

## Looking Toward Harvesting

David Jordan

NC State Extension

By the time you receive this edition of *V-C Peanut News* the main concerns will be the last couple of sprays for leaf spot disease, possibly a spray for Sclerotinia blight and getting organized and ready for digging. Of course the anxiety of tropical storms and getting peanuts and other crops completely out of the field will persist all the way through the fall. Last year at this time I prepared an article on digging and harvesting based on surveys conducted at 2018 production meetings. The information in that article still holds true and you can go back and take a look for the details (<http://aboutpeanuts.com/wp-content/uploads/2018-Fall-Peanut-News.pdf>). In the current article I will mention elements of the 2018 article but will focus more on two tables we have in the *2019 Peanut Information* guide on growth and development at different points in the season. On the last day of July I received a text with the following question, "If a peg enters the ground today, how long until that peanut matures?" My quick answer was "November 15." I got that answer from time spent preparing and referring back to Table 10-2 (and Table 10-1) on page 172 in *2019 Peanut Information*. I used the information Dr. Balota provided in Virginia Peanut Production guide and some gut feelings to prepare Table 10-2 (shown here). Whether someone can wait until November 15 depends on many things. Peanuts have been in the ground for 2-3 months by August 1 with November 15 being over 3 months away. Peanuts in the same scenario last year might have reached maturity earlier because of the higher heat unit accumulation in August, September and October compared with the 10 year average (using Lewiston-Woodville as an example). At a field day a few days ago (July 30 in Virginia) someone indicated that heat unit accumulation was higher [about 200 Growing Degree Days (GGD<sub>56</sub>) or heat units] corresponding to about 10 days earlier in maturity than the norm. That can be very helpful for peanuts planted late if water came along with the heat. But that is not the case everywhere, and some of the extra 200 heat units might have come along when water and subsequent peanut growth was limiting. For example, much of the extra heat unit accumulation during the last two weeks of May was of little value because of the dry conditions, and too much heat (temperatures above 95 F) causes stress on the plant.

In North Carolina we likely have 20% of the acreage planted after June 1 with some of that as late as June 20. This was either due to delays caused by lack of water to get a stand and holding off to plant, or situations where peanut was planted in mid to late May but soil moisture was inadequate to get stands. Peanuts in some fields emerged after rains came in early June but not soon enough to get an ideal stand, and this forced some farmers into a replant. In 2018 we also had 15-20% of peanuts planted late but

that was because of excessive rain in May. We do a great deal of research at the Upper Coastal Plain Research Station near Rocky Mount, and the month of May demonstrated the extremes in rainfall and soil moisture when comparing 2018 and 2019. Regardless of the cause, peanuts planted in June are vulnerable to risks during the fall. Soils can get too wet for digging and harvesting or cooler temperatures that prevent complete maturation of pods can occur. In 2018 we were fortunate. Yields were high with June plantings in part because we accumulated about 5 extra heat units per day from August through early October (there is a graph of this in *2019 Peanut Information* guide on page 39.) This worked out in large part because we had the moisture to go with the heat. We will need this to happen again in 2019 for the late planted yields to match yields we often get with May plantings. On average, our work shows that planting around June 5 results in yields 15% lower than May plantings while yields with June 15-20 plantings are often 30% lower. In 2018 with the extra heat units, differences in yield between May and June plantings were more similar than our long term averages.

Over the next few weeks (August into early September) we will all be guessing at what yields will be and when the crop will reach optimum maturity. We will share information on heat unit accumulation and try to make our best educated guess. But in reality there are some years where we might be spot on while in others we are likely to be off and surprised. The information in Tables 10-1 and 10-2 of this article are ballpark numbers and help us get organized and make initial plans. But the most important thing we will do is collect pods from fields and run them through the pod blaster using the turbo nozzle and a pressure washer. This will tell us when peanuts are likely to be at optimum maturity – growers decide when they are ready to dig given the other 10 important things at the top of their list during that period of time. If you take a look at the article from 2018 V-C Peanut News I mentioned above (that might be a little like asking a student to read something outside of class,) the change in mesocarp color over a 10-day period of time corresponds to around a 20% difference in yield. After all of the educated guesses, calculations and speculations from now through early September, it is best to rely on the colors of pods and predictions on how they will change. This gets you closer to the end game of optimizing yield and market grades. And yes, if you are over 10 days out you will need to do it one more time to fine tune your decision.

**Table 10-1. Peanut Growth Stages and Descriptions. This information is adapted from Agronomic Recommendations and Procedures by Dr. Maria Balota in 2016 Peanut Production Guide, Virginia Cooperative Extension Service publication AREC 117NP.**

<b>Approximate Number of Days After Planting*</b>	<b>Growth Stage</b>	<b>Description</b>
7	Emergence	Seedling “cracking” the ground and cotyledons visible
45	Flower (R1)	One-half of the plants with a bloom
55	Beginning Peg (R2)	First visible peg
70	Beginning Pod (R2)	Peg tip swollen to twice the peg diameter
75	Full Pod (R4)	Fully-expanded pod, to dimensions characteristic of the variety
80	Beginning Pod-Fill (R5)	Pod in which seed is visible in cross-section
90	Full Size Seed (R6)	Seed is filling the pod cavity
130	Beginning Maturity (R7)	Pods having interior hull color and orange to brown mesocarp
150 – 160	Harvest Maturity (R8)	70% of harvestable pods have an orange, brown, or black mesocarp (scrape pod saddle with knife) and interior hull color (crack pod open)
165 – 170	Over-mature (R9)	Kernels in oldest pod develop tan-brown seed coat and pegs may have deteriorated; over-mature pods have coal-black mesocarp color.

\*Based on average of 30 Virginia market type peanut varieties planted on May 1 at Tidewater AREC. The numbers of days after planting increase for earlier and decrease for later plantings. If June is dry, these numbers are bigger from R1 through R4 and smaller afterwards.

**Table 10-2. Approximate Number of Days Between Planting and Various Stages of Peanut Development.**

Development Stage	Calendar Date or Days after Planting			
	May 1	May 15	June 1	June 15
Emergence	May 10 (10)	May 22 (7)	June 6 (5)	June 20 (5)
Flower (R1)	June 15 (45)	June 25 (40)	July 13 (38)	July 23 (38)
Peg (R2)	June 25 (55)	July 5 (50)	July 23 (48)	Aug 3 (48)
Full pod (R4)	July 15 (75)	July 25 (70)	Aug 10 (65)	Aug 20 (65)
65% brown/black mesocarp development	Sep 25 (145)	Oct 5 (140)	Oct 20 (140)	Nov 15 (150)

Assumes adequate moisture and temperature throughout the season. Estimates are from timing of planting to 65% flowering, pegging, full pod, and brown/black mesocarp color. Cool night temperatures after October 5 could decrease the rate of maturation and negatively impact yield. Peanut planted after June 1 will be in the process of maturing after October 1 and this creates substantial risk. If temperatures are in the high 40 F for two nights in a row maturity will most likely cease for the remainder of the season and yield will be lower than yield of peanut planted earlier in the season. The predictions of maturity presented here are no substitute for pod blasting (assessing pod mesocarp color) two or three times in September/October to determine actual maturity in the field.

Peanut planted in early May (top), early June (middle), and approximately June 20 (bottom) near Lewiston-Woodville, NC. Images recorded July 31.







