2022 Peanut Production Guide

Issue 2

This publication is a compilation of research from scientists, extention specialists, and industry experts. The purpose of the publication is to help guide farmers in their 2022 peanut production planning.

Alabama
Peanut Producers Association

Contents

In addition to this publication, we also recorded each researcher giving their presentation. To view thier presentation, please visit the “GROWERS” tab at www.alpeanuts.com.

A Word From APPA

Once again, the Alabama Peanut Producers Association (APPA) is proud to offer this peanut production guide to our peanut growers. This guide is a direct result of APPA and the National Peanut Board investing in peanut production research to improve the efficiency of inputs on the farm. We hope you find the recommendations beneficial and timely. Feel free to reach out to the researchers if you have questions or need further details about their recommendations.

We are aware of the challenges our farmers face to produce a nutritious, profitable and sustainable peanut crop every year. The assessments contributed by Alabama peanut farmers is invested to provide funding for research, education, advocacy and promotion activities which benefit YOU – the peanut farmer.

We use our educational activities to not only educate farmers, but to educate students, consumers, the media and Washington about our farmers and the crop we love so much.

Advocacy for our peanut farmers happens on the local, state and national levels. APPA works with other organizations within the peanut industry to protect the interests of our farmers.

We love to tell the story of the peanuts, from their nutritional value and health benefits to how they are the most sustainable nut. Through our promotional efforts, we urge everyone to keep buying peanuts, peanut butter and other peanut products. We get to tell people the good news of early introduction to prevent peanut allergy. Better yet, we get to tell people about our peanut farmers.

APPA is proud to return more to our peanut farmers in results than they invest. Thank you for allowing us the opportunity to serve you.

Peanut Market Update

Dr. Marshall Lamb, National Peanut Research Lab

There are some similarities and differences in the peanut markets heading out of 2021 into 2022. The similarities are in the increase in demand for peanuts in the U.S. and export markets. Domestic demand is strong. Edible per capita peanut consumption has again broken a new high at 7.9 pounds per person (9.9 with oil stock included). Compare this to 6.7 pounds per person in 2012-13 and steady increases since then. The positive messaging on the health, nutrition, and sustainability of peanuts and peanut products continues to come forward. Total exports were down from the previous year (which was very high) but still at strong levels similar to 2017-2019. Great news on demand increases.

Production wise, there was a slight decrease in 2021 harvested acreage (1.545 million harvested acres) compared to 1.615 million in 2020. However, yield and quality of the 2021 were excellent at 4,135 pounds per harvested acre resulting in a 3.2 million ton crop.

A difference in 2022 compared to previous years is the price of commodities competing with peanuts for acreage. On the day of writing this, December 2022 cotton is $1.03 per pound, up considerably from a year ago ($0.79 per pound). September corn is at $6.04 per bushel with a positive basis compared to last year's September price at $4.87 per bushel. November soybeans are at $14.62 per bushel ($11.78 last year). It is good to see this competition for acreage; however, another difference is the significant increases in costs of production for all crops in 2022 which will affect net farm incomes. Although margins will be tight in 2022, farmers do have the opportunity to evaluate which crops provide the highest returns and minimize risks. A good balance of crop mixes and maintaining good peanut rotation sequences is always recommended.

Continually increasing demand in our domestic and export markets is crucial and the entire US peanut industry has done an amazing job in this arena. Hopefully in 2022, farmers will have a year with no major problems during the growing and harvest seasons and deliver an adequate supply of quality peanuts to supply these demand increases.

Peanut Fertility Recommendations

Dr. Audrey Gamble, Assistant Professor and Extension Soil Scientist

pH

Maintaining soil pH is arguably the most important management practice for improving soil fertility in peanut production. Most Alabama soils are naturally low in pH and must be limed to create soil conditions which increase plant nutrient availability and decrease aluminum toxicity. **The ideal soil pH for peanut production is 6.0 to 6.5.**
At soil pH levels lower than pH 6.0, plant availability of some macronutrients begins to decrease, and zinc toxicity may become an issue. At pH levels above 7.0 deficiencies of some micronutrients—like manganese—can occur.

Zinc toxicity can be caused by low soil pH levels, causing severely stunted plants with split-stems.

Manganese deficiency can be caused by high soil pH levels, causing interveinal chlorosis on leaves at the top of the peanut plant.

Phosphorus and Potassium

Phosphorus (P) and potassium (K) should be applied according to soil test recommendations for optimal peanut yields. Compared to other row crops, peanut is low maintenance in terms of P and K fertility. **Since frequently rotated crops—like cotton or corn—typically leave enough residual P and K for optimal peanut growth, P and K fertilizers rarely need to be applied to peanuts.**

Calcium and Magnesium

Calcium (Ca) is a soil macronutrient that should be monitored closely for peanut production. High levels of Ca are needed for peanut growth and development, and Ca deficiency can result in unfilled pods called "pops", as well as reductions in yield and grade. Soil test Ca levels should be at least 500 lbs per acre in the "pegging zone" (the top 3 to 4 inches of soil where peanut seeds develop) to ensure maximum yields.

If both soil test calcium and soil pH are low at the time of fall/winter soil sampling, ag lime should be applied according to soil test recommendations pre-plant. Ag lime should not be applied as a calcium source if the soil pH is higher than 6.5, since high pH can trigger manganese deficiency. If magnesium is also low, apply dolomitic limestone.

If soil test calcium is low but pH is not, gypsum (calcium sulfate) should be applied at a rate of 1000 lbs per acre at early bloom (30 to 45 days after planting). Gypsum is highly water-soluble. If gypsum is applied too early and high rainfall occurs, calcium can leach below pegging zone. **All peanuts grown for seed production must have one-half ton of gypsum applied regardless of soil test calcium levels, since calcium is critical for seed germination.**

Unfilled pods called "pops" caused by calcium deficiency.

Sulfur

Sulfur (S) applications are rarely needed for peanut production since gypsum applications are frequently made to peanut. A half-ton application of gypsum contains 170 lbs of S per acre, which is far more than peanuts needs for maximum yields. Additionally, S in subsoil layers is scavenged well by the deep taproots of the peanut plant.

Boron

Boron (B) is an essential micronutrient for plant growth, and B deficiency can cause quality/yield reductions in peanut. Boron is critical for reproductive plant growth, and B deficiency can result in split stems and "hollow heart"—a discoloration or abnormality inside the peanut kernel which reduces peanut grade. On the other hand, too much B can be toxic to the plant.

Boron is mobile in the soil and leaches rapidly in sandy soils. **An application of one-third to one-half pound of B per acre is recommended for peanut production.** Boron can be applied as sodium borate (Borax) at plant or as a foliar spray (single- or split-applied) at early bloom. **Always compare products based on cost per unit of boron and ensure the at least 0.3 lb of B is applied per acre.**

Other Nutrients

As long as soil pH is properly maintained, soils should contain high enough concentration of other nutrients—like magnesium (Mg) and other micronutrients—to maintain optimum peanut yields. If a nutrient deficiency is suspected during the growing season, a plant tissue sample can be collected to test for deficiencies. For a representative tissue sample, collect the youngest mature tetrafoliate leaf for 25 to 30 randomly selected plants in 1) the area of the field where deficiencies are suspected and 2) an area where crop growth is adequate, separately. Place samples in a paper bag to send for analysis at your soil testing lab. Soil samples in affected and unaffected areas should accompany tissue samples.

For additional questions, contact Audrey Gamble at agamble@auburn.edu or call 334-844-3995.

Insect Pest Management

Dr. Scott Graham, Assistant Professor and Extension Entomologist

In order to continue to maximize the economics of insect management, proper scouting, pest identification, and insecticide selection is critical. Many of the pests that we deal with are sporadic and require an understanding of what conditions lead to flaring, as well as how to most efficiently manage infestations when they occur.

Thrips are the most consistent insect pest of peanuts in Alabama. Their pest status is elevated by the fact that in addition to reducing early season vigor, they also may transmit tomato spotted wilt virus (TSWV). Although we have high yielding TSWV resistant varieties available, at-plant insecticides are necessary to protect against thrips. Currently, phorate (Thimet) is the only option that consistently reduces the incidence of TSWV incidence. Other options for thrips control include aldicarb (granular) and imidacloprid (liquid). While these options have not been proven to consistently reduce TSWV, they are good options to manage thrips and help increase early season peanut growth. In trials last season, the addition of an at-plant insecticide provided an average yield increase of 1,990 pounds over the non-treated check. In some cases, supplemental foliar thrips sprays may be needed if plants are stunted from other factors (herbicide injury, seed quality, nematodes, etc.). Foliar options include acephate and Radiant. Although acephate is an economical choice, Radiant is less likely to flare spider mites.

In addition to the use of high yielding resistant varieties and at-plant insecticides to manage TSWV, we can also manipulate cultural practices, such as tillage, planting date, and row spacings. Research and Extension personnel from across the Southeast have been publish the Peanut Rx Guide each year. This resource gives the risk of TSWV incidence in your field based on several factors.

The loss of chlorpyrifos (Lorsban) complicates control of peanut burrower bug and corn rootworms. Unfortunately, we do not have any chemical options for control of these sporadic pests in 2022. The good thing is that we know peanut burrower bug (PBB) is only a problem in reduced tillage fields and is worse in hot, dry conditions. In fields with previous issues with PBB, tillage is an option to reduce populations. On the other hand, fields with heavier soils and irrigation tend to be at higher risk of infestations of corn rootworms. Understanding these pest habits can help us understand the in-season risk of infestations of these pests.

Spider Mites are a sporadic hot, dry weather pest that may flare following sequential applications of broad-spectrum insecticides. Keep in mind that mites are likely in every field at low levels all season long, just waiting on conditions to be conducive for populations to explode. Comite II and Portal are the only labelled options we have for spider mite management in 2022.

Defoliating caterpillars, including tobacco budworms (TBW), cloverworms (GCW), corn earworms (CEW), soybean loopers (SBL) and velvetbean caterpillars (VBC) may infest peanuts at various times during the season. Proper scouting and identification is critical, as VBC and GCW can be controlled with most labeled insecticides, however SBL must be managed with the "newer" chemistries (Prevathon, Intrepid Edge, Besiege, etc.).

Lesser Cornstalk Borers (LCB) are another sporadic in hot, dry weather pest. Late planted, non-irrigated sandy fields are at increased risk of LCB. Sometimes a well-timed rain or irrigation event is all that is needed to manage LCB, but when rain is lacking in dryland fields insecticides may be needed. Prevathon, Diamond and Besiege are options to control populations and reduce damage.

Summary. The best way to manage insects is to scout fields and treat only when necessary. Insects are different from other production practices and most times should not be managed preventatively or on a schedule. Often, decisions are made on a weekly basis. We have a lot of resources about peanut IPM on the ACES website, the Alabama IPM Communicator, Alabama Peanut IPM Facebook page, Twitter, the Alabama Crops Report Newsletter and the Alabama Crops Report Podcast.

Don't hesitate to call or text (662-809-3368) or send an email (scottg@auburn.edu) if I can be of any help.

Economic Update and Outlook

Dr. Wendiam Sawadgo, Assistant Professor and Extension Agricultural Economist (Marketing)

Dr. Adam N. Rabinowitz, Assistant Professor and Extension Agricultural Economist (Production Economics)

Peanut production in the U.S. increased in 2021, driven by higher yields. Peanut disappearance moderately declined, despite increased consumption of peanuts for food uses.

Table 1: Peanut Yields by State (pounds per acre)

State	2017	2018	2019	2020	2021	Record Yield
Alabama	3,650	3,550	3,350	3,500	3,400	4,000 ('12)
Arkansas	5,300	4,900	5,200	4,800	5,000	5,300 ('17)
Florida	3,550	3,950	3,800	3,400	3,650	4,000 ('14)
Georgia	4,380	4,390	4,170	4,100	4,450	4,580 ('12)
Mississippi	4,100	3,900	4,000	4,400	4,200	4,400 ('12)
New Mexico	3,500	2,850	3,210	3,000	2,600	3,600 ('06)
North Carolina	4,100	3,870	4,400	4,000	4,350	4,400 ('19)
Oklahoma	3,700	3,070	4,000	4,200	4,400	4,400 ('21)
South Carolina	4,000	3,400	3,800	3,400	4,200	4,200 ('21)
Texas	3,600	3,200	3,050	2,800	3,600	3,750 ('05)
Virginia	4,550	4,200	4,650	4,100	4,700	4,700 ('21)
US Total	**4,074**	**4,001**	**3,934**	**3,796**	**4,135**	**4,211 ('12)**

Source: USDA National Agricultural Statistical Service, Crop Production Annual Summary, January 2022.

Strong peanut production in 2021 was driven by increased yields nationwide (table 1). Yields increased 8.9% from 2020 to 4,135 pounds per acre nationwide. Georgia, the largest producing peanut state, saw yields reach 4,450 pounds per acre, its second highest level on record. Alabama saw yields decline to 3,400 pounds per acre in 2021.

Table 2: Peanut Acreage Planted by State and Year (thousand acres)

State	2014	2015	2016	2017	2018	2019	2020	2021	% Change
Alabama	175	200	175	195	165	160	185	185	0%
Arkansas	11	16	24	30	26	34	39	36	-8%
Florida	175	190	155	195	155	165	175	170	-3%
Georgia	600	785	720	840	665	675	810	755	-7%
Mississippi	32	44	39	44	25	20	23	18	-22%
Southeast	**993**	**1,235**	**1,113**	**1,304**	**1,036**	**1,054**	**1,232**	**1,164**	**-5%**
New Mexico	5	5	8	9	6	5	6	11	83%
Oklahoma	12	10	13	21	16	15	15	16	7%
Texas	130	170	305	275	155	165	190	180	-5%
Southwest	**147**	**185**	**326**	**305**	**177**	**185**	**211**	**207**	**-2%**
North Carolina	94	90	101	120	102	104	108	115	6%
South Carolina	112	112	110	125	87	65	85	69	-19%
Virginia	19	19	21	27	24	25	28	30	7%
Virginia-Carolina	**225**	**221**	**232**	**272**	**213**	**194**	**221**	**214**	**-3%**
US	**1,365**	**1,641**	**1,671**	**1,881**	**1,426**	**1,433**	**1,664**	**1,585**	**-5%**

Source: USDA National Agricultural Statistical Service, Crop Production Annual Summary, January 2022.

The increase in peanut production comes despite a decline in planted acreage (table 2). Acres fell by 5% nationwide, to 1.59 million acres. Acreage planted to peanuts in Alabama was unchanged from 2020, remaining at 185,000 acres.

Table 3: Peanut Production (thousand tons)

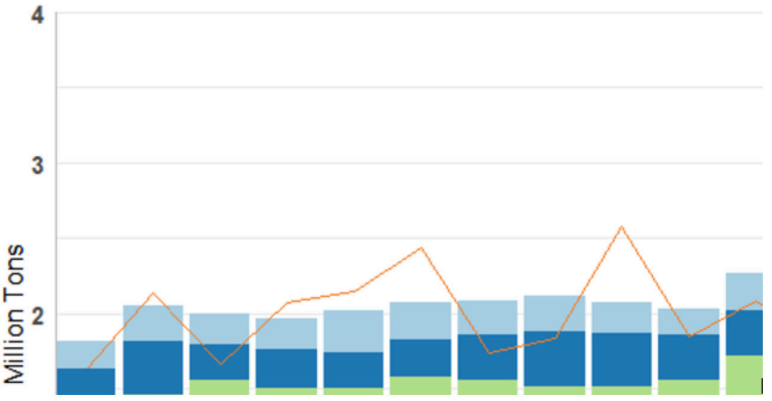
State	2016	2017	2018	2019	2020	2021	% Change
Alabama	310	352	286	261	319	311	-2%
Arkansas	55	77	56	86	91	88	-4%
Florida	277	319	282	295	281	296	5%
Georgia	1,377	1,786	1,438	1,376	1,640	1,669	2%
Mississippi	76	86	47	38	48	36	-26%
Southeast	**2,095**	**2,620**	**2,109**	**2,056**	**2,379**	**2,399**	**1%**
New Mexico	11	13	8	8	7	14	99%
Oklahoma	22	40	23	28	29	33	12%
Texas	280	349	232	244	245	292	19%
Southwest	**313**	**402**	**263**	**280**	**282**	**339**	**20%**
North Carolina	175	240	190	224	212	248	17%
South Carolina	170	236	136	118	139	139	-1%
Virginia	38	60	50	56	55	71	27%
Virginia-Carolina	**383**	**536**	**376**	**398**	**407**	**457**	**12%**
US Total	**2,791**	**3,558**	**2,748**	**2,733**	**3,067**	**3,195**	**4%**

Source: USDA National Agricultural Statistical Service, Crop Production Annual Summary, January 2022.

In all, peanut production in the U.S. is estimated at 3.2 million tons, a 4% increase from 2020 (table 3). Alabama remained the second-highest producing state in the U.S. in 2020, even with its 2% decrease in peanut production.

Peanut demand is expected to decline by 3% this marketing year (figure 1). This is primarily due to a 5% forecasted decrease in exports. Food disappearance is expected to increase by 1% from 2020, while crushing for oil is not expected to change. Increases in consumption of peanut butter (5%), peanut candy (4%), and peanut snacks (3%) drove the domestic food increase during the 2020-2021 marketing year (figure 3). These changes last year follow the similar-sized increases observed the previous year, showing that demand for peanut products has remained strong during the COVID-19 pandemic. Peanut stocks are expected to increase by 5% and remain above 1 million tons, around the level they have been for the last couple years.

Figure 1: US Peanut Production, Disappearance, and Stocks



Source: USDA Economic Research Service, Oil Crops Outlook, December 2021.

Production costs are one of the biggest concerns for agricultural producers this year. Rising chemical costs and supply chain issues are expected to continue in 2022, which is going to put pressure on margins and farm income. Enterprise budgets provided by the Alabama Cooperative Extension System estimate a 10% increase in herbicides, insecticides, and fungicides. Meanwhile, inflationary pressure in the U.S. economy is expected to lead to increased interest rates throughout the year.

The current projection for the peanut Price Loss Coverage (PLC) payment rate for marketing year 2021 (payable in October 2022) is $75 per ton. This is based on an Effective Reference Price of $535/ton and a projected Marketing Year Average (MYA) price of $460/ton, as of January 12, 2022). One should note, however, that the MYA price may change as peanuts continue to be purchased by first buyers through the end of the marketing year (July 31, 2022). In 2022, much will depend on acreage planted to peanuts this spring. We saw a nationwide decline in peanut acreage in 2021, likely in part due to high corn and soybean prices last spring. With corn, soybean, and cotton prices all having reached their highest level in a decade, there will be significant competition for acres to be planted in peanuts. It is possible that peanut planted acreage will decrease once again in 2022.

Figure 3: Peanut Food Consumption by Product and Marketing Year

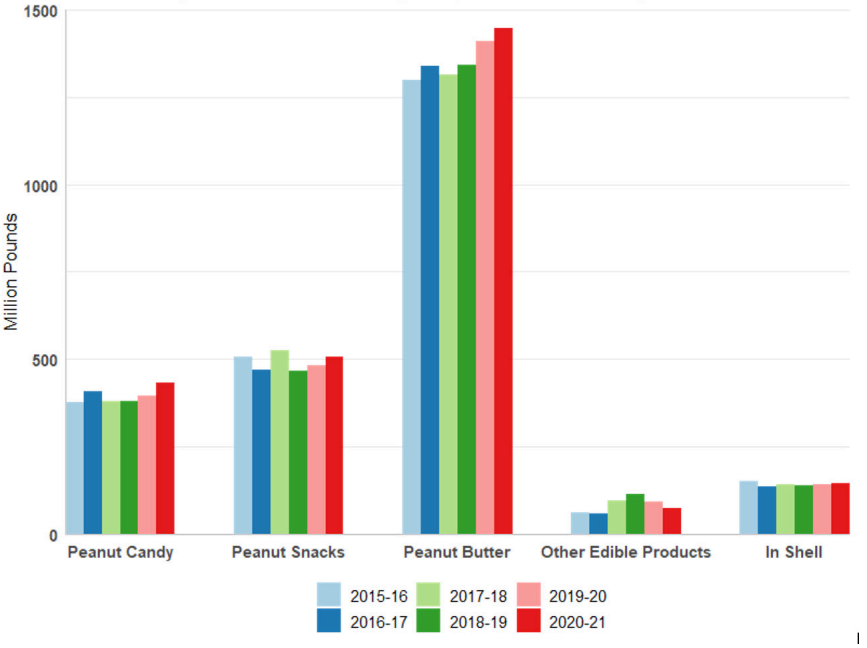
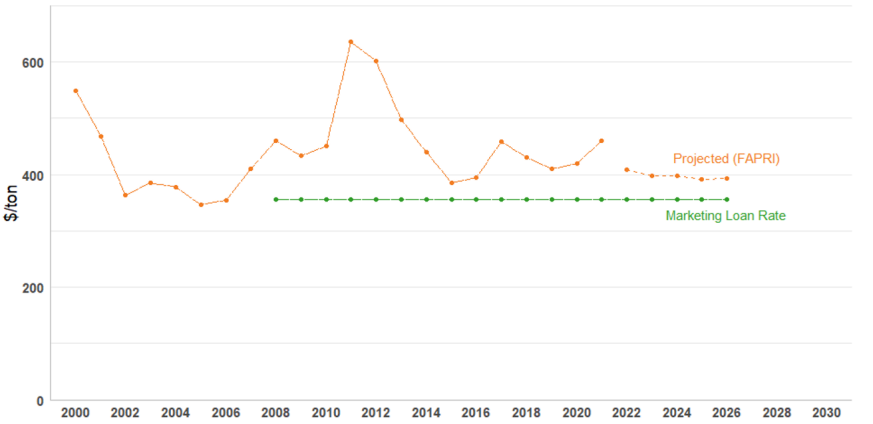


Figure 4: Historical and Forecasted Peanut Prices



Source: Historical prices from USDA National Agricultural Statistical Service. Projected prices from University of Missouri Food and Agricultural Policy Research Institute (March 2021).

With the price of alternative crops creating competition for acreage, and a relatively stable projected peanut ending stock, producers can expect 2022 contract prices to remain near 2021 levels. This likely means prices around $475-$500/ton, with the higher end for producers of high-oleic and seed. This is higher than the projected prices provided by FAPRI as shown in Figure 4, although those projections were estimated a year ago and market conditions have changed. Producers should always think about rotation when making planting decisions as these effect long-term yields and represent best management practices. One should also keep in mind that the current high commodity prices do not represent a long-term trend, but instead are likely a short-term phenomenon that represents the high end of market fluctuations.

Weed Control Recommendations

Dr. Steve Li, Assistant Professor and Extension Weed Scientist

In 2022, major challenges peanut growers will deal with are chemical shortages and high prices caused by supply chain disruption and inflation. Securing pesticide volume, careful planning, and taking necessary measures to ensure pesticide efficacy and application accuracy have suddenly become very important. For common peanut herbicides, the good news is most of them are not expected to be as short as glyphosate and glufosinate. However, there is no guarantee a temporary shortage will not occur during the growing season. Clethodim is currently in shortage and the price has increased significantly. It is reasonable to speculate the clethodim shortage will drive up the demand of other grass herbicides such as Assure, Fusilade, etc. Peanut growers in Alabama traditionally struggle with grass control, and it is definitely not a new issue. Short supply of clethodim will only exacerbate this problem. A few recommendations are provided below for peanut growers to considering in this situation:

1. Most of the soil herbicides such as Valor and yellow herbicides are not expected to have major supply issues. Make sure sufficient soil herbicides are used in burndown, incorporated before planting and sprayed behind planter. More is better than not enough.
2. We have seen annual grass populations start to show increased tolerance to yellow herbicides. Therefore, it is recommended to use both yellow herbicides and a Group 15 herbicide such as Dual or Warrant in burndown and behind planter. Relying on only one chemistry may result in an escaped grass problem.
3. Make sure to start clean with tillage and paraquat, only plant into clean fields
4. Application of Group 15 herbicides, such as Warrant, Dual, Outlook, Zidua and Anthem flex, is strongly recommended around 25-30 days after planting with postemergence treatments to provide extended residual control against grasses and pigweeds.
5. When spraying clethodim and other grass herbicides such as Fusilade and Assure, less than 6-inch grass size is required. They will not fully control large grass. Instead, they will only burn the leaf edges and turn leaves purple. Injured grasses usually can recover and resume growth after 2-3 weeks. Do not hold unrealistic expectations that they will be as effective as glyphosate on large grass. They are not.

6. Efficacy of clethodim and other grass herbicides can be significantly affected by weather conditions. They will lose efficacy under hot and dry conditions. AMS is recommended in that situation.
7. When spraying clethodim and other grass herbicides, do not choose very large droplet size typically used for dicamba and 2,4-D. Adding crop oil and AMS will enhance efficacy. If grass size is bigger than ideal or spraying under hot and dry conditions, tank mix grass herbicide with crop oil and 2-3 lb/A AMS is recommended. Do not mix 2,4-DB in the tank because they are likely to cause an antagonism issue on grass herbicide.
8. Cover crop residue provides significant weed suppression. Auburn data collected over 2019-2021 shows strip tilled peanut in cereal rye residue combined with soil herbicides can effectively suppress weeds for 40-60 DAP. This will translate into saving on postemergence herbicides.
9. Do not overlook pigweeds. They are still as aggressive as in the past. Yellow herbicides, Group 15 herbicides and PPO herbicides such as Valor, Cobra, Blazer and Storm are still effective on them in Alabama. However, losing PPO herbicides to pigweed is an imminent concern since PPO resistant pigweed has been confirmed in South Georgia and Alabama. They are very widespread in the mid-south and mid-west already.

For more information, you can contact me via email at xzl0004@auburn.edu or call 334-844-3804.

Peanut Disease and Nematode Management

Dr. Amanda Strayer-Scherer, Assistant Professor and Extension Plant Pathologist

Crop Rotation: Poor rotations (1 year out of peanuts) increase the risk and pressure of nematode populations, seedling and soilborne diseases, and foliar diseases. Rotate away from peanut, soybean, or other legumes with cotton or corn for least 2 years.

Seed Treatment and Seeding Rate:

- Seeding rates of 6 seeds per row foot can reduce risk of Tomato spotted wilt virus (TSWV)
- High-quality, treated seed (Rancona V PD at 4 oz/ 100 lb of seed or Dynasty at 3-4 oz/100 lb of seed) with high germination rates and vigor can reduce seed rots and damping-off disease severity.

Variety Selection: Plays a pivotal role in reducing nematode and disease pressure (Table 1).

Peanut Variety	Root Knot	TSWV*	Leaf Spot*	White Mold*
Georgia-12Y	None	Resistant (5 pts)	Tolerant (15 pts)	Resistant (10 pts)
Georgia-14N	Resistant (High)	Resistant (10 pts)	Tolerant (15 pts)	Tolerant (15 pts)
TifNV-High OL	Resistant (High)	Resistant (5 pts)	Tolerant (15 pts)	Tolerant (15 pts)
Tifguard	Resistant (High)	Resistant (10 pts)	Tolerant (15 pts)	Tolerant (15 pts)
AU-NPL 17	None	Resistant (10 pts)	Tolerant (15 pts)	Tolerant (15 pts)

* Risk points for each variety come from the Peanut RX Guide

Planting Dates:

Early Planting Dates: Reduces crop risk to leaf spot diseases and rust

Delayed Planting Dates: Reduces crop risk to TSWV and white mold

In-furrow Pesticide Applications:

- In-furrow applications of Velum at 6.5 to 6.84 fl oz/A or Abound 2SC or Azoxy 2SC at 0.4-0.8 fl oz/1000 row ft to manage Aspergillus and Pythium seed rot, damping-off, and provide early white mold suppression.
- TSWV is vectored by several thrips species and in-furrow applications of phorate (Thimet) and imidacloprid can reduce thrips populations.

Fungicide Selection: There are several fungicides labeled for use on peanut to manage peanut diseases. For the latest fungicide recommendations for peanut diseases, see the ACES Peanut IPM Guide, IPM-0360. Also, please use the Peanut RX Guide to help determine your field's risk for peanut diseases and adjust your fungicide spray programs accordingly.

Convoy, 20-32 fl oz	---	+	---
Custodia, 15.5 fl oz	+	+	---
Lucento, 3-5.5 fl oz	+	+	+
Miravis, 3.4 fl oz	+	+	---
Provost Silver, 11-13 fl oz	+	+	+
Provysol, 2.5-7 fl oz	+	+	---
Umbra*, 12-38 fl oz	+	+	---
Elatus, 7.3-9.5 oz	+	+	+
Excalia, 2-4 fl oz	+	+	---

* Tank Mix with Chlorothalonil

Nematicide Recommendations: Nematicides are an important tool but should only be applied where you need them. In areas with high RKN pressure, producers that use resistant varieties will not need to use a nematicide. In fields with low-to-moderate populations, producers can still plant a susceptible variety, but should consider using a nematicide such as Velum, Propulse, Ag Logic, Vydate-CLV, and Telone II.

For more information, you can contact me via email at ascherer@auburn.edu or call 334-844-5074.

Agronomic Research

Kris Balkcom, Assistant Professor and Extension Soil Scientist

Seed Issues

The seed quality for the 2022 crop looks to be excellent. Hopefully, growers will not have any issues with their peanut stands. Several different seed treatments were looked at in both 2021 and 2022. The new seed treatment Rancona was tested and compared to our traditional treatment Dynasty. The results found that in the early planting, as well as the late planting, the Rancona, with the addition of Abound in-furrow, outperformed Dynasty alone in 2021. Differences between treatments were not observed in 2022. This was probably due to the later planting date. The conditions were not as harsh on the seed, and did not present an issue. In addition, the ploy spray on treatment was compared to the traditional powder treatment. Both treatments yielded statistically the same. Therefore, the new poly coated treatment did not have any negative effects on germination or emergence of the seed.

Seeding Rates

There is a saying that higher seeding rates lead to higher yields. The recommendation is to plant 6 seeds/foot of quality seed. This population should allow growers to reach the recommended plant stand of 4 plants/foot for maximum yields. Increasing seeding rates has been researched for the past two years. These seeding rates have varied from 3.5-10 seed/foot. The results for both years have showed the 10 seed/foot had the highest numerical yield, but statistically was no different from the 3.5-6 seed/foot. Therefore, with good quality seed, there is no benefit to planting more than the 6 seed/foot.

Twin Row versus Single Row

Research has been performed on twin rows compared to single rows since growers started planting Georgia Greens back in the 90s due to the variety's small vine size. Growers continued to plant twin rows and maintained a respectable 7-10% yield increase once they changed to Ga O6G. Only over the past few years has the benefit been hit or miss, and has not maintained the significant yield increase for twin rows. Some varieties do show benefit to twin over single. Current research focuses on GaO6G because it is the variety still planted on the majority of the acres in the state. It is the variety that did show a significant benefit to being planted in twin rows before, but recently it does not. One may ask how is this possible? What changed for this to not be as big a benefit? First, overall yields are higher, which have increased due to production practices and products available for growers to use. At one time, white mold would not be as bad in a field that was twin rows because the plants were spaced out more not allowing the disease to run down the row. However, it would be bad in a field of single rows because the plants were closer together allowing the disease to affect the next plant. Growers have better products and management practices now that reduces the amount of white mold present, which in turn does not give the twin row option as much advantage. In sandy marginal land, growers will still see a more consistent yield benefit to twins, but not as much of an increase in the good land with Ga O6G.

Plant Growth Regulators

We have continued in 2021 to look at Apogee as a plant growth regulator for peanuts which has gained some interest over the past few years. This product is expensive and can certainly slow the growth of the peanut enough to cut the yield if conditions are not adequate for the plant. Producers should use caution when trying this product on their own. However, this product was tested with AUNPL 17 and GA 12Y, which are two growthy varieties. The test looked at different rates in high rainfall areas with good soil in southwest Alabama and some irrigated production in the southeast part of the state. I do not have consistent data to prove that it can increase yields enough to pay for the treatment.

Variety Tests

There are some differences between the variety tests from around the state. The reasons being that there are varying soil types, rainfall, disease pressure, and tomato spotted wilt virus (TSWV) pressure in the different growing regions. Growers have greater access to peanut variety yield data as they begin to research variety selections for 2022. It is important to dig deeper in the data beyond just which variety had the highest yield. Some varieties may be at the top of a trial in one location but not in another. More than likely there is a reason why certain varieties perform differently in different locations. Knowing what kind of disease package a variety has helps you in deciding which variety to plant where or even when to plant a particular variety. Auburn, Georgia, and Florida have posted all their peanut variety data to a website using the software Medius.Re. This software allows producers to compare varieties head-to-head or across multiple locations. This makes it easier to analyze the data for Alabama and surrounding states.

GA 12Y has been a consistent producing variety in the southwest region for a few years. This variety has a disease package that can withstand the higher rainfall and delayed harvest timing that fits the area well. GA 12Y is a tough variety to combine and may have a higher percent of loose shelled kernels (LSK) than the other varieties, but it is worth the flexibility that it brings to the table. The top foliage has been mowed over on this variety to help the plant start to release the water from the vines so it could dry faster and help reduce the number of LSK's.

AUNPL-17 is the best consistent high oleic variety from a disease standpoint. AUNPL-17's biggest weakness is when there is a lack of disease pressure in the area you are growing it. This variety performs better when planted early in the season compared the end of the planting window. It can grade is the mid-70s. GA 16HO gives growers another option in the southeast if it is planted on well rotated land with a good fungicide program. Growers will have issues if there is a wet fall and they do not do a good job with their spray schedule.

GA 18RU performed better in 2021 than recent years. It is one that responds to increased management and will falter if not looked after. This peanut will grade in the upper 70s.

FloRun331 is a good yielder, but can be weak on disease and get overtaken with TSWV. There have been some consistently higher numbers of TSWV in FloRun331 the past three years in the southeast region. However, in the central and northern parts of the state where pressure is less, the FloRun331 has performed well during the same growing seasons.

The TifNVHO is a high oleic nematode resistant variety that has been out yielding the previous nematode variety GA 14N for the past couple of years. This is a good variety to plant early due to its virus resistance.

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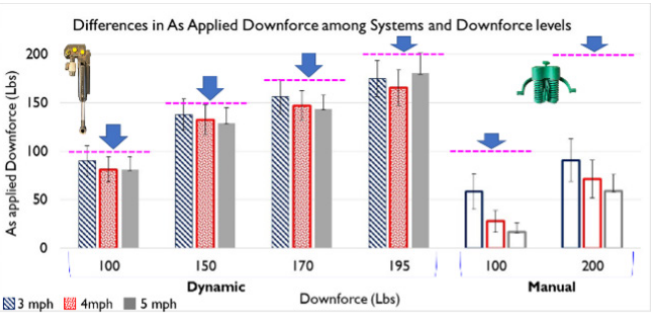
Precision Planting in Peanuts

Dr. Brenda Ortiz, Professor and Extension Precision Ag Specialist

A project to evaluate the effects of planter downforce on peanut seeding depth, growth, yield was conducted at the Gulf Coast Research Station (Fairhope, AL) in 2021. The objectives were to evaluate the impact of applied downforce with the Dynamic (Active) and Manual (Fixed) operational modes on peanut planting. We also evaluated the impact of downforce when peanut is planted at the speeds of 3, 4, and 5 miles per hour (mph). The variety planted was Georgia O6G with a seeding rate of 82,000 seeds/ac, and 2.5 inches seeding depth. A total of 18 treatments were arranged on a randomized complete blocks design with three replications. The Manual mode was tested at the downforce treatments of 100 Lbs, and 200 Lbs. The Dynamic downforce was tested at 100 Lbs, 150 Lbs, 170 Lbs, and 195 Lbs. The soil was a Marlboro very fine sandy loam. A four row John Deere Max Emerge Plus Planter with 38 inches of row spacing was equipped with Precision Planting® load pins and hydraulic downforce system. The dynamic downforce mode regulates downforce according to soil variability and the manual mode applies a uniform downforce based on pre-determined settings by the farmers (T-handle and fixed gauge-wheel load). Data from several variables was collected to evaluate the impact of these planting technologies on cotton production: final downforce per treatment, final seeding depth, emergence (velocity and % emergence), penetrometer reading to evaluate soil compaction, row unit vibration, and final yield. Drone images were also collected daily from the first (06/02/2021) to the last day (06/09/2021) of crop emergence.



Results

The use of the manual downforce system resulted in under application of load which significantly decreased as the travel speed increased (Fig. 1). Downforce loads using the manual mode (mechanical springs) were off target. In contrast, when the dynamic downforce system was used (Delta force), the loads were very close to the target load and were less impacted by travel speed.

Figure 1. Changes in final downforce applied as a result of downforce system type (Dynamic-DeltaForce or Manual-Mechanic) and travel speed.

When the different dynamic downforce levels were compared with respect to their influence on seeding depth, we found that the load of 100 Lbs and 170 Lbs resulted on high seeding depth variability and were off target (below 2.5 inches). Less seeding depth variability was observed on the 150 Lbs and 195 Lbs, with the last one showing seeds at the target depth.

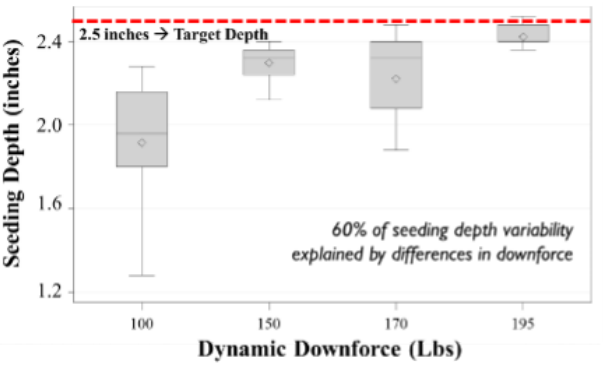
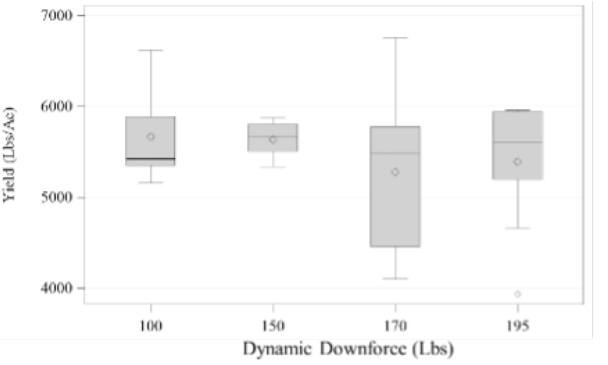


Figure 2. Box plots showing changes in final seeding depth as a result of dynamic downforce levels applied.

The impact of downforce levels on final peanut yield are shown on Fig. 3. As downforce load increased, peanut yield decreased as well as yield variability. The treatment with less yield variability was 150 Lbs.

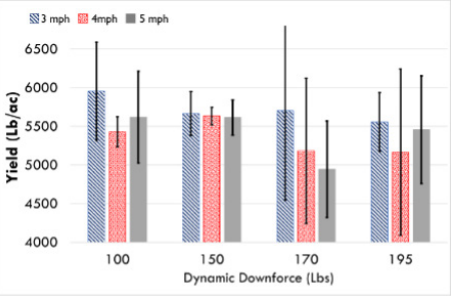


The combination of travel speed and downforce load influenced final peanut yield (Fig. 4). The treatment of 170 Lbs downforce load was severely impacted by changes on travel speed. The greatest negative impact of travel speed on peanut yield was observed when 170 Lbs of downforce were used. In contrast, the least impact of travel speed was observed when 150 Lbs of downforce was used.

Figure 3. Impact of downforce load on peanut field and yield variability.

Figure 4. Impact of downforce load and travel speed on peanut field and yield variability.

The results of this study showed the positive impact that new technologies on planters might have on peanut planting, growth, and final yield. Results also show that farmers should be aware of the impact of planter downforce on final seeding depth and yield before selecting a downforce load.



All the drone images collected during the 2021 are currently under analysis to develop models that can help on automation of identification of planting gaps with replanting purposes. During all 2022, additional analyses of all the data collected in 2021 will be conducted. Results of that work will be presented during the APRES conference in 2022.

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