UNIVERSITY OF GEORGIA EXTENSION

UGA PEANUT PRODUCTION

2020 Quick Reference Guide

ugapeanutteam.org

CULTIVAR SELECTION TIPS

W. Scott Monfort, Extension Peanut Agronomist

The cultivars commercially available this year are: Georgia-06G, Georgia-14N, Georgia-12Y, Georgia-09B, Tifguard, TUFRunnerTM '297'and TUFRunnerTM '511' (See descriptions below). There will be limited acres of TIFNV-High O/L, Georgia-16HO, FloRunTM '331', AUNPL 17. Georgia-18RU seed will be very limited. Like the last few years, a majority of the peanut acreage produced for seed was planted in Georgia-06G.

Maturity range is also an important attribute to consider while selecting a cultivar. Georgia-06G, Georgia-16HO, TifNV-High O/L, Tifguard, and AUNPL-17 have what we call the "normal" or medium maturity range of approximately 135-145 days after planting. Georgia-09B is typically 0 to 5 days earlier than Georgia-06G. Georgia-13M, Georgia-12Y, Florida-07, TUFRunnerTM '511', FloRun TM 331, all mature about 5-14 days later than Georgia-06G. Georgia-14 is a later maturing cultivar ranging 10 to 21 days longer in maturity than Georgia-06G.

CULTIVARS – CURRENTLY AVAILABLE

Georgia-06G is a high yielding, runner-type cultivar. Georgia-06G has a large sized seed and displays a medium maturity pattern. This cultivar was released in 2006. Georgia-06G has a high level of TSWV resistance and good yield potential in a wide range of conditions.

Georgia-09B is a high-oleic, medium maturing, medium seed size, runner-type cultivar. This cultivar was released in 2009. Georgia-09B has an intermediate runner growth habit with a high resistance to TSWV.

Georgia-12Y is a high yielding, medium-late maturing, runner-type cultivar with a medium sized seed. This cultivar was released in 2012. It is also TSWV resistant and white mold resistant. Due to later maturity, Georgia-12Y is less suitable for later planting dates (after May 15). Susceptible to Rhizoctonia Limb Rot. **Susceptible to Rhizoctonia Limb Rot.**

Georgia-13M is a high-oleic, runner-type cultivar with a medium-late maturity and a small sized seed. This cultivar was released in 2013. Georgia-13M is resistant to TSWV. **Very Susceptible to Leafspot.**

Georgia-14N is a high-yielding, high-oleic, runner-type cultivar. Georgia-14N is a medium- late maturing cultivar with a small sized seed. This cultivar was released in 2014. Georgia-14N is TSWV resistant and also a high level of resistant to the peanut root-Knot ***(Meloidogyne arenaria)*** nematode. Due to later maturity, Georgia-14N is less suitable for later planting dates (after May 15).

Tifguard has a high level of resistance to peanut root-knot nematode. Tifguard has good yield and grade potential, especially in fields where root-knot **nematode** is at damaging levels. It offers good resistance to TSWV and is medium maturity.

TUFRunner™ 511 is a medium maturing, high-oleic, large seeded, runner-type cultivar. This cultivar was released in 2013. TUFRunner '511' has good resistance to white mold and moderate resistance to TSWV. **Very Susceptible to Leafspot.**

TUFRunner™ 297 is a medium maturing, high-oleic, extra-large seeded, runner-type cultivar. This cultivar was was released in 2014. TUFRunner '297' has very good resistance to white mold, good resistance to TSWV but is susceptible to leaf spot.

CULTIVARS - NEW RELEASES

TifNV-High O/L is a high-yielding, high-oleic, cultivar with a high level of peanut root-knot nematode resistance. It is a large seeded, medium maturing, runner-type cultivar with excellent resistance to TSWV. TifNV-High O/L was released in 2014.

Georgia-16HO is a new high-yielding, high-oleic, TSWV-resistant, large-seeded, runner-type peanut cultivar that was released in 2016. Georgia-16HO combines TSWV-resistance with the high-oleic trait for longer shelf-life and improved oil quality. Limited Commercial Seed Available.

AUNPL-17 new high-yielding, high-oleic, TSWV-resistant, runner-type peanut cultivar that was released in 2017. Very Limited Commercial Seed Available.

FloRun™ 331 is a new high yielding, medium maturity, high oleic runner type peanut with resistance to TSWV, White Mold, and Leaf spots.

Georgia-18RU is a new high-yielding, high-grading, normal-oleic, tomato spotted wilt virus (TSWV) resistant, leaf-scorch resistant, runner-type peanut variety.

CULTIVAR PERFORMANCE IN ON-FARM TRIALS IN 2019

CULTIVAR	AVERAGE YIELD	AVERAGE GRADE	TOTAL NUMBER OF ON-FARM TRIALS
GA-06G	6552	75.6	9
GA-16HO	6390	75.2	9
GA-18RU	6522	77.7	9
FloRun™ 331	6206	73.3	9
AUNPL-17	6157	72.62	7

PLANTING TIPS

Scott Tubbs, Cropping Systems Agronomist

Planting Date: The ideal planting window is between late April and late May in regards to yield potential. A good peanut crop can be grown outside of this planting window, although, the risk of reduced yield is greater because of the weather and risk of disease problems. Please keep these points in mind before and as you plant.

- **Planter Maintenance** – Clean seed tubes, metering units, vacuum system, inoculant tubes, insecticide hoppers and tubes.
  - Calibrate liquid and dry applicators (inoculant, insecticide, herbicide, etc.)
  - Check and replace worn parts that may affect seed placement.
  - Make sure seed meters are applying correct amount of seed.
- **Soil Temperature** – The soil temperature at the 4" depth needs to be greater than 68 Degrees F for 3 consecutive days without risk of a cold front after planting.
- **Tractor/Planter Speed** – Plant at appropriate speeds to allow for more precise placement of seed. As speed increases, planter efficiency and number of seed dropped in the furrow both decrease. This leads to increased gaps between plants which increases TSWV risk, especially if you plant before May 10.
- **Seeding Rate** – To reduce the impact of TSWV, growers need to plant enough seed to provide at least 4 plants/ft of row. Therefore, seeding rates of 6 seed/ft on singles and 6 to 7 combined seed/ft on twins (3 to 3.5 seed/ft per twin furrow) are recommended. Seeding rates also need to be adjusted for % germ of the seed being planted to ensure you have the desired plant population.
- **Seed Depth** – Check your planter in each field for adequate down pressure to ensure ideal planting depth. Seed depth is typically 2.0 to 2.5" deep. You can plant shallower with good moisture but risk losing moisture before germination and injury from Valor herbicide is increased. Peanut can emerge from depths up to 3" as long as the seed has good germ and vigor.
- **Soil Moisture** – Planting peanut in subpar moisture can result in poor germination and erratic emergence causing less than optimum plant population and increased risk of TSWV.
  - Peanut seed is too expensive to plant in dry conditions.
  - Irrigated fields –planting in dry and hot conditions followed by irrigation with cold water can shock the seed and cause erratic emergence. Irrigate 1/3 to 1/2" and then plant.
- **Pre-Plant Herbicides and Irrigation** – Water pre-plant/at-plant herbicides into the soil before peanut emerge to improve weed control.
- **TSWV Risk** – To reduce TSWV risk on peanut - plant after May 10, apply phorate for thrips control, and use twin row configuration
- **Inoculants** – apply inoculants in fields that have been out of peanut for more than 5 years. However, it's a good practice to apply inoculants each year, especially following years of extreme weather like prolonged hot and/or dry periods, or extended water-logged soils.

Peanut is a legume that fulfills its own nitrogen (N) requirement through symbiosis with specific Rhizobium soil bacteria (called Bradyrhizobia). These soil bacteria penetrate the root hairs, forming nodules. The bacteria allow the peanut plant to convert atmospheric N to a form utilized by the plant.

PLANT GROWTH REGULATORS

Scott Monfort, Extension Peanut Agronomist

- Prohexadione calcium (PC) is the only plant growth regulator currently registered for use on peanuts. It is sold as Apogee ® or Kudos®, and is formulated as a 27.5% wettable granules. When used properly, PC treated peanut vines are shorter and more erect allowing for increased efficiency in the digging and inversion process. Unfortunately, yield increases have been erratic and often insignificant on runner type peanut due to slower growth habit compared to Virginia type peanut.
- PC should be applied when 50% of lateral vines from adjacent rows are touching. Sequential applications of 7.2 ounces per acre followed by 7.2 ounces per acre spaced two to three weeks apart are recommended for **Virginia type peanuts.** Based on recent UGA research trials, **the labeled rate of 7.25 oz per acre (two application) has shown some negative impacts on yield and grade on Runners type peanuts.** However, reduced rates of 3.63 oz to 5.44 oz rate applied twice has shown positive yield increases while continuing to manage vine growth similarly to the 7.25 oz/per acre rate. There are a few concerns regarding the use of PC that need to be considered.
  - The use of PC is only recommended on irrigated acres where vines growth is excessive
    - Use of PC in non-irrigated or in irrigated fields where vine growth is not an issue will lead to stunted growth and potential yield loss.
  - **Application timing is crucial!**
    - 1st application = when greater than 50% lateral vines are touching in the row middles (Not at 50% Lapped—this will be too early) (See Photos)
    - 2nd application = 14 to 21 days after 1st application
  - Include COC (1 quart/acre) and UAN (1 pint/acre) or AMS with PC to help with plant uptake and consistency of performance.
  - PC requires eight hours for absorption by the peanut foliage to be effective.
  - PC is not recommended on plants that are under stress due to lack of moisture, disease pressure, or other stress conditions.

50% LAP - Do Not Apply

50% Lateral Vines Touching - Apply

Image 1&2. Timing of initial application of PC on peanuts where 50% of lateral vines are touching in row middles.

Tank-Mix Considerations

- Based on communication with BASF and others, PC has been shown to be compatible with many of the fungicides and insecticides growers utilize in peanut. The only problem is there are thousands of chemical combinations used in peanut each year. The only true way to determine if a select mixture is compatible is to do a compatibility test. Growers need to remember to include COC and UAN or AMS with PC to help with plant uptake and consistency of performance. This could affect compatibility with other products or cause increased burn on peanut.

INOCULANT REMINDERS

Scott Tubbs, Cropping Systems Agronomist

Handling

- Store in a cool, dry place shaded from direct sunlight until used.
- Use fresh inoculant of the proper strain.
- Do not let unused inoculant remain in hoppers for extended time.
  - If liquid inoculant sits in tank overnight, add a fresh batch before planting.
- Fungicide seed treatment may be detrimental to adherence of powder inoculants.
- Shallow planting may result in the loss of bacteria due to hot, dry soils.
- Prepare well-drained fields to reduce risk of water-logging.
- If using a liquid inoculant, apply with chlorine-free water to avoid killing the bacteria using at least 5 gal/A of water.
- If a heavy rain occurs shortly after planting, a liquid inoculant may be diluted or carried away from the seed, reducing efficacy.
- Nodulation is delayed or reduced in the presence of excess soil N.
- Adequate soil levels of Ca, P, and K aid in Bradyrhizobia survival.
- Follow all label directions when applying pesticides and inoculants as mixes.
- Deliver product at labeled rates (1.0 fl oz. per 1,000 linear row feet for most). Twin rows use same furrow rate, which doubles total quantity applied per acre compared to a single row planting.
- Addition of biological enhancement should be used with caution and may have an adverse effect on viability of the inoculant.

Nitrogen deficiency is occasionally a problem on peanuts. This could be due to a failure to artificially inoculate peanuts when needed.

- In extreme cases of poor nodulation, it may be necessary to apply N fertilizer. If you note N deficiency, apply 60 lb N/A when plant is 40 to 60 days old. A granular form (such as ammonium sulfate) is recommended.

Benefits

- Fertilizer savings - N-fixing ability replaces the need to apply N fertilizers.
- Residual soil N – 50 to 100 lb N/A may be added to the soil as a result of growing an effectively nodulated peanut crop.
- Benefit to rotated crops - Will provide subsequent crops with available N, enhancing yield and reducing fertilizer costs of the following crop.
- Improved soil conditions - legumes decompose rapidly, leaving organic matter in the soil which improves its physical, chemical, and biological condition.

PEANUT CROP ROTATIONS

Scott Tubbs, Cropping Systems Agronomist

Fluctuations in peanut acreage have been extreme in recent years. This has ranged from a 90 year low (430,000 acres in 2013) to a 25 year high (840,000 acres in 2017) just in the last 6 growing seasons. Acreage has been more consistent in the last 3 years, but consistently high (30% higher than the 20 year average of 600,000 acres). This has put a strain on maintaining recommended crop rotations for peanut.

Research from Tifton crop rotation experiments demonstrate the potential yield effect on peanut after various crop rotations:

2013 TIFTON	2014 TIFTON
Continuous peanut = 2671 lbs/A	Continuous peanut = 3507 lbs/A
Average of 2 YR rotations = 4588 lbs/A	Average of 2 YR rotations = 5333 lbs/A
Average of 3 YR rotations = 4836 lbs/A	Average of 3 YR rotations = 6006 lbs/A
Average of 4 YR rotations = 4904 lbs/A	Average of 4 YR rotations = 5970 lbs/A

PEANUT SEED SIZE

VARIETY	SEED WEIGHT g/seed	SEED COUNT seed/lb	PLANTED, 5 SEED/FT. lbs/A	PLANTED, 6 SEED/FT. lbs/A	PLANTED, 7 SEED/FT. lbs/A
Large Seed Size*					
°TUFRunner™ '297'	0.72	628	115.6	142	165
Georgia-06G	0.70	653	111.2	138	161
Tifguard^	0.69	654	111.0	135	158
°TUFRunner™ '511'	0.69	661	109.8	137	160
°TifNV-High O/L^	0.69	662	109.7	135	158
°Georgia-16HO∞	0.67	675	107.5	134	156
Georgia-07W	0.65	698	104.0	130	152
AUNPL-17▪	0.65	701	103.6	127	148
Medium Seed Size*					
Georgia-18RU	0.64	711	102.2	126	147
Georgia Greener	0.63	726	100.0	126	147
°Georgia-09B	0.62	733	99.0	124	145
Georgia-12Y	0.62	734	99.0	123	143
FloRun '331'▪	0.62	738	98.4		
Small Seed Size*					
Georgia Green§	0.59	769	94.0	113.0	132.0
°Georgia-14N^	0.56	804	90.3	108.4	126.5
°Georgia-13M	0.53	854	85.0	102.0	119.0

** There is no official standard to define the classifications of "Large, Medium, or Small" for runner peanuts. Category limits are not an official classification.*
°Indicates a high-oleic variety. ^Denotes resistance to the Peanut Root-Knot Nematode (Meloidogyne arenaria). ∞Data only available for 2015-2016. §Data from 2011-2013.
▪Data only available for 2017-2018. Data in table is the average of UGA Statewide Variety Testing irrigated trials at 3 locations from 2016-2018.

PEANUT FERTILITY CHECKLIST

Glen Harris, Extension Soils Specialist

<table>
<tr><th>COMPONENT</th><th>SOIL TEST SUFFICIENCY LEVEL</th><th>RECOMMENDATIONS/COMMENTS</th></tr>
<tr><td>pH</td><td>6.0 – 6.5</td><td>– Below 6.0 risks zinc and aluminum toxicity
– Above 6.5 risks manganese deficiency (refer to charts in UGA Peanut Production Guide)
– Grid sampling and variable rate liming is recommended
– Dolomitic lime is recommended over calcitic lime unless soil test Mg is very high (>150 lbs/A)</td></tr>
<tr><td>Nitrogen (N)</td><td>Soil Not Tested</td><td>– Consider using a commercial inoculant, preferably liquid, every field, every year but especially if out of peanut production for 3 years or more</td></tr>
<tr><td>Sulfur (S)</td><td>Soil Not Tested</td><td>– Sulfur is not a limiting factor on Coastal Plain soils due to Deep tap root, gypsum use and subsoil sulfur</td></tr>
<tr><td>Phosphorous (P)</td><td>30 lb/A

Sufficiency level is lower than for other crops since peanut is a deep tap rooted crop and good scavenger of P</td><td>– If soil test P is maintained at good levels for other crops in rotation then P fertilizer should not be needed. However, if soil test P is considered low enough, P fertilizer will be recommended and should be applied
<table>
<tr><th>Soil Test P (lb/A)</th><th>P2O5 Recommended (lb/A)</th></tr>
<tr><td>< 15</td><td>80</td></tr>
<tr><td>16-30</td><td>50</td></tr>
<tr><td>31-60</td><td>0</td></tr>
<tr><td>>60</td><td>0</td></tr>
</table></td></tr>
<tr><td>Potassium (K)</td><td>60 lb/A

Sufficiency level is lower than for other crops since peanut is a deep tap rooted crop and good scavenger of K.</td><td>– If soil test K is maintained at good levels for other crops in rotation then K fertilizer should not be needed. However, if soil test K is considered low enough, K fertilizer will be recommended and should be applied
<table>
<tr><th>Soil Test K (lb/A)</th><th>K20 Recommended (lb/A)</th></tr>
<tr><td>< 30</td><td>80</td></tr>
<tr><td>31-60</td><td>50</td></tr>
<tr><td>61-150</td><td>0</td></tr>
<tr><td>>150</td><td>0</td></tr>
</table>
– Excess K in the pegging zone (top 4 inches of soil) can interfere with calcium uptake by pods and cause pops</td></tr>
<tr><td>Calcium (Ca)</td><td>500 lb/a and Ca:K of at least 3:1 in pegging zone</td><td>– If EITHER of these levels are not met, then apply 1000 lb/a gypsum at early bloom to runner-type peanuts
– All peanuts to be saved for seed should receive 1000 lb/a gypsum at early bloom even if these levels are met
– All Virginia-type peanuts should receive 2000 lb/a gypsum at early bloom even if these levels are met</td></tr>
<tr><td>Magnesium (Mg)</td><td>60 lb/A</td><td>– Peanut is a good scavenger of Mg
– This sufficiency range, which is used for other crops in rotation, should be more than adequate
– Dolomitic lime is the most economical source of Mg</td></tr>
<tr><td>Boron (B)</td><td>Soil Not Tested</td><td>– 0.5 lb B/A is recommended, preferably split in 2 applications of 0.25 lb B/A each with early fungicide sprays
– It takes 1.25 lb/a Solubor to get 0.25 lb B/A and 1 quart (32 oz) of 10 % Liquid Boron to get 0.25 lb B/A
– Excessive foliar boron may be toxic to peanuts so do not exceed 0.5 lb B/A for a seasonal total</td></tr>
<tr><td>Manganese (Mn)</td><td>pH Soil Mn (lb/A)
6.0 6
6.5 11
7.0 17</td><td>– The higher soil pH is maintained the higher the soil test manganese needs to be maintained to avoid manganese deficiency on peanut
– Symptom of deficiency is interveinal chlorosis, often late in the season on terminal growth
– If deficiency is confirmed by tissue testing apply 0.5 lb Mn/A using manganese sulfate
– Yield reductions are more likely if the symptoms occur early in the growing season so early detection and multiple sprays may be required</td></tr>
<tr><td>Zinc (Zn)</td><td>2-8 lb/A</td><td>– Zinc deficiency is rare in peanut
– Zinc toxicity often occurs when soil test zinc levels are high and soil pH is low
– Zinc toxicity is often seen on new ground (low pH), old pecan orchards and old barn sites that had galvanized roofs. In order to avoid zinc toxicity, maintain soil pH at or above the levels below:
<table>
<tr><th>Soil Test Zn (lb/A)</th><th>Min. Soil pH</th></tr>
<tr><td>20</td><td>6.0</td></tr>
<tr><td>30</td><td>6.1</td></tr>
<tr><td>40</td><td>6.2</td></tr>
<tr><td>50</td><td>6.3</td></tr>
<tr><td>60</td><td>6.4</td></tr>
<tr><td>70</td><td>6.5</td></tr>
<tr><td>>70</td><td>Call Me</td></tr>
</table></td></tr>
<tr><td>Copper (Cu), Iron (Fe), Molybdenum (Mo) and Chlorine (Cl)</td><td>Soil Not Tested</td><td>– No documented cases of deficiencies of these micronutrients in Coastal Plain peanut production
– Tissue test levels of copper often appear low, yield response to foliar copper sprays have not resulted in increased yields
– Even though Mo is important for N fixation, no yield advantage has been documented from foliar applied Mo. Coastal Plain soils are high in iron therefore deficiency of this element are unheard of</td></tr>
</table>

INSECT MANAGEMENT

Mark Abney, Research and Extension Entomologist

Insects and mites can cause severe economic loss, but not every field will be infested with damaging populations every year. Pest species also vary from year to year and from field to field within a year. Understanding the risk factors that contribute to pest outbreaks and weekly scouting are the foundations of a successful insect management program. Below are some of the most common and/or economically important arthropod pests of peanut, conditions that favor their development, and scouting tips.

- **Thrips:**

  - ***Favorable Conditions:*** Thrips occur in most peanut fields, but early planting, conventional tillage, single row pattern, and no at-plant insecticide increase the risk of injury.
  - ***Scouting Tips:*** Look for adult and immature thrips in the first three to four weeks after emergence. Immature thrips are usually found in folded terminal leaflets.
- **Lesser Cornstalk Borer (LCB):**

  - ***Favorable Conditions:*** Hot, dry, well drained sandy soils, and open crop canopy
  - ***Scouting Tips:*** Look for wilted stems and silk tubes, remove plants and check tap root, pods, and stems for feeding injury and larvae. Moths are a good sign of LCB infestation. Plants in a "skip" or at the ends of rows with bare soil around them will usually be attacked first.
- **Three Cornered Alfalfa Hopper (TCAH):**

  - ***Favorable Conditions:*** TCAH can be found in most fields, but densities tend to be highest when soil moisture is adequate for optimum peanut growth. Low numbers of adults can be found in fields in late spring, but populations increase as the summer progresses.
  - ***Scouting Tips:*** Adults can be seen flying when disturbed; they are also easily collected in sweep nets. Nymphs are responsible for much of the injury to peanut, but they are difficult to see. Beat sheet sampling or careful examination of vines is required to find nymphs. Decisions to treat TCAH populations should consider the relative abundance of adults, nymphs, and stem injury and the risk of flaring secondary pests.
- **Southern Corn Rootworm & Banded Cucumber Beetle (RW):**

  - ***Favorable Conditions:*** Heavy-textured soils with good moisture increase risk. Larvae cannot survive in dry soil.
  - ***Scouting Tips:*** RW larvae live entirely below ground. Dig adjacent to peanut rows or remove plants to examine pods for damage and check the soil for larvae.
- **Potato Leafhopper (PLH):**

  - ***Favorable Conditions:*** PLH is found sporadically in peanut fields every year. Infestations often begin along field margins.
  - ***Scouting Tips:*** Adults can be seen flying when disturbed; nymphs are similar in appearance to adults but cannot fly. Look for hopperburn (V-shaped yellowing of leaflet tips), especially near field edges. Hopperburn will persist after the insects have left the field, so it is important to determine if infestations are active before making a treatment decision.
- **Velvetbean Caterpillar (VBC):**

  - ***Favorable Conditions:*** VBC does not overwinter in Georgia, but it migrates into the state each year. The first moths are often detected in June in South Georgia, but infestations do not typically reach threshold densities until later in the summer.
  - ***Scouting Tips:*** Scouting for caterpillars is best accomplished by vigorously shaking vines to dislodge the insects onto the ground or a beat sheet. Sampling three feet of row at ten locations is sufficient for a typical 40 to 80 acre field. All caterpillars should be identified and counted and their size noted.
- **Two Spotted Spider Mite (TSSM):**

  - ***Favorable Conditions:*** TSSM infestations are most likely to develop when conditions are hot and dry. In out-break years, non-irrigated corners of irrigated fields are often severely injured while the irrigated portion of the field has few or no mites. Areas near field margins, especially near dirt roads, are usually infested first. Mowing infested weedy vegetation adjacent to fields can result in mites migrating to the crop in large numbers.
  - ***Scouting Tips:*** Check field edges. Small patches of yellowing peanuts are an early indication of infestations. At low densities, mites are difficult to see and are usually found on the lower surface of leaves. Early detection is important.

2020 PEANUT WEED CONTROL UPDATE

Eric Prostko, Extension Weed Specialist

Important Things to Consider:

1. Start clean using a combination of tillage, cover crops, and/or herbicides
2. Use 2-4 residual herbicides in the system, depending upon the need and/or weed
3. Cracking or early-postemergence applications of paraquat may not always be needed in peanut fields that started off weed-free and where at-planting residual herbicides (Dual Magnum, Prowl, Sonalan, Strongarm, and Valor) were activated with timely rainfall or irrigation
4. Make timely postemergence applications (weeds ≤ 3", **not the average**)
5. Hand-remove weed escapes before seed is produced

HERBICIDE PROGRAMS FOR PEANUT IN GEORGIA

		TIMING				
System	**Tillage**	**Preplant Burndown[a]**	**PPI**	**PRE**	**EPOST (~10-20 DAP[b])**	**POST (~30-45 DAP)**
Non-Irrigated (Dryland)	strip-till[c]	Glyphosate or Paraquat + 2,4-D		*No Rain in 7-10 DAP:* Paraquat + Prowl	Paraquat + Storm + Dual Magnum or Warrant or Zidua	*ALS Resistance:* Cobra or Ultra Blazer + (Dual Magnum or Warrant or Zidua) + 2,4-DB
				Rain in 7-10 DAP: Paraquat + Prowl + Valor		
	conventional		Prowl or Sonalan	No PRE if rain is not expected in 7-10 DAP	Paraquat + Storm + Dual Magnum or Warrant or Zidua	*No ALS Resistance:* Cadre[d] + (Dual Magnum or Warrant or Zidua) + 2,4-DB
				Rain in 7-10 DAP: Valor		***A 4-way tank-mixture can be used if required (Cadre + Cobra or Ultra Blazer + 2,4-DB + Dual Magnum or Warrant or Zidua)*
Irrigated	strip-till[c]	Glyphosate or Paraquat + 2,4-D		Paraquat + Prowl + Valor + Strongarm[d]		
	conventional			Prowl or Sonalan + Valor + Strongarm[d]		

[a]Apply at least 7 days before planting. If there will be a long delay between the burndown application and planting (>10 days), consider adding a residual herbicide (Valor or Dual Magnum or Warrant) to the burndown treatment.

[b]DAP = days after planting.

[c]Annual grass control in strip-tillage systems is often more difficult thus additional applications of a postemergence grass herbicide (i.e. Fusilade, Poast, and Select) may be needed.

*[d]Before using Cadre and/or Strongarm, rotational crop restrictions **must** be considered.*

***SPECIAL NOTE: Dual Magnum and Warrant are in the same herbicide family and have the same mode of action (inhibit very long chain fatty acids). Zidua is not in the same herbicide family but has the same mode of action. Multiple applications (> 2) of these herbicides in a single year should be avoided to prevent or delay the evolution of resistance. These herbicides have no postemergence activity.*

How Do The High-Yielding Georgia Peanut Growers Manage Weeds?

In 2018, 15 growers in the Georgia Peanut Achievement Club produced an average peanut yield of **6118 lbs/A** (state average was 4450 lbs/A). Survey results from these high yield growers indicated the following production practices were used to help manage weeds on their farms:

- Irrigated: 100%
- Bottom plow: 73%
- Twin rows: 93%
- Valor = 80%; Cadre = 80%; Sonalan = 60%; 2,4-DB = 53%; Strongarm = 40%; Prowl = 33%; and Dual = 27%

Paraquat Training

Growers are reminded that certified applicators must successfully complete an EPA-approved training program before mixing, loading, and/or applying paraquat. The training provides important information about paraquat's toxicity, new label requirements/restrictions, and the consequences of misuse. For more information about this training, refer to the following web-site:
www.epa.gov/pesticide-worker-safety/paraquat-dichloride-training-certified-applicators

Peanut Variety Response to Valor

A field trial conducted in 2019 indicated than GA-18RU and GA-HO were not more susceptible to Valor injury than GA-06G. In this particular variety trial, yield response was as follows: GA-18RU > GA-06G = GA-HO.

IMPORTANT LINKS

UGA Peanut Team Website – ugapeanutteam.org
Climate Outlook – ***Pam Knox, Agricultural Climatologist***
https://site.extension.uga.edu/climate
Agricultural Economics – ***Adam Rabinowitz and Amanda Smith, Extension Economists***
Website -- http://agecon.uga.edu/extension.html
Budgets -- http://agecon.uga.edu/extension/budgets.html
Ag Economics Blog -- https://site.extension.uga.edu/aaecext/

WATER UTILIZATION AND IRRIGATION MANAGEMENT

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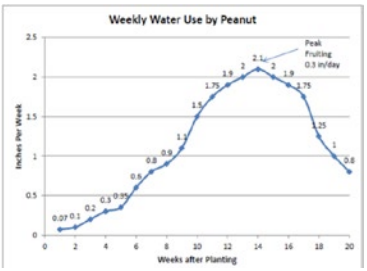
Weather Conditions



- Weather conditions from year to year are variable, can be difficult to plan for, and have a large impact on crop growth, development, and yield. Farmers must find ways to adapt to changing conditions and manage the crop to these varying conditions. The vast differences between 2014, 2015, 2016, 2017, 2018, and 2019 are prime examples of variable weather conditions. 2014 and 2019 were the only years that could be considered dry, while in excess of 20 inches of rain was received during the growing seasons of 2015-2018. Even though those three years can be considered wet, each year was dynamically different in the average temperatures and rainfall distribution. 2019 was a prime example of a year that was much hotter than average. The majority of the production season was characterized via hot, dry weather, with lower humidity than normal. The UGA Checkbook (Figure 1) is one of the most commonly used methods for irrigation scheduling. However, caution should be exercised when implementing the Checkbook as it was developed based on historical averages, thus, is not an exact fit for years that are either wetter or drier than normal as it will over and under predict water need in those years respectively.
- The total estimated water requirement based on the UGA Checkbook for peanuts is 23 inches. It was developed based on historical evapotranspiration estimations over a number of years and is a very conservative method, (meaning it will typically "over-water") when compared to the actual crop requirement. However, in most cases the penalty for under-irrigating is commonly more detrimental than the penalty for over-irrigating. Irrigation research over the past three years suggests that the UGA Checkbook over-irrigates peanuts, especially in years with high rainfall amounts, causing a yield penalty, suggesting that its amounts be reduced (See peanut update from 2016). A new UGA Peanut Checkbook method has been developed and is currently being tested. The new Checkbook will be released publically in the near future.

Irrigation Scheduling

- There are many options available to producers to determine when and how much to irrigate peanuts. Some of these methods include the UGA Checkbook method, the UGA Easypan, online scheduling tools, and soil and/or crop sensors. The UGA Checkbook Method follows Figure 1 from above and it is up to the producer to monitor rainfall, and subtract that amount from the total amount required by the crop for each week. The total amount required minus rainfall would be the crop requirement. The UGA Easypan, (http://extension.uga.edu/publications/detail.cfm?number=B1201) is a simple cheap method to estimate in field evapotranspiration. The above link provides a factsheet with detailed information on construction and use of the UGA Easypan. There are online scheduling tools available, two such tools that work very well in both GA and FL are the USDA's IrrigatorPro (http://irrigatorpro.org/farm/) and University of Florida's PeanutFARM (http://peanutfarm.org/). Both methods use local data to estimate peanut maturity through growing degree day models, track rainfall and evapotranspiration, and estimate irrigation requirements. More advanced irrigation scheduling methods include soil and plant sensors. Two of these sensors for example are capacitance and tensiometic soil moisture sensors (Meter and Watermark are two common of each type), and a plant sensor (SmartField's SmartCrop canopy temperature sensors). There are a wide variety of sensor options that would be easily integrated into a producer's practice. Any method is based on the producer's comfort level with technology and irrigation management.

Irrigation Scheduling Trial at Stripling Irrigation Research Park in Camilla, GA.

Table 1. Mean Results from all varieties tested in 2017.

IRRIGATION SCHEDULING TREATMENT DIFFERENCES				
Irrigation Treatment	**Rainfall (in.)**	**Irrigation Amount (in.)**	**Yield (lbs/ac)**	**IWUE (lbs/in)**
Dryland	24.26	1.00	5875	5875
UGA SSA	24.26	2.85	6396	2244
UGA EasyPan	24.26	4.75	5987	1260
50% Checkbook	24.26	6.75	6262	927
UGA Checkbook	24.26	10.50	5749	547
PeanutFARM	24.26	5.50	5936	1079
IrrigatorPro	24.26	4.00	6260	1565

Clear differences between varieties were present based on irrigation scheduling method for 2017 but data are not presented here due to space limitations. Due to the excessive rainfall during 2017 there were no major differences in yield between the irrigation scheduling treatments. However, there were differences between the amount of irrigation that was applied, and the Irrigation Water Use Efficiency (IWUE). Since there was only irrigation applied to establish a stand and to activate herbicide the dryland had the highest IWUE, this was a high yield for a dryland crop. The two treatments with the lowest IWUE and that had the most irrigation applied to them were the Checkbook and the 50% Checkbook treatments. Both of these treatments show that there was no additional benefit for the irrigation above what was applied by implementing more advanced irrigation scheduling methods. The UGA SSA or WaterMark probe system not only had the highest IWUE but also the highest yield. IrrigatorPro, UGA EasyPan and PeanutFARM, all had respectable yields and IWUE. Each irrigation scheduling method has potential for successful on-farm adoption, but it is up to the producer to make the decision on which method is the best fit for his/hers operation. Each method has associated time and financial costs, but with the proper management the return on investment of the scheduling method can be very short. Additional information about individual variety performance and scheduling method can be obtained through your local county agent.

DISEASE AND NEMATODE MANAGEMENT UPDATE FOR 2020

Bob Kemerait, Extension Plant Pathologist

Critical Points to remember for the new season:

1. Growers should use Peanut Rx to develop strategies to reduce risk to diseases in their peanut crop.
2. Prescription fungicide programs based on Peanut Rx are an effective way to reduce costs of a fungicide program.
3. Critical components of a leaf spot fungicide program are a) variety, b) crop rotation, c) timeliness of fungicide application, and d) selection of fungicide.
4. Critical components of a white mold fungicide program are as for a leaf spot program, but also includes timeliness of irrigation or rainfall, preferably within 12-24 hours of application.
5. Management of nematodes includes a)variety selection, b) crop rotation, and c) selection of nematicides.
6. Products for management of nematodes in 2020 include a) Telone II (4.5-9 gal/A), b) AgLogic (7 lb/A in-furrow, 10lb/A pegging-time), c) Velum Total (18 fl oz/A in-furrow) + Propulse (13.6 fl oz/A pegging-time) and d. Vydate CLV (see label).
7. Lesion nematodes seems to be an emerging problem on peanuts in some areas, especially when high numbers are present in a field and damage occurs to the pegs. Research continues; however use of Propulse or AgLogic at pegging time is likely to be an important management tool.
8. Aspergillus crown rot is an important seedling disease, especially when conditions are hot and dry at planting. Farmer-saved-seed is often at greatest risk. To manage Aspergillus crown rot, a) insure quality of seed, b) insure effective fungicide seed treatment with excellent coverage, c) use in-furrow fungicide such as Abound of Proline, d) manage insects Lesser Cornstalk Borers, and e) irrigate to cool hot soils if possible.
9. Management of white mold can be improved by early-season banded applications of Proline, by timely irrigation after application and by spraying some fungicides at night.
10. Other diseases of importance include Cylindrocladium Black Rot (CBR), Peanut Rust, and Pythium Pod rot and Diplodia Collar Rot, For more information and timely updates, consult you local UGA Extension agent.

Note 1:

Exchange applications: To include systemic activity, chlorothalonil (1.5 pt) on a 14-day spray interval can be replaced with products such as with:

- Chlorothalonil, 1.0 pt + Alto, 5.5 fl ozt
- Chlorothalonil, 1.0 pt + thiophanate methyl, 5 fl oz (no more than two applications)
- Chlorothalonil, 1.0 pt + Domark 230ME, 2.5 fl oz
- Thiophanate methyl, 10 fl oz (no more than one application)
- Aproach Prima, 6.8 fl oz (best used earlier in season)
- Priaxor, 4 fl oz (or 6 fl oz replaces two early applications)
- Absolute, 3.4 fl oz
- Tebuconazole, 7.2 fl oz + chlorothalonil, 1.0 pt (replaces 1.5 pt chlorothalonil and fights white mold)

Older products that can be used for leaf spot control, sometimes mixed with chlrothalonil include sulfur (Microthiol 5lb/A) and mancozeb (Koverall)

Note 2:

- Microthiol Disperss can be tank mixed at a rate of 5 pounds per acre with FRAC 11 (strobilurins) and/or FRAC 3 (triazoles) applications.
- Topsin 4.5 FL, 10 ounces per acre tank mix with Manzate Pro-Stick or Penncozeb 75 DF at 1.5 pounds per acre in either the 105 or 120 DAP applications.

Note 3:

Below are examples of fungicide programs and the list does not include all possible products. Generic azoxystrobin products exist as do many generic formulations of tebuconazole. Further information on all products can be obtained from your local UGA Extension office.

FUNGICIDE APPLICATIONS

Days After Planting	Planting (0)	30	45	60	75	90	105	120
Sipcam Agro		Echo 1.5 pt/A	Echo 1.5 pt/A	Muscle ADV 2.0 pt/A	Muscle ADV 2.0 pt/A	Muscle ADV 2.0 pt/A	Muscle ADV 2.0 pt/A	Echo 1.5 pt/A
Sipcam Agrom		MAZINGA ADV 32 fl oz	MAZINGA ADV 32 fl oz	Elatus 7.3 oz Miravis 3.4 fl oz	Muscle ADV 2.0 pt/A	Elatus 7.3 oz Miravis 3.4 fl oz	Muscle ADV 2.0 pt/A	Echo 1.5 pt/A
Bayer CropScience		chlorathalonil 1.5 pt	Absolute 3.5 fl oz	Elatus 7.3 oz	Provost Silver 13 fl oz	Elatus 7.3 oz	Provost Silver 13 fl oz	chlorathalonil 1.5 pt
Bayer CropScience	Velum Total 18 fl oz in-furrow		Absolute 3.5 fl oz	Elatus 7.3 oz	Provost Silver 13 fl oz	Elatus 7.3 oz	Provost Silver 13 fl oz	chlorathalonil 1.5 pt
Bayer CropScience	Velum Total 18 fl oz in-furrow		chlorathalonil 1.5 pt	Propulse 13.6 fl oz/A	Provost Silver 13 fl oz/A	Non Group 3 White Mold Fungicide	Provost Silver 13 fl oz/A	chlorathalonil 1.5 pt
Nichino BASF			Priaxor 6 fl oz/A	Convoy 32 fl oz chlorothalonil 1.5 pt	Priaxor 8 fl oz	Convoy 32 fl oz chlorothalonil 1.5 pt	chlorothalonil 1.5 pt	chlorothalonil 1.5 pt
Nichino BASF			Priaxor 6 fl oz/A	Umbra 36 fl oz Echo 1.0 pt	Priaxor 8 fl oz/A	Umbra 36 fl oz Echo 1.0 pt	tebuconazole 7.2 fl oz chlorothalonil 1.5 pt	chlorathalonil 1.5 pt
Corteva		Aproach Prima 6.8 fl oz	tebuconazole 7.2 fl oz chlorothalonil 1.5 pt	Fontelis 16 fl oz	Fontelis 16 fl oz	Fontelis 16 fl oz	tebuconazole 7.2 fl oz chlorothalonil 1.5 pt	chlorothalonil 1.5 pt
Corteva		Aproach Prima 6.8 fl oz	Aproach Prima 6.8 fl oz	Fontelis 16 fl oz	Fontelis 16 fl oz	Fontelis 16 fl oz	chlorothalonil 1.5 pt	chlorothalonil 1.5 pt
BASF			Priaxor 6 fl oz	Muscle ADV 2 pt	Priaxor 8 fl oz	Muscle ADV 2 pt	Muscle ADV 2 pt	chlorothalonil 1.5 pt
FMC			LUCENTO 5.5 fl oz	ELATUS 9.0 fl oz	LUCENTO 5.5 fl oz	Convoy 21 fl oz Ech 1.5 pt	tebuconazole 7.2 fl oz chlorothalonil 1.5 pt	chlorothalonil 1.5 pt

ALTERNATIVE FUNGICIDE APPLICATIONS

Days After Planting	Planting (0)	30	51	79	105	120
Syngenta		chlorothalonil 1.0 pt/A Alto 5.5 fl oz/A	Elatus 9.5 oz Miravis 3.4 fl oz	Elatus 9.5 oz Miravis 3.4 fl oz	chlorothalonil 1.5 pt	chlorothalonil 1.5 pt
Syngenta		Elatus 7.3 oz/A	Elatus 7.3 oz Miravis 3.4 fl oz	Elatus 7.3 oz Miravis 3.4 fl oz	chlorothalonil 1.0 pt/A Alto 5.5 fl oz/A	chlorothalonil 1.5 pt

ASSESS DISEASE RISK IN YOUR FIELD AND DEVELOP A PEANUT RX

This worksheet will lead you through the four-step process of determining your disease risk level in order to customize a Peanut Rx™ for your individual field using the reverse side of this worksheet and with the assistance of your Syngenta representative.

For each of the risk index factors, identify which option best describes the situation for your field and add the index value associated with each choice to obtain your overall disease risk value. This worksheet does not contain all of the varieties included in the 2019 Peanut Rx or the notes that accompany each factor. To view the complete 2019 Peanut Rx, visit the University of Georgia peanut website at **www.ugapeanutteam.com.**

PEANUT Rx™

Assess Your Disease Risk

Variety Selection				
Variety[1]	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White Mold	
AU NPL 17[2]	10	15	15	
Bailey[3]	10	25	10	
Florida Fancy[2]	25	20	20	
FloRun™ '331'[2]	15	20	15	
Georgia-06G	10	20	20	
Georgia-07W	10	20	15	
Georgia-09B[2]	20	25	25	
Georgia-12Y[5]	5	15	10	
Georgia-14N[2,4]	5	15	15	
Georgia-16HO[2]	10	25	20	
Georgia-18RU[1]	10	25	20	
Georgia Green	30	20	25	
Sullivan[2]	10	25	15	
Tifguard[4]	10	15	15	
TifNV-HiOL[2,4]	5	15	15	
TUFRunner™ '297'[2]	10	25	20	
TUFRunner™ '511'[2]	20	30	15	

Planting Date				
Peanuts are planted:	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White Mold	Limb Rot
Prior to May 1	30	0	10	0
May 1 to May 10	15	5	5	0
May 11 to May 25	5	10	0	0
May 26 to June 10	10	15	0	5
After June 10	15	15	0	5

Plant Population (final stand, not seeding rate)				
Plant stand:	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White Mold	Limb Rot
Less than 3 plants/ft	25	NA	0	NA
3 to 4 plants/ft (3)	10 (15)	NA	0 (0)	NA
More than 4 plants/ft	5	NA	5	NA

At-plant Insecticide				
Insecticide used	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White Mold	Limb Rot
None	15	5	NA	NA
Other than Thimet® 20G	15	5	NA	NA
Velum Total	15	0	NA	NA
Thimet 20G	5	0	NA	NA

Row Pattern				
Peanuts are planted in:	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White Mold	Limb Rot
Single rows	10	0	5	0
Twin rows	5	0	0	0

Tillage				
Tillage type	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White Mold	Limb Rot
Conventional	15	10	0	0
Reduced	5	0	5	5

Classic® Herbicide				
Classic usage	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White Mold	Limb Rot
Classic applied	5	NA	NA	NA
No Classic applied	0	NA	NA	NA

Crop Rotation (with a non-legume crop)				
Years between peanut crop	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White Mold	Limb Rot
0	NA	25	25	20
1	NA	15	20	15
2	NA	10	10	10
3 or more	NA	5	5	5

Field History				
Have you had a problem controlling these diseases?	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White Mold	Limb Rot
No	NA	0	0	0
Yes	NA	10	15	10

Irrigation				
Does the field receive irrigation?	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White Mold	Limb Rot
No	NA	0	0	0
Yes	NA	10	5	10

[1] Adequate research data is not available for all varieties with regards to all diseases. Additional varieties will be included as data to support the assignment of an index value are available.
[2] High oleic variety
[3] Bailey has increased resistance to *Cylindrocladium* black rot (CBR) compared to other varieties commonly planted in Georgia.
[4] Tifguard, TifNV-HiOL and Georgia 14-N have excellent resistance to the peanut root-knot nematode.
[5] Georgia-12Y appears to have increased risk to Rhizoctonia limb rot and precautions should be taken to protect against this disease.

Develop Your Peanut Rx

Once you have calculated your total risk for each fungal disease, utilize the most conservative fungicide program as your guide for customizing a per-field prescription spray program.

Programs developed through the cooperation of

College of Agricultural & Environmental Sciences
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Calculate Your Severity Points

Fill in the following table to calculate your severity points for each of the four major peanut diseases given the 10 determining factors. Total each column to establish your disease index values.

	Spotted Wilt	Leaf Spot	White Mold	*Rhizoctonia* Limb Rot
Variety				
Planting Date				
Plant Population				
At-plant Insecticide				
Row Pattern				
Tillage				
Classic Herbicide				
Crop Rotation				
Field History				
Irrigation				
Total Index Value				

Interpret Your Risk Total

Point total range for tomato spotted wilt = 35-155.
Point total range for leaf spot = 10-105.
Point total range for white mold = 10-95.
Point total range for Rhizoctonia limb rot = 15-75.

	Spotted Wilt Points	Leaf Spot Points	Soilborne Points	
			White Mold	Limb Rot
High Risk	≥ 115	65-105	55-80	TBD
High Risk for fungal diseases: Growers should always use full fungicide input program in a high-risk situation.				
Moderate Risk	70-110	40-60	30-50	TBD
Medium Risk for fungal diseases: Growers can expect better performance from standard fungicide programs. Reduced fungicide programs in research studies have been successfully implemented when conditions are not favorable for disease spread.				
Low Risk	≤ 65	10-35	10-25	TBD
Low Risk for fungal diseases: These fields are likely to have the least impact from fungal disease. Growers have made the management decisions which offer maximum benefit in reducing the potential for severe disease; these fields are strong candidates for modified disease management programs that require a reduced number of fungicide application.				

When tomato spotted wilt virus incidence is high statewide or in your region, even fields with a low risk level may experience significant losses. Consider the following recommendations to reduce your spotted wilt risk level:

- Use less susceptible varieties
- Adjust your planting date
- Consult the complete Peanut Rx for additional options that may also provide limited benefit

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