentially already maximized production and just trying to maintain what is already on the vines.

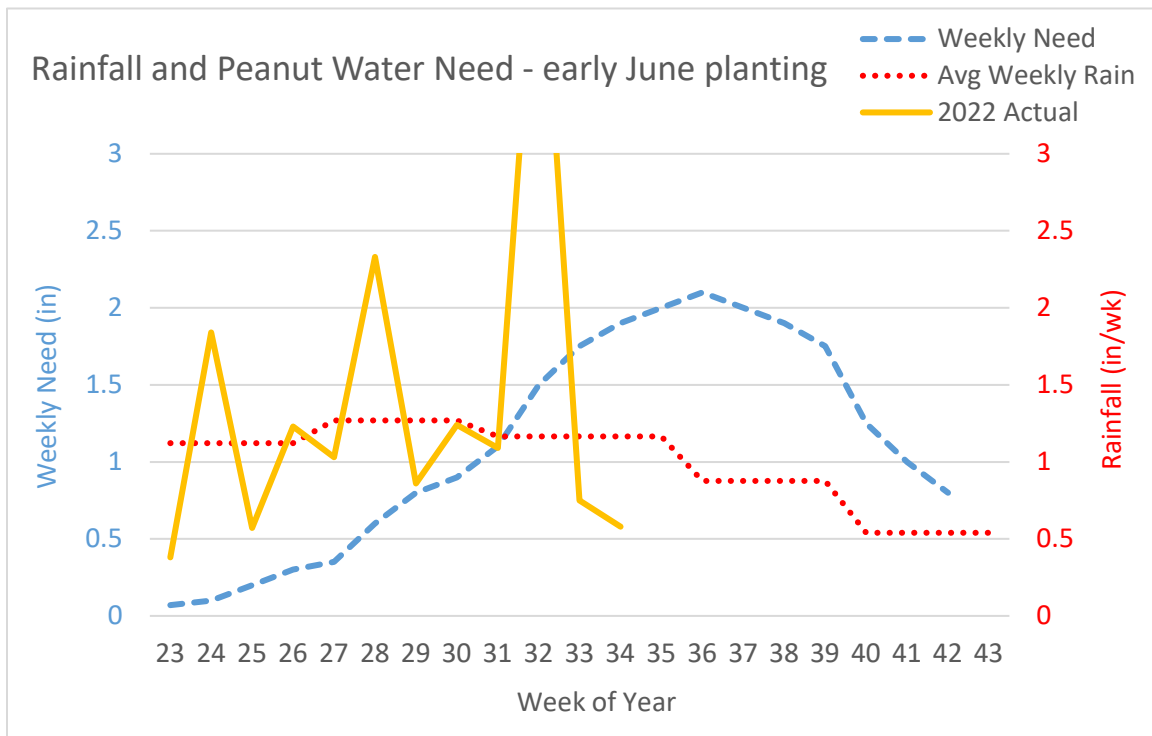


Figure 2. Water requirements of early June planted peanuts with 125-yr average and actual rainfall.

It should also be noted that the checkbook curves shown above are a general guide to demonstrate how water demand increases, peaks, then decreases over the season. However, many other factors are involved in more accurately determining the localized needs of a given field, including soil type/texture, organic matter content, porosity/drainage, and other soil health characteristics. Advanced scheduling techniques have been developed in recent years to assist in meeting the crop's irrigation requirements. There are smartphone apps, web-based schedulers, soil moisture sensors, etc. that are more precise in targeting actual irrigation requirements. These can be very useful in meeting the crop's water demands to reach (and maintain) maximum yield potential.

## **End of Season Irrigation for Peanuts**

**David Hall, Jason Mallard, and Wesley Porter, UGA**

The only thing that is consistent from year to year is that each season is different and variable. While last year had high amounts of rainfall, this year has been very hot and dry from May through the end of June. Since the end of June, we have been getting sporadic rainfall across parts of the state. Thus, you need to monitor what your current soil moisture condition is and make appropriate decisions moving forward. Additionally, keep an eye on the long term forecast and the tropics. Up to this point, we have been getting the sporadic rainfall, but we have been lucky that there have not been any significant tropical events. That can change in a blink of an eye as we focus on the tropics closely this time of year. An ill-timed and slow-moving storm from the gulf can be devastating.

Luckily, we have had some reprieve from the hot and dry weather that we saw early in the spring. Unfortunately, some of the rainfall and high humidity is causing disease issues. Dr. Kemeraït has been sounding the horn weekly that the conditions are conducive for costly diseases. With peanut water needs winding down towards the homestretch, the last thing a producer would want to do is schedule irrigation without boots on the ground or moisture sensors relaying real time data, therefore risking increased disease outbreaks or soil drying out. During peak water demand and dry weather, it is fairly simple to schedule irrigation events. This time of the season water demand begins to fall off quickly and most have been receiving ample rainfall. Do not let your guard down if we enter a dry period with dry hot west winds. (We prefer those conditions after digging!) Sandy soils can dry out fast and we are looking at what appears to be a great crop. Remember, heavy downpours that exceed the soil water holding capacities basically become run off. We have received much of that this year.

The month of September is when the majority of our peanuts are dug and most of them are now well past the peak water demand and need less than an inch of water per week. Now is a good time to start thinking about irrigation termination for earlier planted peanuts planted in mid-April to early May. Unlike corn and cotton, we do not have a physiological irrigation termination trigger for peanuts. Once you reach 140 DAP or 2500 GDD's (sometimes these can separate due to extreme temperatures), digging should be considered based on maturity board checks. They can help indicate if you will be digging early, on time or later than expected. This tool can help you tremendously in irrigation scheduling. Hopefully, digging and harvest time will bring favorable weather. In the meantime, if in doubt about moisture these last few weeks, walk your fields, review moisture data, watch the weather closely and consult your UGA Extension County Agent if you would like a second opinion.

One of the biggest concerns with digging peanuts is that too much moisture can cause excessive soil on the shell, especially in heavier soils and too little moisture can making digging difficult. Keep in mind the timing of harvest, your soil type and how much available moisture is actually in the soil if irrigation is needed to aid in the digging of peanuts. In clay type soils you are much more apt to apply too much water and end up having to park the digger for a day, totally defeating the purpose of irrigating to prepare the soil for proper digging when you are ready.

Please refer to Figure 1 below for irrigation requirements, and when to start thinking about terminating irrigation. As always, reach out to your local UGA Extension County Agent if you have any questions.

Peanut Irrigation Schedule			
Days after Planting	Weeks after Planting	Inches per Week	Inches per Day
1 - 7	1	0.08	0.01
8 - 14	2	0.26	0.04
15 - 21	3	0.39	0.06
22 - 28	4	0.55	0.08
29 - 35	5	0.76	0.11
36 - 42	6	0.95	0.14
43 - 49	7	1.08	0.15
50 - 56	8	1.29	0.18
57 - 63	9	1.49	0.21
64 - 70	10	1.59	0.23
71 - 77	11	1.58	0.23
78 - 84	12	1.49	0.21
85 - 91	13	1.40	0.20
92 - 98	14	1.30	0.19
99 - 105			
106 - 112	16	0.97	0.14
113 - 119	17	0.83	0.12
120 - 126	18	0.67	0.10
127 - 133	19	0.49	0.07
134 - 140	20	0.30	0.04
141 - 147	21	0.14	0.02
148 - 150	22	0.01	0.00

The diagram features three large arrows pointing from the right side of the table to the right. The top arrow is green and points to the rows for weeks 11-14, labeled 'Peak Water Use'. The middle arrow is yellow and points to the rows for weeks 16-19, labeled 'Water Use Declines'. The bottom arrow is red and points to the rows for weeks 20-22, labeled 'Irrigation Termination is Advised'.

Figure 1. Peanut water requirements, with considerations on irrigation termination.

## **Weather and Climate Outlook for September 2022 and Beyond**

**Pam Knox, UGA**

Most of the Southeast experienced conditions in August that were wetter and warmer than usual, although as usual there were variations across the region. Some areas are still feeling the impacts of too much rain, while others have experienced dry conditions that have reduced yields in their crops. The humid conditions and lack of sunshine in the areas that have experienced a lot of rain are feeling the impacts in the form of abundant fungal diseases and a difficult time for farmers to get into their fields.

September so far looks like it will be a continuation of warm and wet conditions, although there will be some more seasonal periods and some areas. There will be some periods of dry weather scattered amid the rainy days, so you will need to watch the weather forecasts carefully to find those windows of opportunity to work in the fields.

Later in fall, I expect to see drier conditions appear. This is not unusual in October, since this is the driest month of the year for many parts of the region, but it could be drier than usual as La Niña remains strong and continues to affect our weather over the fall and winter. Generally La Niña has the strongest signal in southern Georgia and Alabama and into Florida, with more northern areas less predictable because the strength of the La Niña is more important in how it affects those regions.

The big question mark in all of this is the tropics. After a very quiet July and August (the quietest since 1941!), we are seeing some life in the tropics as we enter the peak of the Atlantic tropical season. The storms that are expected to form early in September are all predicted to turn north before they get close to the East Coast so won't provide much impact to us. However, there is still more than half the season to go, and some years, like 1961, had quite a few storms in the second half compared to the first half, so don't write off the season just yet. The eventual path and strength of the storms will determine what impacts we are likely to see, and of course we don't know where any storms that develop will go at this point. The best I can say is to keep watching the forecasts to make sure you know what is coming in time to make preparations well ahead of any rain or landfall that might occur.

## **Peanut Digger-Shaker-Inverter Setup and Operational Considerations**

**Simer Virk and Scott Monfort**

With peanut harvest approaching, growers will start digging peanuts soon across most of the state. Along with considering when is the right time to dig peanuts, proper setup and operation of peanut digger-shaker-inverter is also important to minimize harvest losses and to ensure optimal equipment performance and efficiency during harvest. Below are few considerations for growers to keep in mind when digging peanuts to prevent any mechanically induced yield losses due to improper digger setup and/or operation:

- Using an RTK Guidance system/Auto-Steer on the tractor while digging peanut helps in maintaining the digger path directly over the row center or over the planting path and results in approximately 10% reduction in yield losses compared to when digging peanuts with a tractor without an auto-steer system.
- Before beginning harvest and making any adjustments specific to the harvest conditions, inspect the digger carefully for any broken, bent or missing parts as well as the sharpness of the blades. Dull blades fail to cut the tap root resulting in dragging roots or dislodging pods from the plant.
- Make sure that tire pressure in the tractor tires as well as the rear gauge wheels on the digger is adequate and same in both tires. Also check if both tires are the same size.
- Adjust the digging angle (and therefore depth) by adjusting the length of the top link on the digger. Digger blades should be set at a slight forward pitch and at the depth where they cut the tap root just below the pod zone. Both an excessively shallower and deeper depth of the digger blade can result in significant digging losses.
- Blade angle/depth is also dependent on soil type and texture. Any considerable change in soil type within or among the fields will also require a change in blade angle/depth adjustments as clay soils usually need a more aggressive angle whereas sandy soils require a less aggressive blade angle.
- Digging speed should be optimized based on the prevalent in-field conditions at harvest. Generally, the optimal ground speed for digging peanuts is between 2.5 and 3.5 mph. Speeds above 3.5 mph can result in an increase in digging losses and therefore should be avoided.
- Set the rattler conveyor speed to match or just slightly above the forward travel speed of the tractor while digging peanuts. Conveyor speeds slower or too fast than the tractor speed can both result in increased pod losses.
- The conveyor depth should also be adjusted where it picks up vines with its teeth just clearing the soil. Additionally, if needed, adjust the knocker wheels up or down to regulate the amount of shaking where is enough to remove the soil from the vines.

Remember, properly dug and inverted peanut plants will form a uniform, fluffy, well-aerated windrow with very few pods touching the soil so make sure to keep a close watch on the digger operation in the field and adjust settings accordingly as and when needed.



## **September Peanut Pointers**

### **Scott Monfort, UGA**

I wanted to thank everyone who attended the Cotton Defoliation/Peanut Maturity trainings this week. After the meeting, I found the questions that would be helpful to draw out more information from your growers about each field. This information will help you in making recommendations as well as learn more about the practices of your growers. I am also providing the peanut development chart along with the maturity calendar to help you. Please let me know if you need me to visit your county to assist with your maturity checks. You can also send me pictures and we can discuss over the phone.

Common questions/comments that need to be considered during a Peanut Maturity Clinic

1. What is the field name?
2. What is the peanut variety?
3. How old are the peanuts? What is the planting date?
4. Are the peanuts Irrigated or Non-Irrigated?
5. What are the conditions of the Plants/Vines?
  - a. Encourage growers to bring plants not just pods
6. Are there any disease issues?
7. What is the short and long range weather forecast?
8. Remind growers that 200 pods are needed. This would be off several plants pulled from a representative spot(s) of the field.
9. The more information you have, the better prediction of maturity you can make.
10. How much TSWV do you have in this field?
11. What insecticide did you use?

## **Points to Consider for Late-Season Disease Control in Peanuts**

### **Bob Kemerait, UGA**

Late-season disease recommendations for a peanut crop are often confusing. Reasons for this include A) digging/harvest dates are not “set in stone”, B) the incidence of one disease versus another affects choice of fungicides, C) disease can be cryptic, as in the case of underground white mold, D) there are a number of fungicide options that can be deployed, and E) approaching rains can make it necessary to quickly change management plans. While there may not be a single “best” recommendation, some solutions are better than others. These solutions have three things in common: a) timeliness, b) use of the right products (emphasis that there is often more than one “right” product), and c) use of the right products at the right rates. Late-season management decisions are more important now than they ever have been as much of Georgia’s peanut crop remains in the ground for nearly 150 days. Our historic “spray every 14 days for a total of 7 sprays” may not go the distance anymore.

Growers often request advice on adjusting digging dates based upon disease in the field. Generally, it is best to wait until harvest maturity is reached in order to assure maximum grade, rather than digging the peanuts early. For example, though tomato spotted wilt may be severe in a field in 2022, I generally recommend waiting until harvest maturity to dig the peanuts, unless other diseases, like white mold, are “piggy-backing” on top of the plants already affected by the tomato spotted wilt. However, where defoliation from leaf spot is severe, as it is in some field now, then it may be critical to digging earlier than planned in order to protect yield. Georgia-06G can withstand defoliation of 50-60% IF digging is NOT delayed past maturity. Any unexpected delays in digging will result in yield losses. Where white mold is severe, for example greater than 50% incidence, the grower should consider digging early. Significant defoliation from leaf spot diseases and severe outbreaks of white mold can increase digging losses by weakening peg-strength.

**NOTE:** A critical consideration for choice of fungicides late in the season is that pre-harvest intervals (PHI) vary among fungicides. For example, Alto has a 30-day PHI, and Elatus and Convoy have 40-day PHI, compared to 14-day PHI for other fungicides such as Provost Silver and Fontelis. Growers must always check the label to make sure on all of these.

**Below are some typical situations that peanut growers may find themselves in and suggestions for control:**

**Grower is 4 or more weeks away from harvest and currently has excellent disease control.**

- **Suggestion** – I recommend the grower apply at least one more fungicide for leaf spot control with an inexpensive white mold material mixed with it, for good measure. It is generally helpful to use a mix of a protectant leaf spot fungicide (like chlorothalonil) mixed a leaf spot fungicide with some curative activity (e.g., Alto, Domark, Topsin) for best protection.

- **Suggestion** – Given the low cost of tebuconazole, the grower may consider applying a tank-mix of tebuconazole + chlorothalonil for added insurance of white mold and leaf spot.
  - **NOTE 1:** If white mold is not an issue, then the grower may stick with a leaf spot spray only.
  - **Note 2:** If grower has planted Georgia-06G or Georgia-12Y and the plants are leaf spot-free at 4 weeks prior to the anticipated digging date, an additional fungicide application for leaf spot may not be needed if grower is willing to watch/scout the field for other disease, for example peanut rust, and put a fungicide out if harvest is unexpectedly delayed, as with the approach of a hurricane.

**Grower is 4 or more weeks away from harvest and has disease problems in the field.**

- If the problem is with leaf spot – Grower should insure that any fungicide applied has systemic/curative activity. If a grower wants to use chlorothalonil, then they would mix a product like thiophanate methyl (Topsin M) or cyproconazole (Alto), with the chlorothalonil. Others may consider applying Priaxor, if they have not already applied Priaxor twice earlier in the season. Provost Silver from Bayer Crop Science has become a “go to” product for helping to protect peanuts from leaf spot diseases late in the season. Provost Silver is NOT a “silver bullet” but it has performed very well. A tank-mix of Provysol + tebuconazole may also be appropriate.
- If the problem is white mold – Grower should continue with fungicide applications for management of white mold. If they have completed their regular white mold program, then they should extend the program, perhaps with a Fontelis, Provost Silver, or tebuconazole/chlorothalonil mix. If the grower is unhappy with the level of control from their fungicide program, then we can offer alternative fungicides to apply. Where white mold AND leaf spot are late-season problem, then adding a little extra to the Fontelis for additional leaf spot control may be beneficial.
- If the problem is underground white mold – Underground white mold is difficult to control. Applying a white mold fungicide ahead of irrigation or rain, or applying at night, can help to increase management of this disease.

**Grower is no more than 3 weeks away from projected harvest and does not currently have a disease issue.**

- Good news! This grower should be good-to-go for the remainder of the season and no more fungicides are required. **SEE NOTE BELOW ABOUT HURRICANES**

**Grower is 3 or fewer weeks away from harvest and has a problem with disease.**

- If leaf spot is a problem and 2-3 weeks away from harvest, a last leaf spot fungicide application may be beneficial. If leaf spot is too severe (more than 25% defoliation already occurs), then a last application will not help. Tank mixing chlorothalonil with a

systemic fungicide, like thiophanate methyl, Domark, or other appropriate systemic fungicide, could be beneficial.

- If white mold is a problem and harvest is 3 weeks away, then it is likely beneficial to apply a final white mold fungicide. If harvest is 2 weeks or less away, then it is unlikely that a fungicide will be of any benefit.
  - **NOTE: If harvest is likely to be delayed by threat from a hurricane or tropical storm, then the grower may reconsider recommendations for end-of-season fungicide applications.**

Finishing “strong” in the 4<sup>th</sup> quarter of the 2022 peanut season is important. Finishing “strong” means timely applications, ahead of rains or storms if necessary, using the right fungicide combination at the right rate. Your yield depends on it.