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Virginia-Carolinas PEANUT NEWS

Field Days Go Virtual!

North Carolina Peanut Field Days in 2020

The 68th Annual North Carolina Peanut Field Day and the 9th Southeastern North Carolina Peanut Field Day will be virtual this year due to COVID-19. Videos and screen casts will be provided for these events by September 15th. These resources will be posted on the NC State Extension Peanut Portal at peanut.ces.ncsu.edu. A full list of speakers and topics for the virtual event will be posted as a *Peanut Note* on the NC State Extension Peanut Portal in late August. For more information, please contact David Jordan at david_jordan@ncsu.edu.

South Carolina Annual Peanut and Row Crop Field Day Goes Virtual

With concern for public safety, Clemson University has made the decision to cancel the in-person version of the 2020 Edisto Peanut and Row Crop Field Day planned for the first Thursday in September. In its place, a virtual field day is being put together to be made available for viewing at your convenience to continue to spread the word on work being done to help benefit grower production. Continuing Education Units and Pesticide Recertification Credits are being pursued to be available for those that need them. Just as peanut butter comes chunky or smooth, this year's field day's being served up digital.

David B. Langston, Jr.

Professor and Director - Tidewater Agricultural Research and Extension Center

I'm very pleased to introduce myself, David Langston, as the new plant pathologist for field crops for Virginia Tech. I have been the Director of the Virginia Tech Tidewater Agricultural Research and Extension Center (Tidewater AREC or TAREC) since August of 2014. With the recent departure of plant pathologist Dr. Hillary Mehl, I had been managing the plant pathology program while remaining director since May. My new job as field crops pathologist begins August 10th.

My agricultural career began as I was growing up on our family's Century Farm in Gates, NC. My daddy grew peanuts, corn and soybeans and raised cows and hogs. My family still owns and tends the land there. I became a crop scout in 1986 just after my freshman year in college, and I scouted and consulted for cotton and peanut growers for the next 10 years. I received my B.S. in Agronomy and M. Ag. in Crop Science from North Carolina State University in 1990 and 1995, respectively. I received my Ph.D. degree in Plant Pathology from Virginia Tech University in 1998 under the direction of the late Dr. Pat Phipps. My dissertation was titled "*The Role of Host, Environment, and Fungicide Use Patterns in Algorithms for Improving Control of Sclerotinia Blight of Peanut*". This work was used to develop the Virginia Sclerotinia Blight Advisory that is still available on Virginia's Peanut-Cotton Infonet.

After graduating from Virginia Tech, I was hired as an Assistant Professor and Extension Commercial Vegetable Pathologist at the University of Georgia-Tifton Campus in 1998. I was promoted to Associate Professor and Professor at the University of Georgia in 2004 and 2010, respectively. My primary mission was to deliver timely, up-to-date disease management information to Extension agents and growers

Continue on page 2

Dr. Barbara Shew

The Peanut Farmers of North Carolina thank you for all you have done for them. We wish you the best!

It's Peanut Time

Marianne Copelan
Executive Director
Virginia-Carolinas Peanut Promotions

As we are living during an uncertain time, one thing that is for certain is snacking has quickly become everyone's favorite activity. As many of us have transitioned from working at the office to working from home, snacking has quickly become more accessible. Several companies are incorporating peanuts and peanut butter into their list of ingredients. We, the Virginia Carolinas Peanut Promotions, have put in the time and effort to encourage consumers to purchase peanut and peanut butter products via the internet, radio, billboards and other areas.

Social media plays a big factor into marketing these days and looks to be this way for years to come. Many companies have incorporated social media into their marketing plans as each fiscal year comes and goes. Virginia Carolinas Peanut Promotions has partnered with Chernoff Newman, an advertising agency located in Columbia, SC. We work together each month to feature content that is on trend with local events, the news or ag related topics. Currently we are promoting early introduction, recipes, educational materials and our website. Our mission for this fall is to incorporate in-shell advertisements encouraging consumers to buy in-shells for at home or away activities to enjoy with family and/or friends. Be sure to follow us on Facebook, Twitter and Instagram.

This year Virginia, North Carolina and South Carolina came together to combine funding from the National Peanut Board to promote peanuts. We partnered with iHeartRadio to run radio advertisements starting June 10 through October 1, 2020. The advertisements were created with the National Peanut Board and a company called Latinbrand. We created three spots of 10-, 15-, 30-second commercials promoting gourmet, boiled and in-shell peanuts. Due to the Virginia-type peanut being so versatile, we felt it was important that consumers know how great the peanut really is. We've factored covid-19 into our commercials by incorporating our product at a backyard BBQ, family beach vacations, and watching their favorite sports team play on tv. The following areas are where our commercials are currently airing: Norfolk, Fredericksburg, Williamsburg, Charlotte, Wilmington, Asheville, Greenville, Columbia and Charleston. At the end of each advertisement we direct our listeners to visit our website, aboutpeanuts.com.

All three grower associations within the Virginia Carolinas currently have billboards promoting peanuts within each of our three states. In Virginia, billboards are located in the Virginia Beach and Outer Banks areas for consumers to see as they are traveling to the beach. In North Carolina you will find a billboard in Halifax county off I-95 which reads as "Welcome to Peanut Country." South Carolina has billboards located on highway 501 in Myrtle Beach, I-26 heading to Charleston and I-95 Southbound. Each of the three billboards features an image of in-shell peanuts, the SCPB logo and our website aboutpeanuts.com. The billboards read as "Welcome to Peanut County," the same as the North Carolina billboard. Many people are driving vs. flying during this time and we feel it's important to incorporate print media for consumers to see while traveling to their destination.

As we will soon enter into a new season, we will continue to build new partnerships with agencies promoting peanuts via zoom calls, eblasts and holiday themed marketing campaigns. We are excited to share all of this information via our social media platforms as well as in the next *Peanut News* edition.

I hope everyone stays safe during this time and I wish a great fall harvest for all peanut farmers. I will look to see everyone soon, as the next time I write to all of you, I will have a new last name as Mrs. Marianne Catalano.

Langston continued

of commercial vegetables throughout the state. I conducted applied research on all pathogen types which include fungi, viruses, bacteria and nematodes and published the findings in peer-reviewed journals and reports.

With the help of my outstanding staff here at the Tidewater AREC I plan to focus on: 1) evaluating new and experimental disease management tools/products; 2) validate and improve upon current fungicide and nematicide use patterns; 3) reopen the Tidewater AREC Nematode Diagnostic Lab; and 4) sustain and improve delivery of disease/weather advisories and disease identification and management.

In summary, I am very pleased and blessed to be in my new role, and I look forward to serving internal and external stakeholders as an Extension specialist as I have in the past. I am especially excited to be able to use my experience and expertise to help peanut growers in the Commonwealth improve their bottom line through tactical and relevant disease management strategies.

The End of a Season

Barbara Shew
Plant Pathology - NCSU

The late summer article for Peanut News is always been the hardest one for me to write. Usually the disease situation in September has not started to shape up by the time the article is due in early August. That appears to be the same situation this year, with a few ringers thrown in. I'm typing this as tropical storm Isaias is bound for North Carolina, with the outcome still unknown. And this is just one little bit of uncertainty in the middle of a pandemic and the hardship it means for many. But if all goes as planned, one thing is certain for me. This is the last article I will write for Peanut News. I retire from NC State on September 30 after working on peanuts and their diseases for about 40 years.

I started my career in peanut as a Ph.D. student working under Dr. Marvin Beute. He was a great mentor who made invaluable contributions to our understanding of peanut diseases, especially CBR. When I joined the lab in 1980, CBR was ravaging peanut fields across the state (Figure 1). My dissertation project was not on CBR, but students in Marvin's lab were expected to pitch in when work needed to be done. Working alongside his students on CBR was a big part of my Ph.D. experience. The Beute lab's work developed the foundations for CBR control still used today, and his close collaboration with Dr. Johnny Wynne lead the release of the first CBR resistant cultivar, NC 8C, in record time. This was followed later by NC 10C and Perry. Pat Phipps at Virginia Tech and Jack Bailey at NC State helped to tame CBR with fumigation. Now CBR problems are a rarity in North Carolina, probably due to longer and better rotations, host resistance, and possibly a natural build-up of antagonists in the soil.

Southern stem rot was my dissertation topic. At that time, fungicide options were not satisfactory and resistant cultivars were unknown. Stem rot seemed like a bit of a dead end in North Carolina because the damage often was hidden underground and unappreciated. I made some progress, but it was not until later that we had the tools to manage this disease. Folicur not only was the first fungicide really effective against stem rot in peanut, but trial results with Folicur (and others later) clearly showed that fungicides that control stem rot (and Rhizoctonia) consistently increase yield. Later, we were surprised to find that Bailey has stem rot resistance. Selection for CBR, TSWV or Sclerotinia blight probably inadvertently selected for stem rot resistance as well. With fungicides and resistance, stem rot control has improved considerably. However, the conditions that lead to stem rot problems are still not very well understood and timing sprays involves a lot of guesswork. I've worked on stem rot longer than any other peanut disease and still understand it the least.

My career continued as a post-doc working on leaf spots. A primary aim of this work was to identify leaf spot lines that could be used to breed leaf spot resistant cultivars. Working out the environmental conditions that favor leaf spot infections and development was another part of the puzzle. This work took many years of research in many places to come to fruition. Pat Phipps at Virginia Tech used the environmental data to develop a practical leaf spot advisory that we adapted into the current NC advisory. In the meantime, Drs. Wynne, Stalker and Isleib kept working toward developing leaf spot resistant breeding lines and cultivars. These efforts culminated in the release of Bailey, which had good resistance to early leaf spot. At the same time, industry developed effective new chemistry against leaf spot diseases, including Abound, Headline and many others, with Miravis the latest in a long line of effective leaf spot fungicides. Observing the outstanding performance of these products in their early years was exciting. Unfortunately, leaf spots remain formidable foes, overcoming our best efforts at genetic and chemical control.

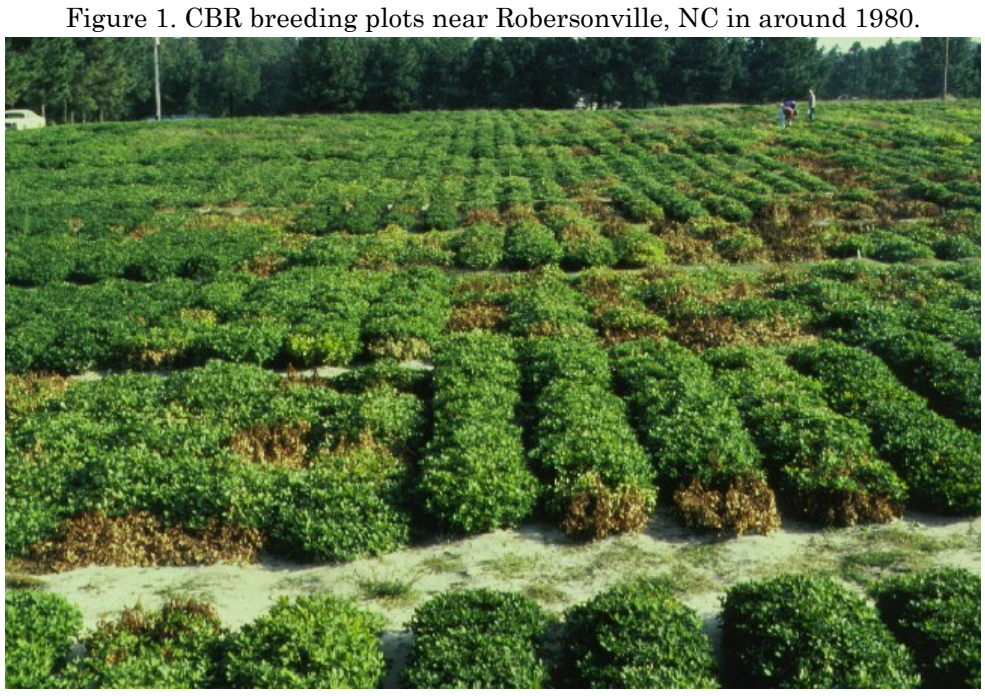
Jack Bailey was a friend and an unforgettable person. He was especially interested in finding solutions for Sclerotinia blight. He pushed hard for registration of fluazinam (Omega 500), which growers needed badly. He collaborated with Marvin Beute, Johnny Wynne, and later Tom Isleib and I to identify Sclerotinia blight resistant cultivars. Work on biological and cultural control followed, and my lab worked to understand Sclerotinia biology, resistance in peanut, and the environmental conditions that lead to Sclerotinia blight outbreaks. We were surprised to discover that Sclerotinia can be very active in hot weather and can become active earlier in the season than previously thought. We learned that timing sprays at the first outbreak of disease was the most effective way to control it. On the other hand, we found that late season sprays had less benefit than expected. Sclerotinia blight remains my favorite peanut disease, with apologies to those who think "favorite disease" is a contradiction in terms!

I have been fortunate to have had so many talented colleagues over the years. Working with Tom Isleib was a great experience. His success as a breeder of virginia-type peanuts is unmatched, but he's also one of the most intelligent people I know, one of the funniest, and one of the most generous. David Jordan's and Rick Brandenburg's examples taught me how to be an effective peanut specialist. No one works harder for peanut growers than David. Growers could not ask for a more committed extension specialist, scientist and advocate. It's been a privilege to have had him and Rick as colleagues. I firmly believe that peanut county agents are the best in NC State Cooperative Extension system. They've keep me honest with tough questions and inspire me with their dedication, breadth of knowledge, and willingness to learn. Nothing I've done could have happened without the dedication of the staffs at the Rocky Mount and Lewiston research stations. I can't thank them enough for their professionalism and patience.

I'm incredibly grateful for the opportunity to work in a job that has provided me with so much satisfaction over the years. There have been many times when I couldn't believe that I was being paid to spend a beautiful day in the field while teasing apart the mysteries of peanut diseases. There were some miserably hot days and days when everything seemed to go wrong. On those days, I would remind myself of the many growers and cooperators who had invested their time, energy and support into the work we do. The trust growers place in us is truly humbling, and I can think of no greater honor than having a grower ask me for my advice. Thank you!

I hope before too long we can see each other again, face to face, in a peanut field. Until then stay safe and (nerd alert!) live long and prosper.

Figure 1. CBR breeding plots near Robersonville, NC in around 1980.



CO-OP NOTES

Thomas R. Cotton, Jr.
Manager
PGCMA

There is something to be said for the phrase "things are going to get better". It portrays feelings of hope and optimism. That is what we need right now. I could certainly use that phrase in talking about our everyday lives and what we have all been through since March of this year. If there was ever anything the world's population could come together on it would be that this pandemic needs to be put behind us once and for all. We want our lives back!!

I can also relate this phrase to our current situation in peanuts, in a number of ways. The month of July for much of the V-C production area was too hot and dry for anything to really grow other than weeds. Peanuts began to suffer in areas, and in other places the plants were small but still maintained a nice green color with little wilting. Needless to say those plants probably had few peanuts under them and will hopefully start the pegging process heavily once we have now gotten the moisture from Hurricane/Tropical storm Isaias. I just hope we have continued receiving adequate rain between now when I am writing this and when you read this a month from now. If so, I think we have the potential to produce yet another good peanut crop.

The earlier saying or phrase can also apply to our current peanut marketing situation. You could certainly say that crop commodity prices can't get any lower so they have to get better. We have had high hopes for months that the Phase 1 deal with China was sure to buoy cotton, corn, and soybean prices. I still feel that this is possible IF China fulfills its obligations under the agreement. There have been some significant grain purchases lately by China, and if this could spread over into cotton it would be great news. As we all know, other commodity prices have as much to do with peanut contract prices as most any other factor, so this situation affects much more than just the commodity prices currently.

While other commodity prices are critical to the peanut situation, so certainly is basic supply and demand, including of course the carryover supplies from prior years. This is one area that has already improved and continues to do so. The excess supplies from prior years have declined dramatically in the last few months due to a couple of reasons. For one, acreage planted to peanuts has continued to level off and decline since the disastrous generic acres were finally eliminated in 2018. Second, 2018 and particularly 2019 were both crops with quality issues in the Southeast grown peanuts. This resulted in increased costs to the sheller and fewer kernels that could be used for edible consumption. Exports of good kernels and inedible kernels both increased, cutting supplies. Most importantly, consumption in the US has increased much higher during this pandemic than we as an industry are used to. It is difficult for manufacturers to keep up with peanut butter demand and this has also spilled over into the snack peanuts category though to a lesser degree than peanut butter. Inshells have been a stumbling block due to the cancellation of baseball, but even this is being gradually overcome. In fact, had the quality of last year's Southeast crop been better, I expect domestic and edible export sales would have been even higher.

All in all, yes, there is room for further improvement but, considering where we have been, I would say things are getting better. Let's keep our fingers crossed and hope for the best. Good luck with harvest and the weeks to come.

Peanut Butter Chocolate Chip Bars

Cookie Layer
1 Cup Creamy Peanut Butter
1/2 Cup Melted Coconut Oil
1/4 Cup Maple Syrup
2 Teaspoons Vanilla Extract
1/2 Teaspoon Sea Salt
2 1/2 Cups Almond Flour
2 Tablespoons Maca Powder
1 Cup Semi Sweet Chocolate Chips

Cacao Layer
1 Cup Walnuts
2 Tablespoons Cacao Powder
12 Soft Dates
2 Tablespoons Water
1/4 Teaspoon Sea Salt

1. Line an 8x8 inch baking pan with parchment or wax paper.

2. In a large bowl stir together peanut butter, coconut oil, maple syrup, vanilla and salt. Make sure the mixture is thick (add more peanut butter if needed). Add almond flour and maca to combine both ingredients. Lastly add the chocolate chips and press into the pan make sure the mixture is firm prior to placing in the freezer. Place the pan in the freezer.

3. In a blender or food processor combine walnuts and cacao powder until all is well chopped. Add the dates and water to make sure the blade does not get stuck. Spread onto the cookie layer then sprinkle with sea salt.

4. Place the pan in the freezer for 30 minutes to firm ingredients then remove and slice into bars.

5. Once the finished bars are removed from the freezer let thaw for 15 minutes at room temperature and serve.

Sutter Sez

Robert R. Sutter
Chief Executive Officer
North Carolina
Peanut Growers Association

There is no doubt that 2020 will turn out to be the year that everyone would like to forget. The Covid-19 pandemic has affected life in the United States more than any event in my lifetime and it is not over yet. Social unrest as a result of the death of George Floyd is testing the very foundation of our current form of government. As if that is not enough, along comes Hurricane Isaias. Thankfully the rains associated with the hurricane helped to end drought conditions on most fields of peanuts and cotton.

The National Hurricane Center has called for a very active season; we are already to "I" and it is just August. The rains from Isaias will get us further into harvest, but due to the lateness of the crops, we will need a late frost this year.

NC peanut farmers planted 105,922 acres of peanuts in 2020. Virginias were planted on 94,724.4 acres and runners were planted on 11,197.6 acres. Nineteen counties planted runners. John B. Sanfilippo contracted conventional runners to be sent to their plant in Bainbridge, Georgia. The rest of the planted runners were high oleic. Bailey II, which is the high oleic version of Bailey, continues in the seed increase stage. There should be some Bailey II seed available for producers next year, with normal availability in 2022.

When that happens the VC will be all high oleic. This is important because the buying points don't have the facilities to keep high oleic and conventional peanuts separated. It is also important to the inshell market because of the long shelf life, which has been a problem at sports venues due to poor handling by vendors.

Because of the dry spell in July the projected NC yield was falling back from 4,000 lbs./acre to 3,800 lbs./acre. But thanks to the hurricane and the hope for a late fall and frost, the crop expectations have improved. I think we will need a high yielding crop to meet the demand in 2020/2021.

Domestic usage continues to increase, this year by 3.8%. Exports are up 40.2%. The carry-out of peanuts at the end of the marketing year continues to decrease to an acceptable level. So I think there will be a home for every peanut produced in North Carolina and the VC. That's good news.

The Covid-19 pandemic has caused problems for the peanut researchers at NCSU. From travel restrictions, labor restrictions and restricted access to research farms, researchers have had to deal with problems they never could have anticipated. If the researcher and a technician had to travel to a research plot, they had to take two vehicles. Even with these restrictions, it is anticipated over 80% of the projects will be completed.

Because of the cancellation of sporting events this summer and probably this fall due to Covid-19, the sale of salted in the shell roasted peanuts has seen a major decline in sales. The National Peanut Board is trying to do something about it. They are running TV commercials reminding baseball loving consumers to by inshell peanuts to consume while watching major league baseball on TV in their homes. The commercial not only taps into the deep and longstanding connection between peanuts and baseball, but does so in a surprising, simple and relevant way. It reminds us that while these are unprecedented and challenging times, we can remain resourceful and upbeat in the face of them.

Coverage includes match ups between the Chicago Cubs and the Cleveland Indians, Chicago White Sox and the Detroit Tigers. Peanut spots will also air on games between the Kansas City Royals and the Cincinnati Reds, the Minnesota Twins and the Milwaukee Brewers. The spots will air nationally, so millions of consumers will be reminded to purchase peanuts for the game.

Virginia Carolinas Peanut Promotions continues to promote peanuts. I encourage you to read Marianne Copelan's report in this paper. Marianne is doing a great job utilizing social media and traditional advertising to spread the word on peanuts.

I am optimistic about the future for peanuts in North Carolina. We will come out of this crisis called covid, and when we do peanut sales will be positioned to grow. Inventories are at correct levels and demand is up. Sporting events will resume and sales of roasted inshells will take off. Peanut butter and snack peanuts sales will continue to climb.

I hope that this harvest season will be safe for all and that the weather will permit the harvest of a good quality, high yielding crop.

The 68th Annual Peanut Field Day at the Peanut Belt Research Station in Lewiston-Woodville and the 9th Southeastern Peanut Field Day at the Border Belt Tobacco Research Station in Whiteville have been cancelled as in person events and will take place virtually. Because of the Covid -19 pandemic we are unable to have the events at the stations due to required social distancing and governmental restrictions on size of gatherings. As mentioned on the front page, there will be video presentations and screen casts provided for these events by September 10 and 15, respectively. These resources will be posted on the NC State Extension Peanut Portal. To view the Field Day presentations, open an internet browser and type in peanut.ces.ncsu.edu on the address line. This will give producers the opportunity to view the Field Day proceedings any time. I hope producers will participate in this virtual Field Day.

10
SIMPLE PEANUT RECIPES
SHORT ON TIME?
SHORT ON SNACKS?
SHORT ON INGREDIENTS?
The Peanut Institute
To get these recipes & learn about the health benefits of peanuts visit us at
PeanutInstitute.com

Exploring Opportunities for New Options for Insect Control in Peanuts

Rick Brandenburg
Extension Entomology Specialist
North Carolina State University

There has been quite a bit of work on insect management on peanuts this year in North Carolina. I am excited that we have some promising new approaches to insect control. Interest from companies the past few years has not been high so it is encouraging to see some renewed interest. While I don't have a lot of the results analyzed and pulled together in a format to discuss I wanted to review what we've tried to accomplish this summer. Those results will be available and discussed this winter.

We addressed four distinct areas of insect control in peanuts this summer. The first was thrips management with the continued effort to document the most cost-effective approach to early season thrips management. Not a lot has changed over the past ten years, but David Jordan and I continue to recommend the 3 weeks post-plant application of a foliar spray of acephate regardless of what you put in the furrow at planting. Our data continue to show that most of the time when you apply the acephate at 3 weeks, you see an increase in plant health and that shows up in yield at the end of the season. Our main concerns are whether we are starting to see any neonicotinoid resistance with in-furrow use of Admire Pro or Velum Total. The development of insecticide resistance by thrips to this group of insecticides has been observed for several uses in various crops. Last year we saw a drop in performance for these products, but it was a very hot spring so there was no way to tell if that was simply a reflection of the weather. This year it appears that AgLogic (aldicarb) outperformed all other products including Phorate, Admire Pro, and Velum Total. Not a failure by any stretch for any product, but one product looked best this year under much cooler conditions than we encountered in 2019. At this time, I don't see what I would call a resistance problem with the neonicotinoids when used in-furrow on peanuts, but we need to keep a close eye on this.

The second area is looking at alternatives for southern corn rootworm control in peanuts. We rely exclusively on one product Lorsban (chlorpyrifos) for rootworm control and while it has been effective literally for more than 50 years, it has an uncertain future. Due to this need, we have been on a mission for more than ten years to find an alternative so we have an option if chlorpyrifos registration is lost. We have not seen any products that offer us any real hope (other than one product when applied through irrigation) for a cost-effective approach to rootworm control at midseason.

This year we are testing some products that may give us more favorable results. We won't know the final story on any of them until we begin to dig pods and examine them for rootworm damage, but we are keeping our fingers crossed. We really do need some alternatives for rootworm control, but that pursuit has proven to be a major challenge.

Thirty and forty years ago we used to battle spider mites on a frequent basis. We spent a lot of money trying to control them and often we saw poor control and a lot of crop loss. Over the years we have changed a lot of practices including insecticide use and using the leafspot advisory which all help reduce spider mites' threats. However, if it gets really hot and dry, spider mites will become a problem. Our options in recent years have been limited and the cost of available products has been high and, in some cases, product availability has been limited. This year, we've had a chance to look at some new products and we will provide those results this winter as well. The evaluation of new products is a very welcome sign for peanut pest management as our toolbox of products for insect and mite control has become depleted over the years.

Finally, we've looked at some new options for caterpillar control in peanuts. For many years we relied upon less expensive pyrethroid insecticides for worm control in peanuts and these products provide a very cost-effective approach to caterpillar control. More recently, we have seen some insecticide resistance in corn earworm, and in some cases, it reaches 40% which means a spray of a pyrethroid insecticide might only provide 60% control. That is not acceptable at any price. In addition, we see more budworms in peanuts and these are harder to control than corn earworm and pyrethroids just don't do a good job. So, you put these two situations together the end result is poor worm control in many instances with pyrethroid insecticide use in peanuts. This forces growers to switch over to more expensive "worm' insecticides. There is nothing bad about this, other than it increases the cost of production. These products all work very well for worm control, but growers had become quite comfortable with the cost of the older pyrethroid products.

This summer we looked at an alternative approach of looking at a biological insecticide that has demonstrated good control of earworms and budworms in numerous crops. There are several advantages to this approach including the ability to control the resistant population of earworms and good control of budworms while there is no concern over flaring spider mites. We are examining this as a potential tank mix with fungicides as part of a worm management program. Once again, final results won't be available until later, but I am excited that we are seeing these new options for insect control in peanut being evaluated and considered for use.

We will present our results this fall as opportunities are available. Future articles in this publication will contain results as will notes published on the NC State peanut website and more complete information will be presented through the "virtual" peanut field day this fall. I'm looking forward to sharing the final results.

Thomas R. Cotton, Jr.,
Executive Secretary
Virginia Peanut Growers Association

When I get ready to write these articles I usually look back and see what I wrote about a year ago.

What I saw first was my mention of yet another 100 degree heat index day. Not much different from this year, that is for sure. We really started out pretty good this season, getting peanuts basically planted on time. Corn looked good yet again, peanuts were growing, and all was well. Things can change in such a hurry. We were starting to dry out and when we missed the July 4th or so tropical storm, things went downhill from there with a July that saw near continuous dry weather and excessive heat.

As I did last year, I usually spend the rest of this column talking about promotional events that we either attended or are forthcoming. I can't very easily do that now as every event from early March through the end of the year was or has been cancelled.

We have had to adjust some due to the cancellations. The Va Nutrition and Dietetics Annual Conference which we sponsor instead will have a webinar that will be broadcast to all of the organization's membership in Virginia. Samara of the Peanut Institute will discuss the nutritional benefits of peanuts which will give us and your products great exposure.

We, through Marianne, are promoting the consumption of peanuts on Iheart radio and this promotion may continue for a while. We do have two billboards once again promoting peanuts as part of a beach vacation. One is near the Outer Banks with the other on the Eastern Shore. For the third year we will be advertising in two Cooperative Living magazines that each will be mailed to 500,000 customers in the fall and during the holiday season. Marianne continues her Facebook advertising along with the continuous posts on all social media outlets. Each of our three VC states will soon begin advertising on the Morning Ag clips which is emailed to thousands of computers each day. We will also do this on the New England Ag Clips to branch outside of our area.

Recently the Association's Board and the Peanut Board met jointly to review the 2019/2020 budget and expenses and to approve a new budget. The new budget is nearly the same level as last year's though there may be some items that won't be held next year which could affect our expenses. I will, however, continue to look for other opportunities to take advantage of to fill the gaps in our promotion plans going forward.

At the same joint budget meeting a lengthy presentation and discussion took place on the level of state checkoff assessment to pursue in the January General Assembly session. The tax rate approved by the legislature will begin with the 2021 crop and will continue for five years. The change from $3 per ton to $6 per ton took place in 2010. Having the $6 rate since then has allowed the Association to replenish its reserves and increase its budget for both research and promotion. It was unanimously decided to pursue $5 per ton for the state excise tax for the next five years.

I will close with two hopes for these upcoming weeks and months. First is that the excessive heat and dry weather are behind us and we can still make a normal peanut crop but with fewer vines than usual. Secondly, that one day soon our lives can get back to normal and put this pandemic behind us. Good luck with the balance of our growing season.

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Peanut Wild Species Program

Jeffrey C. Dunne
Dept. of Crop and Soil Sciences
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The NCSU peanut wild species program, previously under the direction of Dr. H. Thomas Stalker, maintains an extensive peanut wild species germplasm collection used to identify sources of resistance to common diseases, insects and abiotic stresses that would otherwise inhibit peanut production in the Virginia-Carolinas (VC) region. With the recent retirement of Dr. Stalker, the peanut wild species program has become the responsibility of the NCSU peanut breeding program. With this additional responsibility, the entirety of peanut improvement exists under a single umbrella. Peanut wild species development includes prebreeding work to identify wild species with adaptability to the VC region; an extensive crossing program and identification of interspecific hybridization through molecular markers, cytogenetics and flow cytometry; field evaluation and selection of germplasm lines suitable for germplasm release; and national and international germplasm enhancement collaborations. All of this work is done to provide germplasm lines that can be then used in the cultivar development program with the goal of releasing novel varieties with enhanced agronomic properties (yield and pod/seed characteristics) along with the introgressed disease, insect or abiotic resistances from the wild species backgrounds.

The American Peanut Council (APC) represents peanut stakeholders across the entire United States peanut industry. APC supports the long-term growth of the US peanut industry and, as part of its mission, releases initiatives that it determines are most relevant to the peanut stakeholders. The Peanut Foundation (TPF), as the research arm of APC, along with the National Peanut Board (NPB) has recently announced Phase II of the Peanut Genome Initiative (PGI). PGI has determined that the main priority "research target area" is disease resistance, focused on leaf spot. According to TPF and NPB, leaf spot has been assessed to cause $53 million in losses annually for American peanut producers.

Leaf spot is the primary concern of stakeholders because it occurs in all peanut producing regions, and currently, producers rely on fungicide treatments, primarily to combat early (*Passalora arachidicola*, formerly *Cercospora arachidicola*) and late (*Nothopassalora personata*, formerly *Cercospora personatum*) leaf spot. In the VC region alone, peanut farmers spend ~$80/acre, or $17 million annually, on fungicide treatments. These pathogens are rapidly overcoming both host resistance and chemical treatments throughout the entire peanut producing region of the United States. Furthermore, there seems to be a limitation on novel chemistries and more of an emphasis on combination fungicides, which has the potential of allowing the pathogens to develop resistance to multiple fungicide modes of action. Therefore, peanut farmers throughout the region and nation would benefit immensely from varieties that show even moderate-to-high levels of resistance. Downstream users of peanuts would also benefit from a stable supply of high-quality products. Simultaneously utilizing fewer fungicide applications would reduce the ecological footprint of peanut farming, producing peanuts in a more economically sustainable manner.

The NCSU peanut breeding program has a strong resistance to both early and late leaf spot present in breeding lines, derived from introgression events involving the wild peanut species *A. cardenasii* and *A. diogoi*. This makes it an ideal population to initiate enhanced breeding strategies for this disease to produce varieties in a proven program. The three leading Virginia-type cultivars in the VC region ('Bailey', 'Sullivan', and 'Wynne') are all descendants of GP-NC WS 13, a germplasm line carrying substantial introgression from the leaf spot resistant, wild diploid *A. cardenasii*. Recent genotyping indicates that a gene block, significantly associated with leaf spot resistance from GP-NC WS 13, was not incorporated in any of these cultivars, but is present at low frequency (6%) in elite breeding lines in the NCSU peanut breeding program. Furthermore, an additional 17 *A. cardenasii* introgression lines, including ten characterized as leaf spot-resistant, have so far not been incorporated into the NCSU breeding program. More recently, another set of introgression lines derived from a second highly resistant wild diploid, *A. diogoi,* have been developed (Figure 1). Numerous lines from this population are highly resistant to leaf spot and other diseases. Multi-year field testing data have identified HTS IL-29 and HTS IL-51 as having the strongest leaf spot resistance. Therefore, they represent an incredible opportunity to deploy novel resistance mechanisms to combat leaf spot.

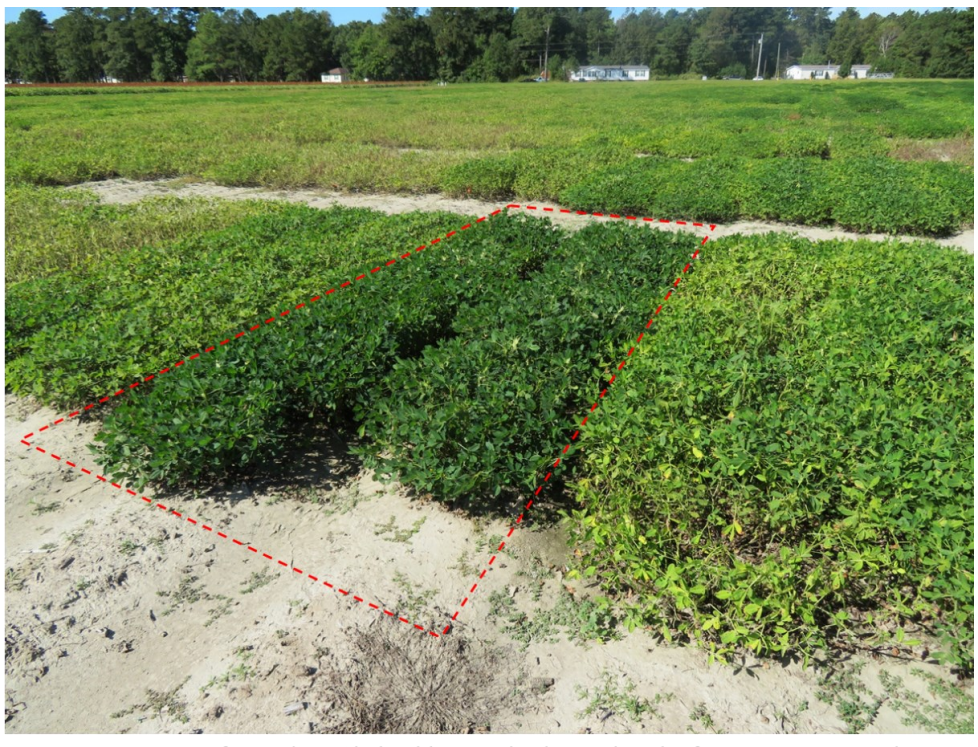


Figure 1. Interspecific *A. diogoi* hybrid line under heavy late leaf spot pressure at the Peanut Belt Research Station (Lewiston-Woodville, NC) in October of 2019

The strongest, most durable resistance would result from pyramiding or stacking resistance loci from both *A. cardenasii* and *A. diogoi* within the same cultivar. Lines derived from both species were grown in the greenhouse during the summer of 2020 and crossed together to develop F_1 progeny for further evaluation. Ultimately, the goal would be to identify stable, leaf spot resistant lines for use in the cultivated breeding program and to use molecular markers to bring this resistance into modern peanut breeding lines with a limited yield penalty.

Digging Peanuts and Keeping Records

David Jordan
Extension Peanut Specialist
NC State University

This past spring we modified our peanut maturity chart, printed, and laminated 3,000 copies (Figure 1). I don't know that these will last for the remainder of my career (I have a long way to go) but we hope these will help a lot of growers and their advisors make good decisions for years to come. I realize you hear a lot from us about the importance of 1) protecting peanuts from disease so that they are healthy all the way through the fall, 2) digging as close to optimum maturity as possible, and 3) lining up your digging and harvesting equipment so that you can get the crop out quickly. These are very important to consider moving into the fall. The turnaround at the buying point may be out of your hands, but doing all we can to build in flexibility at harvest can help us be successful and realize full yield potential and optimum market grades. With that said, here are some of the key features on the profile board:

1. Along with the mesocarp colors, we provide an estimate of the weight of pods in those categories (presented as percent of black pods) (Figure 2). This can help the user get a feel for the importance of not losing too many black pods but also why yields are lower if the bulk of peanuts are in the orange category.

2. The relationship of defoliation and yield loss is presented in a graph (Figure 3), and we have provided key points on when you should start digging based on defoliation and other stresses (Figure 4).

3. We also have a figure that shows the relationship of digging date relative to optimum maturity and how that affects both pod yield and key market grade factors (Figure 5).

4. Major stresses that can affect peanuts are included on the profile board including diseases, insect damage, and other types of damage. These can help inform the user about issues they may have had in a particular field and what they need to do the next time peanuts are in that field. Some issues are related to a specific field or set of practices used, while other issues may be occur more generally and solutions applied more broadly the next year. Either way, one of the first steps is to know wat issues you are dealing with, and the images on the profile board can help do so.

The new peanut profile boards were developed with input from NC State, Clemson, and Virginia Tech. Extension Administration paid for printing and laminating and much of what we based the profile board on was supported by funds from grower organizations in North Carolina, South Carolina and Virginia. We really appreciate the joint effort in getting this tool out to the end user.

We have also modified our peanut risk tool for North Carolina, and in doing so we created a field log for tracking inputs and practices (https://peanut.ces.ncsu.edu/peanut-risk-tool-and-field-log/). Based on our survey this past winter at grower meeting, many growers are using paper notebooks to record their production information. There is nothing wrong with paper (I use plenty of it,) but from a record keeping standpoint and access standpoint, the excel-based system we created may help you search through what you did previously so that you can make different decisions going forward. We hope you will give this a chance as you look back on 2020 and plan for 2021.

Figures 2-5 on next page

Figure 1. Image of the new peanut maturity profile board for Virginia market type peanuts.

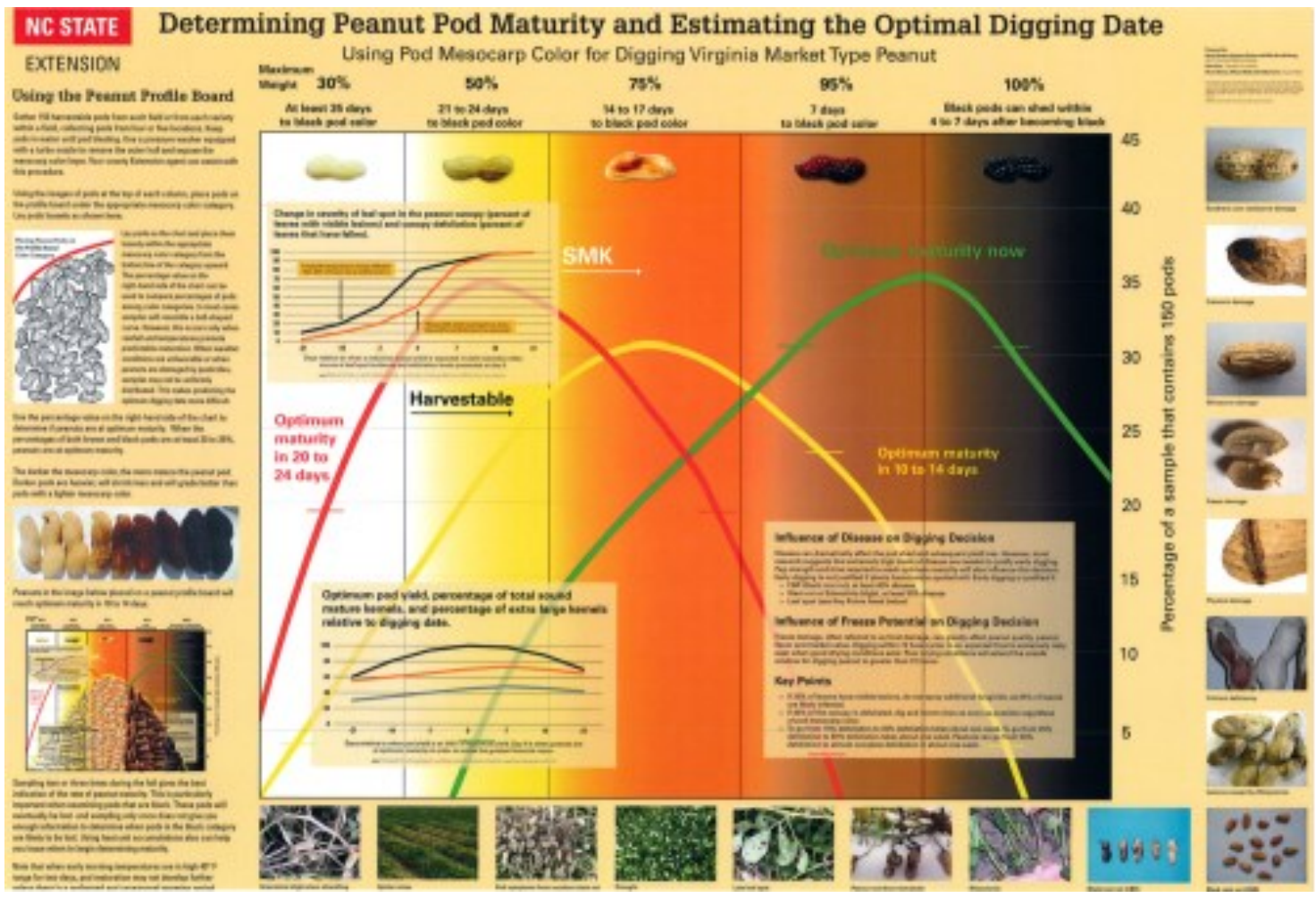


Figure 2. Comparison of the weight of pods expressing orange (rust color), brown and black mesocarp colors.

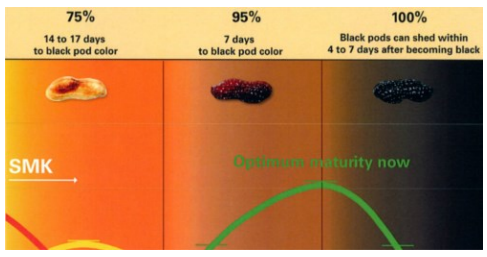


Figure 3. Relationship of percent incidence of leaf spot (leaflets with lesions), canopy defoliation, and peanut yield.

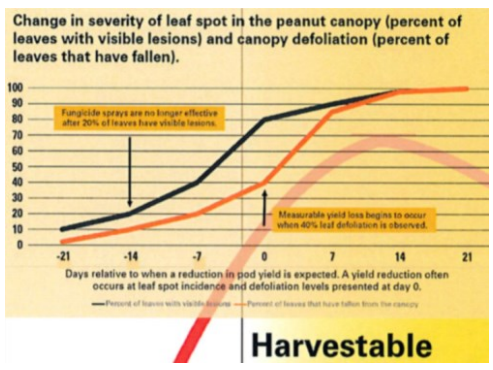


Figure 4. Key points to consider when deciding when to dig peanuts.

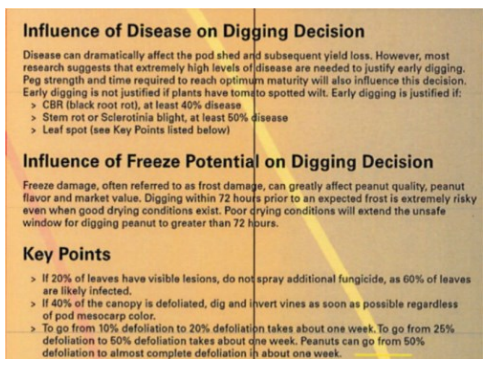
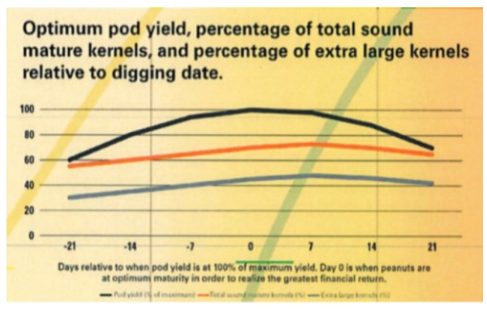


Figure 5. Relationship of digging date and pod yield and market grade characteristics.



Dan Anco
Extension Peanut Specialist
Clemson University

If it weren't true, it would be hard to believe it is already August! Time no doubt flies by, even more so when we are busy. When I was a wee lad (more wee than now), time seemed to go by slowest when I either had the 'luxury' of being bored or dreaded doing something. It wasn't uncommon for me to want time to pass quicker if I didn't particularly favor a situation. Now, time goes by plenty fast enough, and more often than not there just aren't enough hours in the day to get everything done. Still, it seems here as with elsewhere, the lessons of yesteryear are by no means obsolete or antiquated, and now, beyond moments of impatience, the passage of time seems to slow down the more appreciation I am willing to extend to it. In any event, whether a field takes longer or shorter to reach target maturity, at times due to factors outside our control, we can position ourselves to at least plan for a day of reckoning to come when the digger pulls the plug on each field and the crop's hand's called.

2020 so far has been another in a series of not-so-normal years. We had the wettest start to the year I've seen. Now, rain is needed in many fields to keep the developing crop moving ahead to fill pods to their potential. Some moments have been quiet at times, and more than a few have been eyeing up harvest equipment now to help ensure smooth operations when the time comes. Though each year is different, the accompanying table summarizes data for some of the more recently available cultivars from trials over the 2017 to 2019 growing seasons. Most of these were conducted at Blackville, with some also conducted at Florence. Rainfall with crop growth and pest conditions can greatly affect crop progress in a given year and location, so the exact numbers here should be taken with a grain of salt, not unlike a good boiled peanut.

From these data, harvest of Emery peanut was most advantageous between 130 and 140 DAP, when at least 2940 cDD had built up. Acre value closer to 140 DAP was slightly improved due to greater overall TSMK, but this was still marginal. FloRun 331 and TUFRunner 297 corresponded to optimal harvests after at least 150 DAP (≥3340 cDD), with Georgia 16HO leaning more towards 155 DAP (3420 cDD), those the line was a little blurred between 150 and 155 DAP for all three. These trials mostly were from irrigated fields, and under dryland conditions, the seasonal timing and amount of rainfall directly influences the distribution of how many pods start and are able to continue marching towards maturity from different start times in the year. Less generically, checking pods is still worth our time to verify the status of the crop we think we are getting ready to harvest, which is affected by the actual conditions our field experiences. This also helps rule out whether or not half of a split crop has more pops than the other half. All to say mileage may vary from the results summarized here. Checking fields for maturity 10 to 14 days ahead of anticipated digging dates can help prevent maturity from surprising us if fields have moved quicker.

Fungicide protection near the end of the growing season remains important as a buffer against rains that could delay field access or if cooler fall temperatures slow cDD amounts and maturity development. Harvesting a crop before optimal maturity is rarely something we look forward to, as optimal maturity typically lines up with greatest returns. Disease, yield, and estimated profitability data from the VC and SE regions suggests that harvesting Virginia and runner market type cultivars before optimal maturity should potentially be considered if leaf spot canopy defoliation reaches 40 and 50% of the canopy, respectively. This can help to cut losses if leaf spot infections become intense. However, at the same time, if leaf spot comes in quick at the end of the year without having built up over a longer time (more than a month), it generally has less of an effect on yield. Similarly, regular scouting now can help prevent insect infestations from eating undetected. Other important factors we keep on the radar near inversion include soil conditions (when practical avoiding digging when ground is too wet or too dry) and possible frost following inversion, both of which can greatly affect the quality and quantity of pods making it into the basket at harvest. Always plenty to do in a set amount of time, but doing what we can helps from our end. I hope everyone has a beneficial and profitable harvest.

Summary of cultivar harvest performance at varying days after planting (DAP) inversions from 2017 – 2019.

Cultivar	DAP dug	Yield	Acre value	cDD at DAP (after emergence, base 56°F)	No. of experiments (with acre value)
Emery	**130**	**4060 a**	**$670**	**2940**	4 (3)
	140	**4070 a**	**$700**	**3090**	
	150	3510 b	$610	3310	
FloRun 331	140	4190 b	$800	3150	4 (3)
	150	**4770 a**	**$840**	**3340**	
	155	**4630 ab**	**$860**	**3520**	
Georgia 16HO	140	4580 b	$830	3130	5 (4)
	150	**4870 ab**	**$920**	**3340**	
	155	**5300 a**	**$1000**	**3420**	
	163	4650 b	$910	3490	
TUFRunner 297	140	4680 bc	$860	3150	6 (5)
	150	**5140 a**	**$920**	**3340**	
	155	**4920 ab**	**$920**	**3430**	
	163	4310 c	$830	3490	

Midsummer Peanut Growth and Development in Virginia

Maria Balota
Pathology, Physiology
and Weed Sciences
Virginia Tech Tidewater AREC

In Virginia, the month of July 2020 was dry and hot. For four weeks in a row, rain was scarce and only reached very few fields while temperatures were close to or over 100 F for the most part of the month. This happened after a cool and humid May that delayed planting until the later part of this month. Not much leaf spot was apparent during July, but spider mite infestations were reported in numerous fields in drought-stressed Virginia regions (more information on spider mite infestations in peanut cotton and soybean here https://blogs.ext.vt.edu/ag-pest-advisory/category/commodity/peanut/).

By the end of July, the heat units for peanut in SE Virginia were a little over 1600 F, 200 F less than in 2019. This was, indeed, because of cool May and relatively cool June; as for July, peanut does not grow and develop when temperatures exceed 95 F. So, in spite of a hot July and in absence of moisture, heat units were less than in 2019 and peanut was far behind last year's development. In end-July, I looked at the peanut development and Bailey, Bailey II, and Wynne seemed to be at the early stages of the beginning pod growth stage, as shown in Fig. 1. Under hot and dry conditions, one thing to fear is that the nodule number and activity may be impaired. I looked at that, too, but it did not seem to be a problem for in-furrow inoculated peanuts (Fig. 2). This morning, Aug 10, I followed up with looking at the maturity after getting 3 inches of rain from Isaias and other 1.5 last weekend. It seems that with good moisture and less heat, plants advanced to the beginning seed stage (R5) (Fig. 3), which puts peanut close to what we have seen last year, an early maturity; but let's use precaution when determining that. I will continue to watch closely the maturity for the rest of the summer and inform the growers on when our peanuts get close to be dug and, hopefully, pod blasting clinics can be started with help from the Extension Agents. My note on peanut maturity will be posted at this link: https://blogs.ext.vt.edu/ag-pest-advisory.

Figure 1. Wynne at the beginning pod growth stage (R3) in mid-July in SE Virginia peanut growing region.

Figure 2. Roots and nodules on a Bailey II root and opened nodules showing red color, which indices good nitrogen fixation activity.

Figure 3. Cross section through a pod of Bailey II on July 10, 2020.