THE UNIVERSITY OF GEORGIA
COOPERATIVE EXTENSION
Colleges of Agricultural and Environmental Sciences & Family and Consumer Sciences

2013 PEANUT PRODUCTION UPDATE

Learning for Life

2013 PEANUT PRODUCTION UPDATE

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INTRODUCTION

The University of Georgia Peanut Team is pleased to present the *2013 Peanut Production Update*. The purpose of this publication is to provide peanut producers with new and timely information that can be used to make cost-effective management decisions in the upcoming season. Contact your local county extension agent for additional information, publications, or field problem assistance.

John P. Beasley, Jr., Editor

The University of Georgia Peanut Team

David Adams – Entomology
John Beasley – Agronomics
Bill Branch – Peanut Breeder
Tim Brenneman – Plant Pathology
Albert Culbreath – Plant Pathology
Stanley Fletcher – Economics / Agricultural Policy
Timothy Grey – Weed Science
Glen Harris – Soil Science
Gary Hawkins – Irrigation / Engineering
Corley Holbrook – Peanut Breeder (USDA-ARS)
Yen-Con Hung – Food Science
Bob Kemerait – Plant Pathology
Pam Knox – Agricultural Climatology
Peggy Ozias-Akins – Genetics / Biotechnology
Calvin Perry – Irrigation / Engineering
Eric Prostko – Weed Science
Amanda Smith – Economics
Nathan Smith – Economics
Babu Srinivasin – Entomology / Virology
Katie Stevenson – Plant Pathology
Scott Tubbs – Agronomics / Cropping Systems
George Vellidis – Precision Agriculture / Engineering

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2013 PEANUT OUTLOOK and COST ANALYSIS

Nathan B. Smith and Amanda R. Smith

Peanut Supply and Demand Highlights

- **2012 Largest Acreage Since 2005** – Planted acreage increased 43% to 1.636 million acres in 2012. This is the largest acreage since 2005. The Southeast (AL, FL, GA, MS) increased by 47% to 1,217,000 acres. The Southwest (NM, OK, TX) increased by a third to 182,000 acres. The Virginia-Carolina (NC, SC, VA) area planted 35% more acres to 237,000 acres.

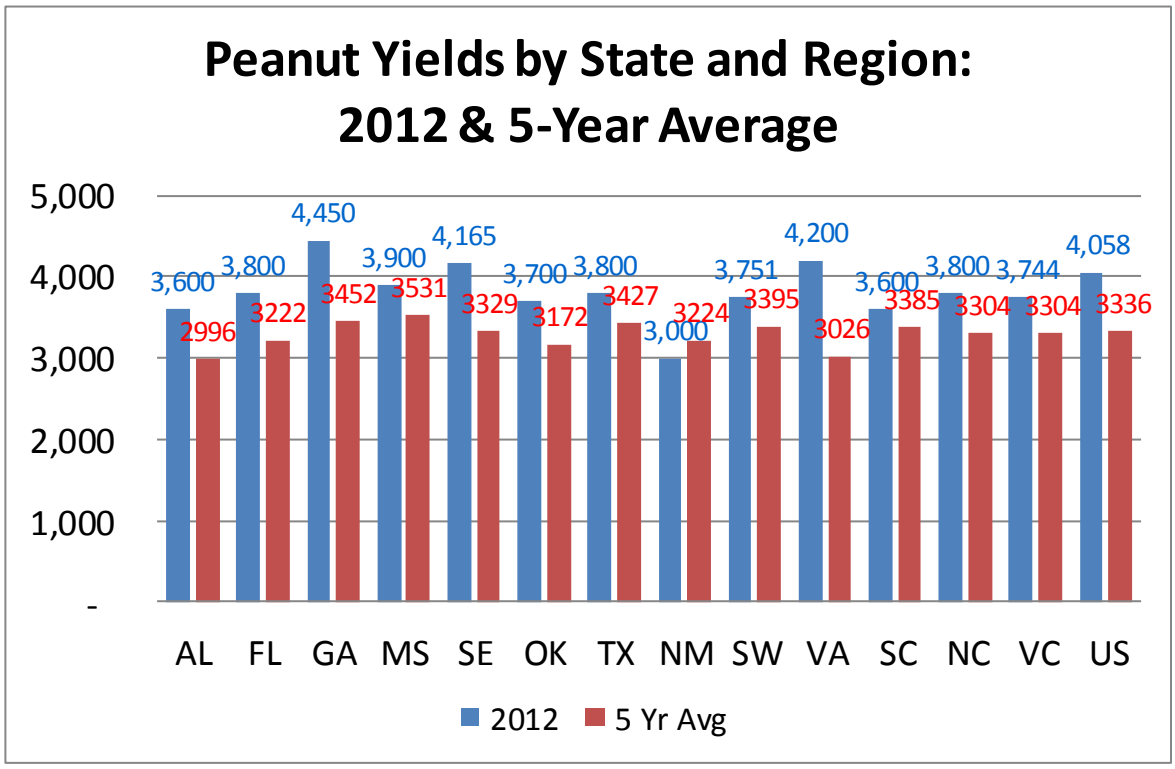
- **All Time Record Yields –** The entire peanut belt harvested excellent yields in 2012. Yields were so good in Georgia that it pushed the national yield above 2 ton average. The U.S. average peanut yield is pegged at 4,058 pounds per acre. As many as seven states established new record yields.

- **Domestic and Total Peanut Pull Back** - Total use of peanuts dropped by 2.6% and domestic use dropped 1.2%. The biggest drop was experienced in exports. Candy, peanut butter and snack use were flat to slightly negative last year in response to a shortage of supply and resulting high prices.

- **Carryover Stocks to Increase 150%** – Stocks of peanuts carried over into the next marketing year will more than double as a result of the bumper peanut crop. Carryover stocks on July 31, 2012 were pegged at 502,000 tons. Record production of 3.235 million tons will bring the ending stocks up to 1.244 million tons. Carryover stocks would represent over 5 months of supply.

- **Peanut Prices Drop from Historic High to Low in One Year** – Shelled peanut prices have dropped from $1.15 to low 50 cents at harvest time. They are poised to fall more with the excess supply. Farmer stock prices have dropped to loan rate of $355 per ton for runners in the Southeast. Loan peanuts have potential to be redeemed at $380 to $425 per ton. Prices for 2013 are expected to be relatively low compared to late 2011 and early 2012.

The 2012 peanut crop is an all-time record as states and regions produced extremely good yields. Record setting yields on top of a 43% increase in peanut acreage will result in 2012 easily beating the 2008 record of 2.58 million tons. The 2012 production is pegged at 3.23 million tons, a 67% increase over 2011. The supply pipeline goes from being a concern because of low stocks to being beyond full. All states across the peanut belt contributed to the record large crop with record to near record yields.



Regionally, yields were up in the Southeast (AL, FL, GA, MS), the Southwest (OK, NM, TX) and the Virginia/Carolina region (NC, SC, VA). The average yield in the SE was up 25% over the five-year average at 4,165 pounds per acre. Georgia has a tremendous crop resulting in a record 4,450 average yield pushing the SE, and the US for that matter, over two ton average in 2012. Georgia is about 50% irrigated and the new varieties have shown a greater response to irrigation but non-irrigated yields pushed irrigated yields this past year. The strength of the new varieties with favorable weather (timely rain) is seen in the other SE states as Alabama (3,600) and Florida (3,800) harvested record yields and Mississippi (3,900) pushed their 2011 record or 4,000 pounds per acre. The SE increased planted acreage by 47% in 2012 to 1.217 million acres with Georgia leading the way acreage wise adding 260,000 acres (55% increase). Mississippi jumped acreage nearly 250% to 52,000 acres due to expansion in infrastructure in the delta area. Alabama (29%) and Florida (24%) made a big shift to peanuts also giving the SE 74% of the planted acreage in 2012. The SE share of acreage has grown from 70% in 2008. Abandonment was not as big a problem in 2012 with 2.4% not harvested. Arkansas is expanding into peanuts along with Mississippi and should be a “peanut” state in the official statistics next year. Reported acreage from FSA for Arkansas shows over 18,000 acres planted in 2012. The acres are assumed to be spread across states in the NASS estimates.

The Southwest (NM, OK, TX) peanut region was up 34% for a total of 182,000 acres. The increase in the SW was due to Texas rebounding to 150,000 acres after a low of 105,000 in 2011. New Mexico acreage rose 21% adding 1,400 acres for a total of 8,000

acres. Oklahoma remained the same as 2011 at 24,000. Average yields recovered for the SW after experiencing very poor yields from drought of 2011. Texas yields averaged 3,800 pounds per acre and Oklahoma 3,700 pounds per acre. New Mexico was the only state without a better yield in 2012 holding at 3,000 pounds.

The Virginia-Carolina (NC, SC, VA) region increased acreage by 35.4% for a total of 237,000 acres. South Carolina made the biggest jump from 77,000 to 110,000 for a 43% increase. This actually surpassed North Carolina which planted 107,000 acres for a 30.5% increase. Virginia added 4,000 acres to total 20,000, a 25% increase. Average yield records is pegged for North Carolina and Virginia at 3,800 and 4,200 pounds per acre respectively. South Carolina is estimated to average 3,600 pounds in 2012, up from 3,300 in 2011.

NASS estimates the U.S. average to break two tons at 4,058 pounds per acre. This bests the previous 2008 record of 3,426 pounds per acre yield. Last year's average yield was 3,386 pounds and 2012 represents a 20% increase. Coupled with a 47.5% increase in harvested acreage, the record average yield grew production by 67% in 2012. A trendline constructed from the last fifteen years of yields gives an expected yield of 3,450 pounds per acre. The weather and technology along with the skill of US growers has pushed the yield potential to a higher level. Fewer acres will be needed to meet demand without an increase in demand.

The factor that weighed heavy on the market last year was a short supply. This year the situation is reversed with too many peanuts. Total peanut supply for the 2012/13 marketing year will jump from 2.715 million to 3.771 million tons. This consists of carryover stocks from the 2011 crop of 502,000 tons plus a 2012 production of 3.325 million tons and 127,000 tons of imports. Imports grew last year to cover the shortfall in production. This was the highest level of imports since 1980/81 marketing year. The second highest year was 2000/01 at 108,000 tons. While total supply was increased in response to higher peanut prices last year, total consumption also adjusted to the high prices as expected in a negative way. Total disappearance of peanuts for the marketing year ending July 31, 2012 was down 2.4% to 2.213 million tons. Peanut and peanut butter prices at the retail level rose to slow demand and as a result domestic consumption dropped 1.2 percent. The actual loss in consumption is higher because of lost growth in domestic use. Per capita consumption has been increasing and was reflected in the strong domestic food consumption growth of 7.7% the previous year. Snack, candy and peanut butter use of shelled edibles ended the 2011/12 marketing year flat to slightly negative. Crush was up to 300,000 tons due to quality losses again in 2011.

Forecast for 2013

Due to the large 2012 crop, domestic consumption should rebound in 2013. Shelled prices have dropped in half from this time last year although the market is quiet at the time of this writing. Peanut butter promotions have been introduced to help to grow consumption. High feed prices will keep meat prices high in 2013, so peanut butter should provide a good substitute of protein at a better value this coming year. Growth in domestic food use should rebound, USDA currently projects at a 7% rate of increase. It could be closer to 9% or more by the summer. The number of peanuts crushed for oil will rise in 2013 mainly due to the record large production of 2012. The forecast is for crush to reach 330,000 tons. Seed and residual is also projected to increase nearly 25% to 294,000 tons. Acreage will decrease but the residual use will more than offset the loss in seed supply. Exports are projected to have the largest increase of 45% more than the previous year. Total exports are expected to jump to 400,000 tons and will be key in working down the surplus.

Adding up the major categories of use gives a total consumption of peanuts for the 2012/13 marketing year at 2.528 million tons, as projected by USDA. If realized this would be a total increase of 14 percent. This is compared to a 3.771 million ton total supply (39% increase) that gives projected carryover stocks of 1.244 million tons in 2013. The carryover would more than double and represent a six month supply. Last year the industry was concerned about falling below a three month supply but an early harvest helped alleviate that concern. Shelling plants should be kept busy shelling the 2012 crop and may not be finished has the 2013 harvest begins.

Supply was the key last year to prices. Demand will be the key this coming year in trying to work down the large supply. The start of the 2013 season will look more like 2009 as far as prices go. The industry will want to insure enough acres are planted to prevent another 2011 but acres need to be reduced. Peanut prices following a large 2008 crop dropped to $375 per ton for 2009 spring contracts. Shelled prices traded in the 40 cent range until late 2010 when it became evident that the 2010 crop was going to be short. This sets the stage for 2013 to have lower prices. Contracts offered to growers will take into account where cotton and corn prices are headed. Soybeans could be a player too in 2013. Thus, the price offered to growers will not exceed returns of cotton, corn and soybeans. Total U.S. acreage dropped to 1.116 million in 2009 due to the lack of contracts. The 2013 season will likely see planted acreage move to between 1.1 and 1.2 million acres.

The table below shows projections for 2013 peanut supply and demand. The projections are preliminary but give a couple scenarios of acreage and yield. The main assumption is that food consumption will increase by 7% and exports by 45% next year.

This is necessary to work down the carryover. A projected yield of 3,520 pounds per acre is given based on 22-year trend. Given the jump in yields the last three year a 3,600 pound average yield is also used.

	USDA			3520 lb 1.25 Mil Acres	3520 lb Yield 1.1 Mil Acres	3650 lb Yield 1.25 Mil Acres	3650 lb Yield 1.1 Mil Acres
	2010/11	2011/12	2012/13				
	1,000 Tons						
Beginning Stocks	915	758	502	1,244	1,244	1,244	1,244
Production	2,079	1,830	3,235	2,200	1,936	2,281	2,008
Total Supply	3,025	2,715	3,771	3,479	3,215	3,560	3,286
Total Use	2,267	2,213	2,528	2,528	2,528	2,528	2,528
Ending Stocks	758	502	1,244	951	687	1,032	759

2013 Cost and Returns Potential

While prices are low and costs are generally on the rise, the one bit of good news for peanuts is that overall costs are expected to be down in 2013. All cost categories are estimated to be either up or the same except for seed and crop insurance. Seed prices should come down significantly given shelled prices have dropped below 50 cents per pound. A figure of 75 cents per pound is used in the peanut budget for 2013 as a starting point. If realized that would be a drop in seed price by a third or $46 per acre savings using a 130 pound per acre seeding rate. Assuming the peanut projected price for crop insurance drops from $576 ($691 max) per ton, premiums should drop in 2013 reflecting less liability insured.

The base budget yield for irrigated and non-irrigated peanuts is raised for 2013. The irrigated budget yield is increased from 4,200 pounds per acre to 4,500 pounds per acre. The non-irrigated yield is raised from 2,900 pounds per acre to 3,200 pounds per acre. These are significant increases on an average basis, however, higher yield potential of newer varieties led to raising expectations for 2013.

Returns to irrigated and non-irrigated production will be lower in 2013 despite expected lower costs overall. The drop in seed and insurance cost is not enough to offset a drop in price if growers were to average $400 to $450 per ton in 2013. Compared to corn, peanut prices need to be $476 for non-irrigated and $539 per ton for irrigated to have equal returns above variable costs (land rent not included). To equal cotton returns, price needs to average $433 and $454 for non-irrigated and irrigated peanuts respectively. Peanuts need to average $426 and $478 to equal non-irrigated and irrigated soybeans. These estimates assume 76 cent cotton, $6.25 corn, and $12.50 soybeans.

Seed, Fertilizer and Chemicals - Seed cost is lowered by 32% from $1.10 per pound price last year in the expectation of lower demand, lower shelled prices, and higher availability of seed. Price is projected at 75 cents per pound for 2013 in the peanut budgets. However, given shelled prices are trading in the 46-47 cent range, the seed price could even drop closer to 65 cents per pound. Fertilizer prices are kept the same for peanuts. Many peanut growers have maintained soil nutrient levels and thus, are not using fertilizer on peanuts other than gypsum and lime. Chemical costs in general have been on the rise for brand name products, but the alternative of generics such as chlorothalonil and tebuconazole are widely utilized by growers. Total chemical cost is projected up 4%.

Cost of Borrowed Funds – The interest rate charged is dependent upon what lending institutions pay for funds they lend. Traditionally loans are based on the prime rate plus 1 to 2 percent. As the prime lending rate has dropped recently banks have adjusted the margin with some going to 3 points above prime. Farmers in good financial standing should be able to qualify for 6.5% or below.

Fuel and Energy Costs – Energy prices have fluctuated up and down with the economy, weather, and Sandy's impact on refining. Fuel and oil prices are expected to be slight higher 2013. The budgeted price for diesel was $3.75 per gallon. The irrigated peanut budget charges an average of $12.13 per acre inch of water reflecting a 50/50 ratio of diesel and electric power sources.

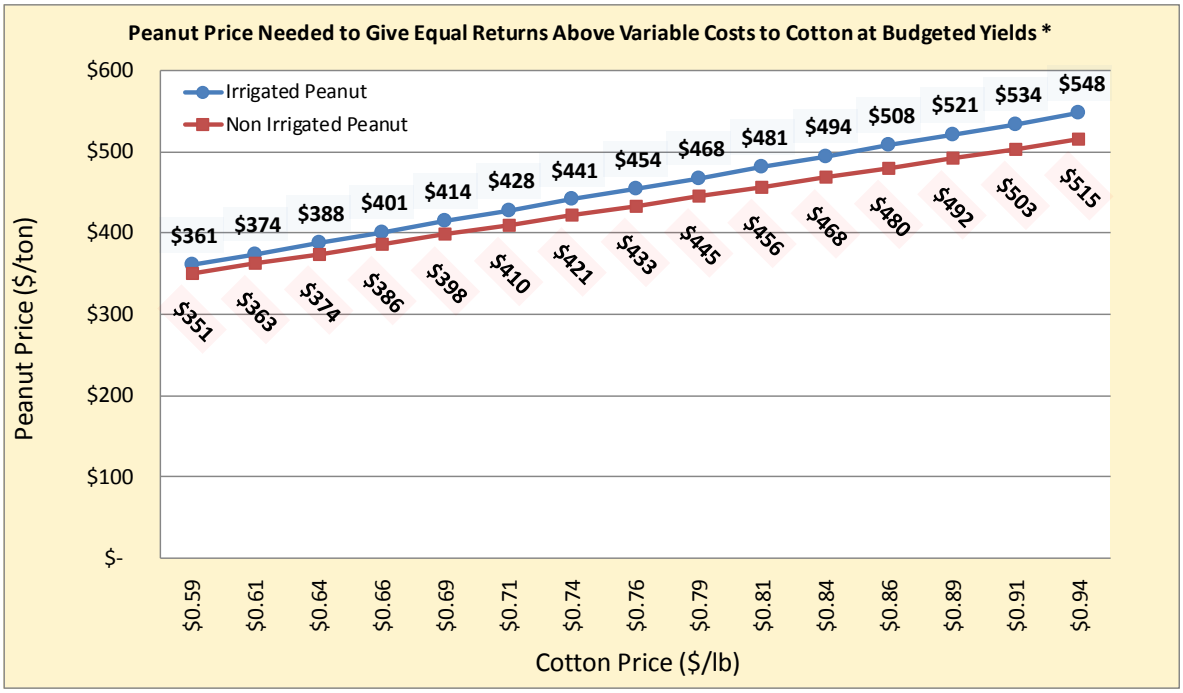
Labor and Repairs – Operator labor rates are raised to $12 per hour in the 2013 budget raising the labor cost 4.3%. Repair and maintenance costs are raised 6.25% reflecting higher cost of equipment and parts.

Breakeven Yield and Price – Note the Sensitivity Analysis table on the second page of the budgets. The table shows the return above variable cost with varying yields and prices. At the budgeted yield of 3,200 pounds per acre, non-irrigated peanut requires $344 per ton to cover variable costs (*without land rent*) for conventional and $348 per ton strip tillage. Irrigated peanut requires $299 per ton to cover variable costs for conventional and $296 per ton for strip tillage. In order to cover all costs excluding a land charge, the breakeven price is $459 for strip tillage and $470 per ton for conventional in non-irrigated peanut and $435 for strip tillage and $449 per ton for conventional in irrigated peanut.

By adding a land rent figure of $185 for irrigated and $60 for non-irrigated, the breakeven above variable cost goes up to $384 and $387 per ton for conventional and strip-tillage respectively. The irrigated breakeven above variable cost becomes $383 and $381 for conventional and strip-tillage. Total cost breakevens including the land rent figure rises to $494 and $483 for non-irrigated conventional and strip-tillage, and $523 and $510 per ton for irrigated conventional and strip-tillage.

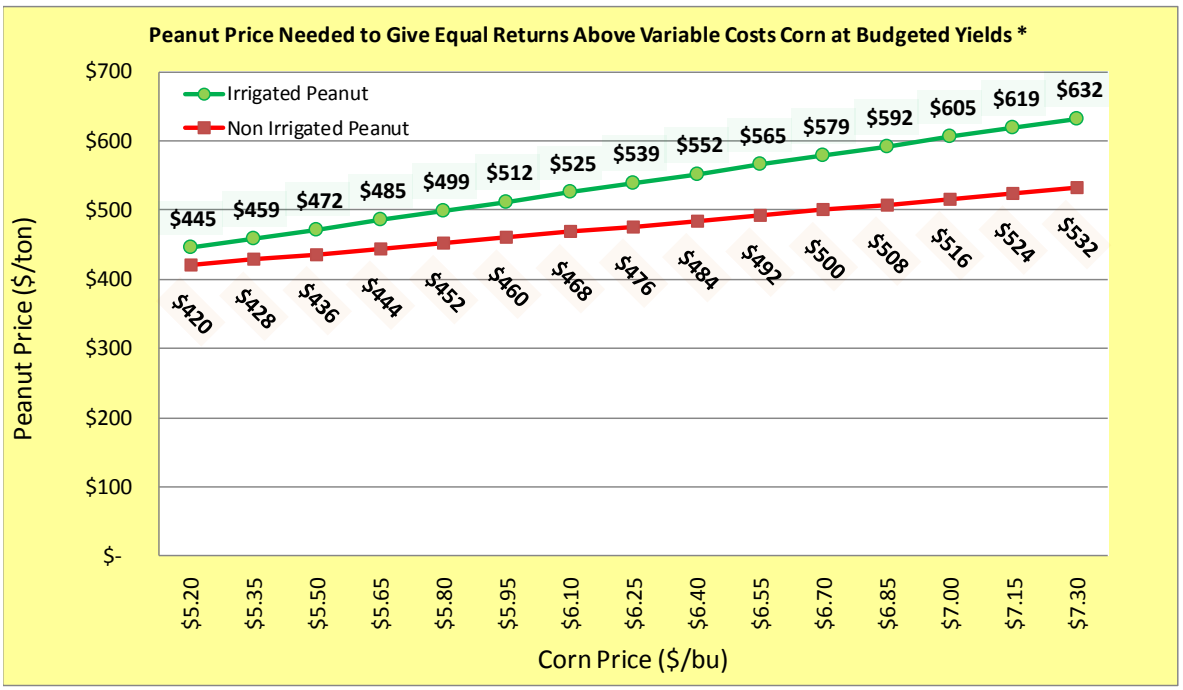
2013 Crop Comparisons

Below are charts showing the peanut price needed to equate returns to cotton, corn and soybeans based on the crop budgets.



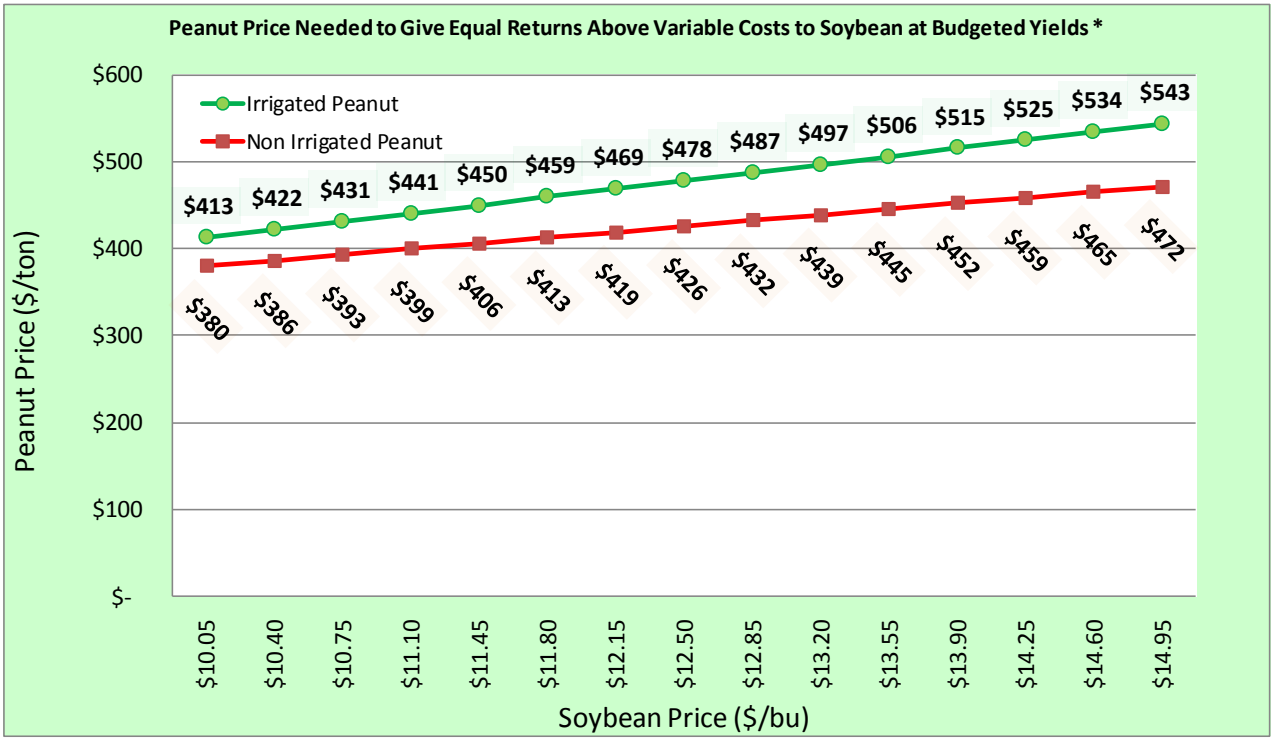
* The above chart is based on the following assumptions:

1) Irrigated peanut is compared to irrigated cotton and non-irrigated peanut is compared to non-irrigated cotton.
2) Irrigated peanut yield is 4500 lbs. and irrigated cotton yield is 1200 lbs.
3) Non-irrigated peanut yield is 3200 lbs. and non-irrigated cotton yield is 750 lbs.
4) Prices shown are those needed to cover budgeted operating costs for conventional till production listed in the crop comparison to



* The above chart is based on the following assumptions:

1) Irrigated peanut is compared to irrigated corn and non-irrigated peanut is compared to non-irrigated corn.
2) Irrigated peanut yield is 4500 lbs. and irrigated corn yield is 200 bu.
3) Non-irrigated peanut yield is 3200 lbs. and non-irrigated corn yield is 85 bu.
4) Prices shown are those needed to cover budgeted operating costs for conventional till production listed in the crop comparison to



* The above chart is based on the following assumptions:

1) Irrigated peanut is compared to irrigated soybean and non-irrigated peanut is compared to non-irrigated soybean.
2) Irrigated peanut yield is 4500 lbs. and irrigated soybean yield is 60 bu.
3) Non-irrigated peanut yield is 3200 lbs. and non-irrigated soybean yield is 30 bu.
4) Prices shown are those needed to cover budgeted operating costs for conventional till production listed in the crop comparison to

Contact your local county Cooperative Extension agent for help in accessing and using the peanut budgets and crop comparison tools for your operation.

This tool enables a grower to compare the costs and expected returns of the major row crops in Georgia in a side-by-side manner. The cost and return estimates in the tool are based upon the UGA Row Crop Enterprise Budgets. The budget estimates are intended as only a guideline as individual operations and local input prices vary across the state. Growers are encouraged to enter their own numbers into the budgets to determine their expected costs and returns. A peanut price calculator was was added to the Crop Comparison Tool in 2012 to allow a grower to enter different contracted tons and price and use an average price in the comparison summary page. The prices in the Crop Comparison Tool reflect our best guess at the end of 2012 for expected average price. Actual returns would change as price, yield and cost change throughout the season.

PEANUT BUDGETS: IRRIGATED AND NON-IRRGATED, CONVENTIONAL TILLAGE AND REDUCED TILLAGE

Amanda Smith and Nathan Smith

Irrigated Peanut, Strip Tillage
4-Row Combine, 6-Row Equipment
South Georgia, 2013

Estimated Costs and Returns

Expected Yield: **2.25** ton Your Yield _____

Variable Costs	Unit	Amount	$/Unit	Cost/Acre	$/ton	Your Farm
Cover Crop Seed	bushel	1.5	$15.00	$22.50	$10.00	
Seed	pounds	130	$0.75	$97.50	$43.33	
Inoculant	pounds	5	$1.45	$7.25	$3.22	
Lime/Gypsum *	ton	0.5	$108.00	$54.00	$24.00	
Fertilizer						
Boron	pounds	0.5	$5.25	$2.63	$1.17	
Phosphate	pounds	0	$0.55	$0.00	$0.00	
Potash	pounds	0	$0.50	$0.00	$0.00	
Weed Control	acre	1	$59.69	$59.69	$26.53	
Insect Control	acre	1	$50.28	$50.28	$22.34	
Disease Control **	acre	1	$76.52	$76.52	$34.01	
Preharvest Machinery						
Fuel	gallon	5.2	$3.75	$19.53	$8.68	
Repairs and Maintenance	acre	1	$10.45	$10.45	$4.65	
Harvest Machinery						
Fuel	gallon	10.3	$3.75	$38.60	$17.16	
Repairs and Maintenance	acre	1	$30.51	$30.51	$13.56	
Labor	hours	2.3	$12.00	$28.15	$12.51	
Irrigation****	applications	5	$12.13	$60.63	$26.94	
Crop Insurance	acre	1	$20.00	$20.00	$8.89	
Land Rent	acre	1	$0.00	$0.00	$0.00	
Interest on Operating Capital	percent	$277.86	$0.07	$18.06	$8.03	
Cleaning	ton	0.7	$12.00	$8.91	$3.96	
Drying	ton	1.5	$30.00	$45.23	$20.10	
Marketing	ton	2.3	$3.00	$6.75	$3.00	
NPB Checkoff	dollars	$0.01	799	$7.99	$3.55	
Total Variable Costs:				**$665.16**	**$295.63**	

Fixed Costs						
Machinery Depreciation, Taxes, Insurance and Housing						
Preharvest Machinery	acre	1	$28.07	$28.07	$12.47	
Harvest Machinery	acre	1	$94.96	$94.96	$42.20	
Irrigation	acre	1	$125.00	$125.00	$55.56	
General Overhead	% of VC	$665.16	5%	$33.26	$14.78	
Management	% of VC	$665.16	5%	$33.26	$14.78	
Owned Land Cost, Taxes, Cash Payment, etc.	acre	1	$ -	$ -	$ -	
Other _____	acre	1	$ -	$ -	$ -	
Total Fixed Costs				**$314.54**	**$139.80**	

Total Costs Excluding Land		**$979.70**	**$435.42**
Your Profit Goal	**$** _____		**/ton**
Price Needed for Profit	**$**		**/ton**

* Lime/gypsum application is prorated at 0.5 ton to equal 1.5 ton application every 3 years.

** If soilborne disease threatens to be severe, additional application of soilborne fungicide may be recommended, add $15-20/spray. If leafspot threatens to be severe, additional application of chlorothalonil may be recommended at 3/4 pint ($3-5/ac). A nematicide (where needed) = $50-75/ac.

*** Average of diesel and electric irrigation application costs. Electric is estimated at $7/appl and diesel is estimated at $17.25/appl when diesel costs $3.75/gal.

Developed by Amanda Smith and Nathan Smith. Data may be modified by the user to more closely reflect their operation. UGA estimates are available online at http://www.ces.uga.edu/Agriculture/agecon/agecon.html.

Sensitivity Analysis of 4-Row Combine, 6-Row Equipment

Net Returns Above Variable Costs Per Acre

Varying Prices and Yields (ton)

	-25%	-10%	Expected	+10%	+25%
Price \ ton/Acre	1.69	2.03	2.25	2.48	2.81
350	**-$74.53**	**$43.59**	**$122.34**	**$201.09**	**$319.22**
400	**$9.84**	**$144.84**	**$234.84**	**$324.84**	**$459.84**
450	**$94.22**	**$246.09**	**$347.34**	**$448.59**	**$600.47**
500	**$178.59**	**$347.34**	**$459.84**	**$572.34**	**$741.09**
550	**$262.97**	**$448.59**	**$572.34**	**$696.09**	**$881.72**

Estimated Labor and Machinery Costs per Acre

Preharvest Operations

Operation	Acres/Hour	Number of Times Over	Labor Use**** (hrs/ac)	Fuel Use (gal/ac)	Repairs ($/ac)	Fixed Costs ($/ac)
Grain Drill 15' with Tractor (120-139 hp) 2WD 130	8.0	1	0.16	0.84	$2.00	$5.60
Spray (Broadcast) 60' with Tractor (120-139 hp) 2WD 130	35.5	1	0.04	0.19	$0.36	$0.86
Subsoiler low-till 6 shank with Tractor (180-199 hp) MFWD 190	9.8	1	0.13	1.00	$1.64	$5.17
Plant & Pre-Rigid 6R-36 with Tractor (180-199 hp) MFWD 190	8.9	1	0.14	1.10	$2.49	$7.00
Spray (Broadcast) 60' with Tractor (120-139 hp) 2WD 130	35.5	11	0.39	2.08	$3.96	$9.44
Total Preharvest Values			0.85	5.21	$10.45	$28.07

Harvest Operations

Operation	Acres/Hour	Number of Times Over	Labor Use**** (hrs/ac)	Fuel Use (gal/ac)	Repairs ($/ac)	Fixed Costs ($/ac)
Peanut Dig/Inverter 4R-36 with Tractor (180-199 hp) MFWD 190	3.6	1	0.35	2.74	$7.17	$17.09
Pull-type Peanut Combine 4R-36 with Tractor (180-199 hp) MFWD 190	2.2	1	0.57	4.48	$18.65	$65.34
Peanut Wagon 21' with Tractor (120-139 hp) 2WD 130	2.2	1	0.57	3.07	$4.69	$12.53
Total Harvest Values			1.50	10.29	$30.51	$94.96

**** Includes unallocated labor factor of 0.25. Unallocated labor factor is percentage allowance for additional labor required to move equipment and hook/unhook implements, etc.

Developed by Amanda Smith and Nathan Smith. Data may be modified by the user to more closely reflect their operation. UGA estimates are available online at http://www.ces.uga.edu/Agriculture/agecon/agecon.html.

Irrigated Peanut
4-Row Combine, 6-Row Equipment
South Georgia, 2013

Estimated Costs and Returns

Expected Yield: **2.25** ton Your Yield _____

Variable Costs	Unit	Amount	$/Unit	Cost/Acre	$/ton	Your Farm
Seed	pounds	130	$0.75	$97.50	$43.33	
Inoculant	pounds	5	$1.45	$7.25	$3.22	
Lime/Gypsum *	ton	0.5	$108.00	$54.00	$24.00	
Fertilizer						
Boron	pounds	0.5	$5.25	$2.63	$1.17	
Phosphate	pounds	0	$0.55	$0.00	$0.00	
Potash	pounds	0	$0.50	$0.00	$0.00	
Weed Control	acre	1	$48.05	$48.05	$21.36	
Insect Control	acre	1	$50.28	$50.28	$22.34	
Disease Control **	acre	1	$76.52	$76.52	$34.01	
Preharvest Machinery						
Fuel	gallon	9.2	$3.75	$34.62	$15.39	
Repairs and Maintenance	acre	1	$17.92	$17.92	$7.96	
Harvest Machinery						
Fuel	gallon	10.3	$3.75	$38.60	$17.16	
Repairs and Maintenance	acre	1	$30.51	$30.51	$13.56	
Labor	hours	2.8	$12.00	$33.86	$15.05	
Irrigation***	applications	6	$12.13	$72.75	$32.33	
Crop Insurance	acre	1	$20.00	$20.00	$8.89	
Land Rent	acre	1	$0.00	$0.00	$0.00	
Interest on Operating Capital	percent	$292.24	$0.07	$19.00	$8.44	
Cleaning	ton	0.7	$12.00	$8.91	$3.96	
Drying	ton	1.5	$30.00	$45.23	$20.10	
Marketing	ton	2.3	$3.00	$6.75	$3.00	
NPB Checkoff	dollars	$0.01	799	$7.99	$3.55	
Total Variable Costs:				**$ 672.34**	**$ 298.82**	

Fixed Costs						
Machinery Depreciation, Taxes, Insurance and Housing						
Preharvest Machinery	acre	1	$51.50	$51.50	$22.89	
Harvest Machinery	acre	1	$94.96	$94.96	$42.20	

Irrigation	acre	1	$125.00	$125.00	$55.56	
General Overhead	% of VC	$672.34	5%	$33.62	$14.94	
Management	% of VC	$672.34	5%	$33.62	$14.94	
Owned Land Cost, Taxes, Cash Payment, etc.	acre	1	$ -	$ -	$ -	
Other _____	acre	1	$ -	$ -	$ -	
Total Fixed Costs				**$338.69**	**$150.53**	

Total Costs Excluding Land		**$1,011.03**	**$449.35**
Your Profit Goal	**$**	_____	**/ton**
Price Needed for Profit	**$**		**/ton**

* Lime/gypsum application is prorated at 0.5 ton to equal 1.5 ton application every 3 years.

** If soilborne disease threatens to be severe, additional application of soilborne fungicide may be recommended, add $15-20/spray. If leafspot threatens to be severe, additional application of chlorothalonil may be recommended at 3/4 pint ($3-5/ac). A nematicide (where needed) = $50-75/ac.

*** Average of diesel and electric irrigation application costs. Electric is estimated at $7/appl and diesel is estimated at $17.25/appl when diesel costs $3.75/gal.

Developed by Nathan Smith and Amanda Smith. Data may be modified by the user to more closely reflect their operation. UGA estimates are available online at http://www.ces.uga.edu/Agriculture/agecon/agecon.html.

Sensitivity Analysis of 4-Row Combine, 6-Row Equipment

Net Returns Above Variable Costs Per Acre

Varying Prices and Yields (ton)

	-25%	-10%	Expected	+10%	+25%
Price \ ton/Acre	1.69	2.03	2.25	2.48	2.81
350	**-$81.72**	**$36.41**	**$115.16**	**$193.91**	**$312.03**
400	**$2.66**	**$137.66**	**$227.66**	**$317.66**	**$452.66**
450	**$87.03**	**$238.91**	**$340.16**	**$441.41**	**$593.28**
500	**$171.41**	**$340.16**	**$452.66**	**$565.16**	**$733.91**
550	**$255.78**	**$441.41**	**$565.16**	**$688.91**	**$874.53**

Estimated Labor and Machinery Costs per Acre

Preharvest Operations

Operation	Acres/Hour	Number of Times Over	Labor Use**** (hrs/ac)	Fuel Use (gal/ac)	Repairs ($/ac)	Fixed Costs ($/ac)
Heavy Disk 27' with Tractor (180-199 hp) MFWD 190	13.2	2	0.19	1.48	$3.35	$9.73

Plow 4 Bottom Switch with Tractor (180-199 hp) MFWD 190	2.3	1	0.54	4.20	$6.56	$19.82
Disk & Incorporate 32' with Tractor (180-199 hp) MFWD 190	15.3	1	0.08	0.64	$1.75	$4.57
Field Cultivate Fld 32' with Tractor (180-199 hp) MFWD 190	21.4	1	0.06	0.46	$0.90	$3.77
Plant & Pre-Rigid 6R-36 with Tractor (120-139 hp) 2WD 130	8.9	1	0.14	0.75	$2.11	$5.87
Spray (Broadcast) 60' with Tractor (120-139 hp) 2WD 130	35.5	9	0.32	1.70	$3.24	$7.73
Total Preharvest Values			1.32	9.23	$17.92	$51.50

Harvest Operations

Operation	Acres/Hour	Number of Times Over	Labor Use**** (hrs/ac)	Fuel Use (gal/ac)	Repairs ($/ac)	Fixed Costs ($/ac)
Peanut Dig/Inverter 4R-36 with Tractor (180-199 hp) MFWD 190	3.6	1	0.35	2.74	$7.17	$17.09
Pull-type Peanut Combine 4R-36 with Tractor (180-199 hp) MFWD 190	2.2	1	0.57	4.48	$18.65	$65.34
Peanut Wagon 21' with Tractor (120-139 hp) 2WD 130	2.2	1	0.57	3.07	$4.69	$12.53
Total Harvest Values			1.50	10.29	$30.51	$94.96

**** Includes unallocated labor factor of 0.25. Unallocated labor factor is percentage allowance for additional labor required to move equipment and hook/unhook implements, etc.

Developed by Nathan Smith and Amanda Smith. Data may be modified by the user to more closely reflect their operation. UGA estimates are available online at http://www.ces.uga.edu/Agriculture/agecon/agecon.html.

Non-Irrigated Peanut, Strip Tillage
4-Row Combine, 6-Row Equipment
South Georgia, 2013

Estimated Costs and Returns

Expected Yield: **1.6** ton Your Yield _____

Variable Costs	Unit	Amount	$/Unit	Cost/Acre	$/ton	Your Farm
Cover Crop Seed	bushel	1.5	$15.00	$22.50	$14.06	
Seed	pounds	130	$0.75	$97.50	$60.94	
Inoculant	pounds	5	$1.45	$7.25	$4.53	
Lime/Gypsum *	ton	0.5	$108.00	$54.00	$33.75	
Fertilizer						
Boron	pounds	0.5	$5.25	$2.63	$1.64	
Phosphate	pounds	0	$0.55	$0.00	$0.00	
Potash	pounds	0	$0.50	$0.00	$0.00	
Weed Control	acre	1	$69.47	$69.47	$43.42	
Insect Control	acre	1	$50.28	$50.28	$31.42	
Disease Control **	acre	1	$39.30	$39.30	$24.56	
Preharvest Machinery						
Fuel	gallon	5.2	$3.75	$19.53	$12.21	
Repairs and Maintenance	acre	1	$10.45	$10.45	$6.53	
Harvest Machinery						
Fuel	gallon	10.3	$3.75	$38.60	$24.13	
Repairs and Maintenance	acre	1	$30.51	$30.51	$19.07	
Labor	hours	2.3	$12.00	$28.15	$17.59	
Crop Insurance	acre	1	$22.00	$22.00	$13.75	
Land Rent	acre	1	$0.00	$0.00	$0.00	
Interest on Operating Capital	percent	$234.83	$0.07	$15.26	$9.54	
Cleaning	ton	0.5	$12.00	$6.34	$3.96	
Drying	ton	1.1	$30.00	$32.16	$20.10	
Marketing	ton	1.6	$3.00	$4.80	$3.00	
NPB Checkoff	dollars	$0.01	568	$5.68	$3.55	
Total Variable Costs:				**$556.40**	**$347.75**	

Fixed Costs						
Machinery Depreciation, Taxes, Insurance and Housing						
Preharvest Machinery	acre	1	$28.07	$28.07	$17.54	
Harvest Machinery	acre	1	$94.96	$94.96	$59.35	
General Overhead	% of VC	$556.40	5%	$27.82	$17.39	

Management	% of VC	$556.40	5%	$27.82	$17.39	
Owned Land Cost, Taxes, Cash Payment, etc.	acre	1	$ -	$ -	$ -	
Other _____	acre	1	$ -	$ -	$ -	
Total Fixed Costs				**$178.67**	**$111.67**	

Total Costs Excluding Land		**$735.06**	**$459.41**
Your Profit Goal	**$**	_____	**/ton**
Price Needed for Profit	**$**		**/ton**

* Lime/gypsum application is prorated at 0.5 ton to equal 1.5 ton application every 3 years.

** If soilborne disease threatens to be severe, additional application of soilborne fungicide may be recommended, add $15-20/spray. If leafspot threatens to be severe, additional application of chlorothalonil may be recommended at 3/4 pint ($3-5/ac). A nematicide (where needed) = $50-75/ac.

Developed by Amanda Smith and Nathan Smith. Data may be modified by the user to more closely reflect their operation. UGA estimates are available online at http://www.ces.uga.edu/Agriculture/agecon/agecon.html.

Sensitivity Analysis of 4-Row Combine, 6-Row Equipment

Net Returns Above Variable Costs Per Acre

Varying Prices and Yields (ton)

	-25%	-10%	Expected	+10%	+25%
Price \ ton/Acre	1.20	1.44	1.60	1.76	2.00
350	**-$136.40**	**-$52.40**	**$3.60**	**$59.60**	**$143.60**
400	**-$76.40**	**$19.60**	**$83.60**	**$147.60**	**$243.60**
450	**-$16.40**	**$91.60**	**$163.60**	**$235.60**	**$343.60**
500	**$43.60**	**$163.60**	**$243.60**	**$323.60**	**$443.60**
550	**$103.60**	**$235.60**	**$323.60**	**$411.60**	**$543.60**

Estimated Labor and Machinery Costs per Acre

Preharvest Operations

Operation	Acres/Hour	Number of Times Over	Labor Use*** (hrs/ac)	Fuel Use (gal/ac)	Repairs ($/ac)	Fixed Costs ($/ac)
Grain Drill 15' with Tractor (120-139 hp) 2WD 130	8.0	1	0.16	0.84	$2.00	$5.60
Spray (Broadcast) 60' with Tractor (120-139 hp) 2WD 130	35.5	1	0.04	0.19	$0.36	$0.86
Subsoiler low-till 6 shank with Tractor (180-199 hp) MFWD 190	9.8	1	0.13	1.00	$1.64	$5.17

Plant & Pre-Rigid 6R-36 with Tractor (180-199 hp) MFWD 190	8.9	1	0.14	1.10	$2.49	$7.00
Spray (Broadcast) 60' with Tractor (120-139 hp) 2WD 130	35.5	11	0.39	2.08	$3.96	$9.44
Total Preharvest Values			0.85	5.21	$10.45	$28.07

Harvest Operations

Operation	Acres/Hour	Number of Times Over	Labor Use*** (hrs/ac)	Fuel Use (gal/ac)	Repairs ($/ac)	Fixed Costs ($/ac)
Peanut Dig/Inverter 4R-36 with Tractor (180-199 hp) MFWD 190	3.6	1	0.35	2.74	$7.17	$17.09
Pull-type Peanut Combine 4R-36 with Tractor (180-199 hp) MFWD 190	2.2	1	0.57	4.48	$18.65	$65.34
Peanut Wagon 21' with Tractor (120-139 hp) 2WD 130	2.2	1	0.57	3.07	$4.69	$12.53
Total Harvest Values			1.50	10.29	$30.51	$94.96

*** Includes unallocated labor factor of 0.25. Unallocated labor factor is percentage allowance for additional labor required to move equipment and hook/unhook implements, etc.

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Non-Irrigated Peanut
4-Row Combine, 6-Row Equipment
South Georgia, 2013

Estimated Costs and Returns

Expected Yield: **1.6** ton Your Yield _____

Variable Costs	Unit	Amount	$/Unit	Cost/Acre	$/ton	Your Farm
Seed	pounds	130	$0.75	$97.50	$60.94	
Inoculant	pounds	5	$1.45	$7.25	$4.53	
Lime/Gypsum *	ton	0.5	$108.00	$54.00	$33.75	
Fertilizer						
Boron	pounds	0.5	$5.25	$2.63	$1.64	
Phosphate	pounds	0	$0.55	$0.00	$0.00	
Potash	pounds	0	$0.50	$0.00	$0.00	
Weed Control	acre	1	$57.85	$57.85	$36.15	
Insect Control	acre	1	$50.28	$50.28	$31.42	
Disease Control **	acre	1	$39.30	$39.30	$24.56	
Preharvest Machinery						
Fuel	gallon	9.2	$3.75	$34.62	$21.64	
Repairs and Maintenance	acre	1	$17.92	$17.92	$11.20	
Harvest Machinery						
Fuel	gallon	10.3	$3.75	$38.60	$24.13	
Repairs and Maintenance	acre	1	$30.51	$30.51	$19.07	
Labor	hours	2.8	$12.00	$33.86	$21.16	
Crop Insurance	acre	1	$22.00	$22.00	$13.75	
Land Rent	acre	1	$0.00	$0.00	$0.00	
Interest on Operating Capital	percent	$243.15	$0.07	$15.80	$9.88	
Cleaning	ton	0.5	$12.00	$6.34	$3.96	
Drying	ton	1.1	$30.00	$32.16	$20.10	
Marketing	ton	1.6	$3.00	$4.80	$3.00	
NPB Checkoff	dollars	$0.01	568	$5.68	$3.55	
Total Variable Costs:				**$551.08**	**$344.42**	

Fixed Costs						
Machinery Depreciation, Taxes, Insurance and Housing						
Preharvest Machinery	acre	1	$51.50	$51.50	$32.19	
Harvest Machinery	acre	1	$94.96	$94.96	$59.35	
General Overhead	% of VC	$551.08	5%	$27.55	$17.22	
Management	% of VC	$551.08	5%	$27.55	$17.22	

Owned Land Cost, Taxes, Cash Payment, etc.	acre	1	$ -	$ -	$ -
Other _____	acre	1	$ -	$ -	$ -
Total Fixed Costs				**$201.56**	**$125.98**

Total Costs Excluding Land		**$752.64**	**$470.40**
Your Profit Goal	**$** _____		**/ton**
Price Needed for Profit	**$**		**/ton**

* Lime/gypsum application is prorated at 0.5 ton to equal 1.5 ton application every 3 years.

** If soilborne disease threatens to be severe, additional application of soilborne fungicide may be recommended, add $15-20/spray. If leafspot threatens to be severe, additional application of chlorothalonil may be recommended at 3/4 pint ($3-5/ac). A nematicide (where needed) = $50-75/ac.

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Sensitivity Analysis of 4-Row Combine, 6-Row Equipment

Net Returns Above Variable Costs Per Acre

Varying Prices and Yields (ton)

	-25%	-10%	Expected	+10%	+25%
Price \ ton/Acre	1.20	1.44	1.60	1.76	2.00
350	**-$131.08**	**-$47.08**	**$8.92**	**$64.92**	**$148.92**
400	**-$71.08**	**$24.92**	**$88.92**	**$152.92**	**$248.92**
450	**-$11.08**	**$96.92**	**$168.92**	**$240.92**	**$348.92**
500	**$48.92**	**$168.92**	**$248.92**	**$328.92**	**$448.92**
550	**$108.92**	**$240.92**	**$328.92**	**$416.92**	**$548.92**

Estimated Labor and Machinery Costs per Acre

Preharvest Operations

Operation	Acres/Hour	Number of Times Over	Labor Use*** (hrs/ac)	Fuel Use (gal/ac)	Repairs ($/ac)	Fixed Costs ($/ac)
Heavy Disk 27' with Tractor (180-199 hp) MFWD 190	13.2	2	0.19	1.48	$3.35	$9.73
Plow 4 Bottom Switch with Tractor (180-199 hp) MFWD 190	2.3	1	0.54	4.20	$6.56	$19.82
Disk & Incorporate 32' with Tractor (180-199 hp) MFWD 190	15.3	1	0.08	0.64	$1.75	$4.57

Field Cultivate Fld 32' with Tractor (180-199 hp) MFWD 190	21.4	1	0.06	0.46	$0.90	$3.77
Plant & Pre-Rigid 6R-36 with Tractor (120-139 hp) 2WD 130	8.9	1	0.14	0.75	$2.11	$5.87
Spray (Broadcast) 60' with Tractor (120-139 hp) 2WD 130	35.5	9	0.32	1.70	$3.24	$7.73
Total Preharvest Values			1.32	9.23	$17.92	$51.50

Harvest Operations

Operation	Acres/Hour	Number of Times Over	Labor Use*** (hrs/ac)	Fuel Use (gal/ac)	Repairs ($/ac)	Fixed Costs ($/ac)
Peanut Dig/Inverter 4R-36 with Tractor (180-199 hp) MFWD 190	3.6	1	0.35	2.74	$7.17	$17.09
Pull-type Peanut Combine 4R-36 with Tractor (180-199 hp) MFWD 190	2.2	1	0.57	4.48	$18.65	$65.34
Peanut Wagon 21' with Tractor (120-139 hp) 2WD 130	2.2	1	0.57	3.07	$4.69	$12.53
Total Harvest Values			1.50	10.29	$30.51	$94.96

*** Includes unallocated labor factor of 0.25. Unallocated labor factor is percentage allowance for additional labor required to move equipment and hook/unhook implements, etc.

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CLIMATE OUTLOOK FOR 2013 and PEANUT RELATED CLIMATE TOOLS AVAILABLE ONLINE

Pam Knox

Highlights:

- Drought should decrease over the winter but could return in spring
- Lack of an El Niño or La Niña has made prediction of planting season conditions tougher
- Spring is likely to be warmer than usual
- Agroclimate and GeorgiaWeather.net have tools which you can use to help identify planting dates and disease likelhood

Drought conditions in Georgia in 2012 were more restricted in area than in the exceptional drought of 2007-2009, but some parts of the state have experienced worse conditions this past year than in the previous drought. A news story comparing the 2007-2009 drought to the present drought can be found online at: http://www.caes.uga.edu/applications/gafaces/?public=viewStory&pk_id=4613

In early January, the drought conditions across Georgia were slowly improving in the northern parts of the state where the heaviest precipitation has occurred. Unfortunately, the southern half of Georgia has been less blessed by rainfall and the drought in this area has slowly expanded and increased in intensity since November. Rainfall in the holiday period and the beginning of 2013 has improved soil moisture conditions somewhat except near the coast, although many farm ponds and streams are at near record lows even after the beneficial rain that occurred in early January. Based on the 1-month predictions from the NOAA Climate Prediction Center, the warmer and wetter conditions are likely to continue through January. This will work to improve soil moisture during the winter recharge period, which ends around April 1st in most parts of the state.

In many years, the Southeast experiences climate impacts from the presence of an El Niño or La Niña, which have strong statistical effects on rainfall and temperature in the Southeast, particularly in south Georgia. However, this year an El Niño failed to develop as expected and we are projected to remain in neutral conditions for the next few months. This makes predictability of climate less certain than when an El Niño or La Niña is present.

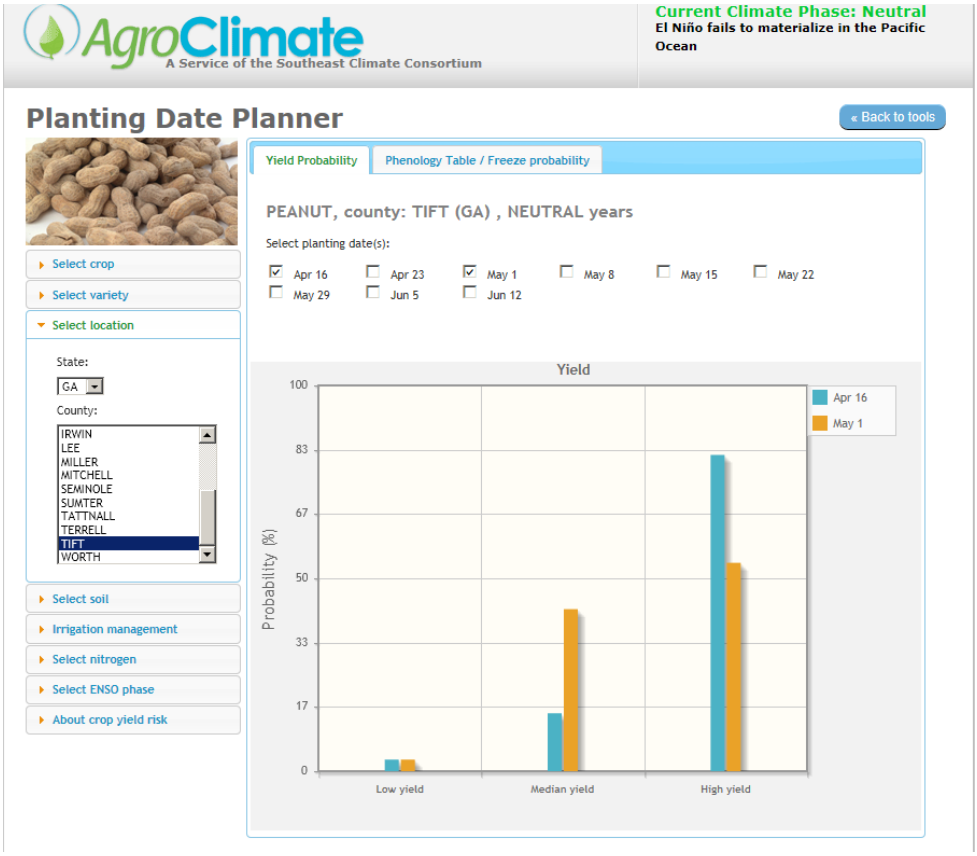
In spite of uncertainty in climate due to the lack of an El Niño, the Climate Prediction Center considers it likely that March through May will be at an increased chance for above-normal temperature and suggests that this trend could continue through the summer months. Precipitation predictions are based on climatology, with equal chances of below normal, near normal and above normal rainfall through the next growing season, due to the lack of an El Niño signal. If spring does prove to be warmer than normal, this

could dry out soils more quickly than in average years due to the increased evaporation due to higher temperatures. Producers should watch soil moisture and temperature conditions carefully in spring to take advantage of optimal soil conditions.

There are a variety of tools available online to help you with your farm management activities. Georgiaweather.net is the web site for the UGA Automated Environmental Monitoring Network and has current soil temperature and soil moisture maps across the state as well as tabulated rainfall values in peanut-producing areas. It also has a peanut leaf-spot risk advisory tool available in the Peanut section accessible from the home page.

Another site with a lot of useful information for peanut growers is AgroClimate.org. This site is maintained by the Southeast Climate Consortium and includes information based on research done at 10 universities around the southeast, including UGA. A number of resources for peanut farmers are located at http://www.agroclimate.org/crops/peanut/peanut.php.

In addition to the resource listing, AgroClimate has tools that can help with planting dates and predicting yields based on El Niño phase and planting date. These tools are available at http://www.agroclimate.org/tools. The leaf-wilt risk tool is also available at this site. The planting date tool can help you determine the optimal time to plant based on your farm management practices. A screen capture of the planting date tool is shown below indicating the value of planting early for highest likelihood of maximum yield. La Niña years and neutral years in general provide higher yields than El Niño years, so that is a hopeful sign for this coming growing season.


AgroClimate
A Service of the Southeast Climate Consortium
Current Climate Phase: Neutral
El Niño fails to materialize in the Pacific Ocean
Planting Date Planner
« Back to tools
Yield Probability
Phenology Table / Freeze probability
PEANUT, county: TIFT (GA) , NEUTRAL years
Select planting date(s):
Apr 16
Apr 23
May 1
May 8
May 15
May 22
May 29
Jun 5
Jun 12
Select crop
Select variety
Select location
State:
GA
County:
IRWIN
LEE
MILLER
MITCHELL
SEMINOLE
SUMTER
TATTNALL
TERRELL
TIFT
WORTH
Select soil
Irrigation management
Select nitrogen
Select ENSO phase
About crop yield risk
Yield
Probability (%)
100
83
67
50
33
17
0
Low yield
Median yield
High yield
Apr 16
May 1

SOIL FERTILITY UPDATE

Glen Harris

1) Lime, Gypsum or Calcium Chloride Through the Pivot ? - Glen Harris, John Beasley and Julie Howe (Auburn University)

If you look at the history of the recommendations for providing calcium to the pegging zone of a peanut, originally the recommendation was to apply 1000 lb/a of gypsum or the equivalent (broadcast or banded) at bloomtime. This was to be applied only if you did not have at least 500 lb Ca/a and a Ca:K ratio of at least 3:1 in a soil sample taken from the pegging zone soon after the peanuts emerge. Since calcium is super critical to germination, it has also always been recommended that any peanut being produced for seed should receive 1000 lb/a gypsum at early bloom regardless of pegging zone Ca and K levels.

Then about 15 years ago, research was done at UGA using lime at planting to provide calcium to the pegging zone of peanut. A few very important points about this recommendation include: 1) **this method is only supposed to be used when lime is recommended according to soil sample results**. If lime is used when it is not called for it can raise the pH above recommended levels and cause micronutrient deficiencies such as with manganese, and 2**) if you use lime it must be applied at planting and it should not be deep turned.** The calcium in lime is not as soluble as the calcium in gypsum. Therefore, if lime is applied at bloomtime it will not have enough time to "breakdown" and be absorbed into the developing peanuts.

And finally, over the last 3 years, a new technique of using liquid calcium chloride or calcium thiosulfate through the pivot during peak pod fill (60 to 90 days after planting) has been tested at UGA and has shown promise for providing calcium to the pegging zone. If gypsum is in short supply this method may be a valuable alternative. Calcium chloride has also been tested in dryland situations by applying in a band behind the presswheel at planting. This may also be a technique to consider.

Below you will find a number some common questions concerning providing calcium to the pegging zone with up-to-date answers.

a) Q: Is there any difference between gypsum materials available?

A: No, not as far as the ability to supply calcium to the pegging zone. In recent field tests, USG 500 (mined/granular) , PCS Wetbulk (phosphogyp by-product, AgriCal (flue gas desulfurized or "smokestack"), recycled wallboard, and even a new product called "Gypsoil" (citric acid production by-product) were tested and seem to perform equally.

Selection can be made on factors such as product availability, how well the material handles etc.

b) Q: Is it better to use lime or gypsum for dryland peanuts ?

A: Gypsum ! During the last 2 years, gypsum at bloomtime has outperformed lime at planting as far as providing calcium to the pegging zone. This makes sense when you think about it, i.e. since the calcium in lime is less soluble than the calcium in gypsum under limited water situations in dryland production, the calcium in lime may not become as available compared to when it is under irrigation.

c) Q: Have the calcium recommendations changed since the shift from small-seeded to large-seeded runners?

A: Technically no. Research data from 2008 – 2010 showed that both the 500 lb/a calcium in the pegging zone requirement and the 1000 lb/a gypsum application rate overall, appear to hold for large-seeded runners. However, it is clear that following this recommendation is more important for large-seeded runners, and especially for GA 06G. Also, when the pegging zone calcium is between 500 and 750 lb/a you are in a "grey area" and again this is where calcium chloride or calcium thisosulfate applied through center pivots may be most benficial.

d) Q: Are foliar calcium applications recommended on peanuts?

A: No ! No ! No ! This one is abundantly clear. Foliar calcium products recommended in the 1 qt/a range that are sprayed on the leaves in total spray volumes of 10-20 gal/ acre do not provide enough calcium….PLUS, even if they did, the calcium does not get translocated from the leaves to the developing pods.

e) Q: Isn't putting calcium chloride or calcium thisoulfate liquids through a center pivot a foliar application then? I mean the water hits the leaves right?

A: No ! No ! No ! Putting these "liquid calciums" through a center pivot is a soil applied application. You are putting so much water out per acre that even though the water does hit the leaves, initially, the majority of it runs off and is basically applied to the soil. Think of it this way, when you foliar feed, you apply approximately 10 gal/a final spray volume and try to keep the spray on the leaf. When you apply 1 acre-inch of water you are applying approximately 27,000 gallons !Huge difference !

f) Q: So do you recommend putting calcium chloride or calcium thiosulfate through center pivots? And does it replace using gypsum?

A: Yes and No ! Based on research data from the last three years, calcium chloride and calcium thiosulfate applied through the a center pivot (to supply approximately 25 lb/a of highly soluble calcium during bloom) improved yield, calcium in the seed and germination compared to the untreated check. However, these products do not increase the soil test calcium levels after harvest near as high as gypsum, so in that regard they do not replace gypsum. Again, these two products applied with center pivot irrigation appear to have the best fit when the pegging zone calcium levels are in that "grey area"of 500- 750 lb Ca/a. If your pegging zone calcium level is below 500 lb/a then gypsum should be applied instead.

g) Q: Can I apply gypsum at planting ?

A: This is not recommended at this point since there is always a chance that with enough rain or irrigation water early on, the calcium in gypsum could leach below the pegging zone. This is especially true on deep sandy soils.

h) Q: Should I split my gypsum applications and put some on at planting and some at early bloom?

A: This is also not recommended at this time. However, research studies are being conducted to see if there may be a benefit to this timing of application.

i) Q: How late is too late to put out gypsum ?

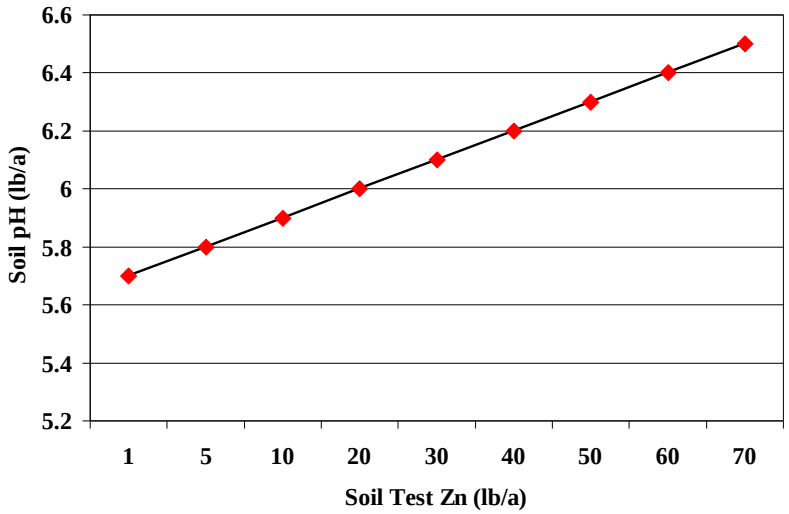
A: Gypsum should be applied at "early bloom" or approximately 30-45 days after planting depending on growing conditions. Once you get past 100 days after planting, the majority of pods have probably already absorbed the proper amount of calcium or not. Plus, after 100 days after planting, running over lapped vines is not desirable.

2) Lime to Avoid Zinc Toxicity--- but Don't Overlime and Cause Manganese Deficiency

Liming acid soils to a pH of 6-6.3 is critical for most crops but especially to peanut for two reasons, 1) it maximizes nodulation and N fixation and 2) it helps avoid zinc toxicity.

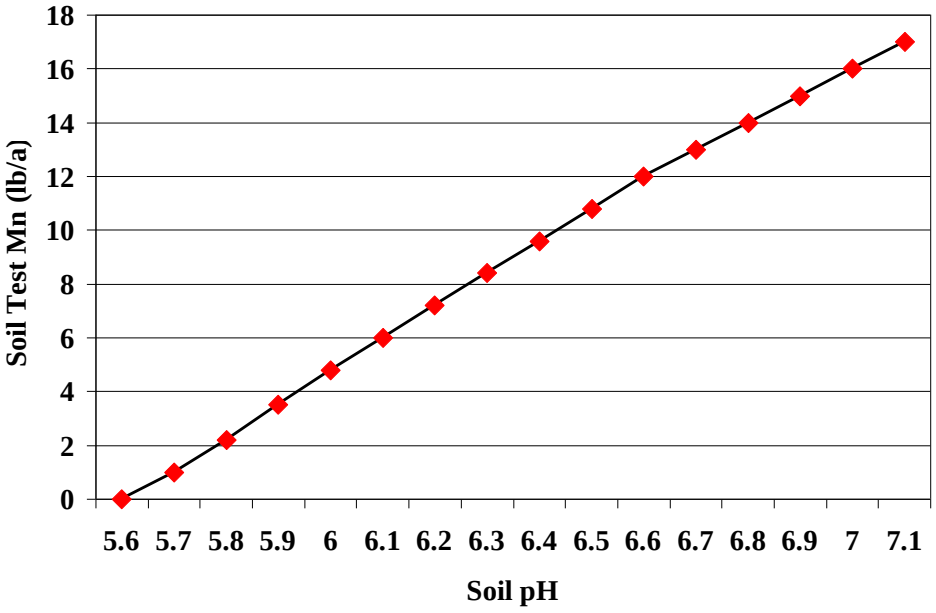
Peanuts are sensitive very sensitive to zinc toxicity. The combination of a low pH and a high soil test zinc will result in purpling and splitting up the stem of the peanut at the soil line and if severe enough death of the plant. This problem is often confused with herbicide injury or disease. There were a number of severe cases of zinc toxicity of peanut reported by Georgia county agents in 2012. Since zinc is less available at higher pH, the best way to avoid this situation is to maintain proper pH levels according to soil test zinc levels (Figure 2).

Figure 2. Relationship between pH and zinc availability. Maintain soil pH levels above the line to help avoid zinc toxicity.
Source: Davis-Carter, J. et al. 1991 Peanut Research Extension report



On the otherhand, if you over-lime and get your soil pH too high (i.e. above 7.0) you may tie up manganese and cause a manganese deficiency. The symptom of manganese deficiency on peanut is “interveinal chlorosis” or yellowing between the veins. This is often seen in small patches on the edge of fields where lime is piled before spreading. Also, there are other things that can cause interveinal chlorosis of a peanut so the problem should manganese deficiency should be confirmed with tissue and soil testing before corrective measures are taken. If detected early enough, manganese deficiency may be corrected with foliar sprays. It usually takes more than one application and if not detected early enough, yield and quality reductions can result. The best way to avoid this situation is to maintain the proper soil test manganese level according to your pH (Figure 1).

Figure 1. Relationship between pH and manganese availability. Maintain soil test manganese levels above the line to help avoid manganese deficiency.
Source: Soil Test Handbook for Georgia



Boron (B) is an essential micronutrient that is important to flowering, pollination, and fruiting of the peanut plant. The standard **UGA recommendation of 0.5 lb B/A**, applied in two 0.25 lb/A foliar applications with early fungicide sprays. Single applications of 0.5 lb B/A can be used but include a greater risk of foliar burn. Since B leaches readily through sandy soils, foliar applications have always been considered the most effective and efficient application method.

Numerous B fertilizer materials are currently available. Most are either derived from boric acid or sodium borate and can be either in the liquid or wettable powder form. There are many “additives” used with these base B materials such as nitrogen and complexing agents designed to improve efficiency of uptake. However, extensive field testing over recent years has proven that all of the B fertilizers currently on the market are equally effective in terms of plant nutrition. Therefore, choice of B fertilizers should be made on price per pound of B.

In addition, at least one boron fertilizer currently sold in Georgia is recommended at application rates well below the recommended 0.5 lb B/A rate -- in fact the labeled rate only provides 0.025 lb B/A !. **As far as fulfilling the base recommendation for B, any boron fertilizer recommended at a rate that does not provide at least 0.25 lb B/a should be considered uneconomical !**

UNIVERSITY OF GEORGIA PEANUT BREEDING PROGRAM

Bill Branch

In the U.S., there are four market types of peanut: runner, virginia, spanish, and valencia. Historically, all four market types have been grown in the southeast. However, the runner-type has been predominately grown for the past several decades. More recently, spanish and virginia-types have also been grown occasionally under contracts, and valencia-types are grown on small but consistent acreage annually for the fresh market boiling trade. Within each of these four U.S. market types, there are several new and improved varieties that have been developed and released from the University of Georgia Peanut Breeding Program.

RUNNER-TYPE:

"GEORGIA-06G" is a high-yielding, TSWV-resistant, runner-type peanut variety that was released in 2006. It was developed at the University of Georgia, Coastal Plain Experiment Station in Tifton, GA. Georgia-06G has a high level of resistance to tomato spotted wilt virus (TSWV). In multilocation tests conducted in Georgia during the past several years, Georgia-06G was likewise found to be among the lowest in TSWV disease incidence and highest in yield, grade, and dollar value return per acre compared to all of the other runner-types. Georgia-06G is a large-seeded runner-type variety with growth habit and medium maturity similar to Georgia Green. It also has very good stability and a wide-range of adaptability.

"GEORGIA GREENER" is a high-yielding, TSWV-resistant, runner-type peanut variety that was released in 2006. It was developed at the University of Georgia, Coastal Plain Experiment Station in Tifton, GA. Georgia Greener has a high level of resistance to tomato spotted wilt virus (TSWV) and CBR resistance. In multilocation tests conducted in Georgia during the past several years, Georgia Greener was found to be among the lowest in TSWV disease incidence and highest in yield, grade, and dollar value return per acre compared to all of the other runner-types. Georgia Greener is more of a regular runner-type seed size variety with growth habit and medium maturity similar to Georgia Green. It also has very good stability and a wide-range of adaptability.

"GEORGIA-07W" is a high-yielding, TSWV-resistant, white mold-resistant, runner-type peanut variety that was released in 2007. It was developed at the University of Georgia, Coastal Plain Experiment Station in Tifton, GA. Georgia-07W has a high level of resistance to both diseases, tomato spotted wilt virus (TSWV) and white mold or stem rot. In multilocation tests conducted in Georgia during the past several years, Georgia-07W was found to be among the lowest in TSWV incidence and total disease incidence, highest

in yield, grade, and dollar value return per acre. Georgia-07W is a large-seeded runner-type variety with a runner growth habit and medium maturity. It also has very good stability and a wide-range of adaptability.

"GEORGIA-09B" is a high-yielding, high-oleic, TSWV-resistant, medium-seeded, runner-type peanut variety that was released in 2009. It was developed at the University of Georgia, Coastal Plain Experiment Station, Tifton, GA. Georgia-09B originated from the first backcross made with **'Georgia Green'**, as the recurrent parent. During past years averaged over several multilocation tests in Georgia, Georgia-09B had significantly less TSWV disease incidence, higher yield and percent TSMK grade, larger seed size, and greater dollar value return per acre compared to Georgia Green. Georgia-09B has also showed significantly higher TSMK grade percentage than 'Florida-07'and higher dollar value. It was also found to have a medium runner seed size as compared to the larger high-oleic, runner-type variety, Florida-07. Georgia-09B combines the excellent roasted flavor of Georgia Green with the high-oleic trait for longer shelf-life and improved oil quality of peanut and peanut products.

"GEORGIA-10T" is a new high-yielding, TSWV-resistant, large-seeded, runner-type peanut variety that was released by the Georgia Agricultural Experiment Stations in 2010. It was developed at the University of Georgia, Coastal Plain Experiment Station, Tifton, GA. During three-years averaged over multilocation tests in Georgia, Georgia-10T had significantly less mid-season TSWV incidence and late-season total disease (TD) incidence, higher yield, grade, and dollar value return per acre compared to Georgia-01R. However, Georgia-10T is most similar to **Georgia-01R** in later maturity. During the past few years at multilocations in Georgia when planted early (mid-April) to increase TSWV disease pressure, Georgia-10T was again found to be among the lowest in TSWV incidence and TD incidence, highest in pod yield, highest in TSMK grade, and highest in dollar value return per acre compared to many other runner-type varieties, respectively. Georgia-10T should be an excellent variety for an earlier planting option in the southeast.

"GEORGIA-12Y" is a new high-yielding, TSWV-resistant and white mold-resistant, medium-seeded, runner-type variety that was released by the Georgia Agricultural Experiment Stations in 2012. It was developed at the University of Georgia, Coastal Plain Experiment Station, Tifton Campus. During three-years averaged over multilocation tests in Georgia, Georgia-12Y had significantly higher yield, dollar value return per acre, and number of seed per pound compared to Georgia-10T. However, Georgia-10T has a higher TSMK grade than Georgia-12Y. Georgia-12Y is most similar to Georgia-10T in later maturity. Both should be excellent varieties for an early-planting date option in the southeast U.S. peanut production area.

VIRGINIA-TYPE:

"GEORGIA-08V" is a high-yielding, high-oleic, TSWV-resistant, large-seeded, virginia-type peanut variety that was released by the Georgia Agricultural Experiment Station in 2008. It was developed at the University of Georgia, Coastal Plain Experiment Station, Tifton, GA. Georgia-08V has the high-oleic (O) and low linoleic (L) fatty acid ratio for improved oil quality. During the past several years averaged over multilocations tests in Georgia, Georgia-08V had significantly less TSWV disease incidence, higher yield and percent ELK, larger seed size, and greater dollar value return per acre compared to Gregory, Perry, and CHAMPS. Georgia-08V has also showed significantly higher yield, ELK percentage, and dollar value than **Georgia Hi-O/L**, and was also found to have the largest seed size of all of the virginia-type varieties tested, including **Georgia-05E**.

"GEORGIA-11J" is a new high-yielding, high-oleic, TSWV-resistant, large-podded and large-seeded, virginia-type peanut variety that was released by the Georgia Agricultural Experiment Stations in 2011. It was developed at the University of Georgia, Coastal Plain Experiment Station, Tifton, GA. Georgia-11J also has the high-oleic (O) and low-linoleic (L) fatty acid ratio for improved oil quality. Georgia-11J is similar to another high-oleic virginia-type cultivar 'Georgia-08V' in having low TSWV disease incidence, high pod yield, high total sound mature kernel (TSMK) grade percentage, and high dollar value return per acre. However, during several years averaged over multilocation tests in Georgia, Georgia-11J had significantly higher percent of jumbo pod size and higher percent of extra-large kernels (ELK) compared to the check cultivar 'Georgia-08V'. Georgia-11J was also shown to have a significantly greater seed weight than Georgia-08V which was previously found to have the largest seed size of several other virginia-type cultivars.

SPANISH-TYPE:

"GEORGIA-04S" is the most recent high-oleic small-seeded peanut cultivar that was released in 2004 by the Georgia Agricultural Experiment Station. Georgia-04S is intended for the same confectionary or candy market as used by spanish-types. Similar to **Georgia Browne**, Georgia-04S would also be excellent for the roasted or peanut butter trade as well. It has pods and seed size similar to other spanish market type varieties. Georgia-04S has shown a significantly higher yield, TSMK grade, and dollar value per acre compared to all other leading spanish varieties during the past twelve-year (2000-2011) in Georgia. Georgia-04S also has significantly better TSWV-resistance than these other spanish varieties.

VALENCIA-TYPE:

"GEORGIA VALENCIA" is a valencia-type peanut variety that was released in 2000 by the Georgia Agricultural Experiment Stations. **"Georgia Red"** is a similar valencia-type variety that was jointly released by the Georgia Agricultural Experiment Stations and USDA-ARS in 1986. Both Georgia Valencia and Georgia Red are excellent choices for the fresh-market boiling trade in the Southeast because of their high yield performance, large fruit size, and compact bunch growth habit. In Georgia Peanut Variety Tests, the eleven-year (2001-2011) average performance shows Georgia Valencia and Georgia Red to have higher yields, grades, and dollar values compared to Valencia McRan, New Mexico Valencia C, New Mexico Valencia A, H & W Val 101, and H & W Val 102. Both Georgia Valencia and Georgia Red also have better disease tolerance with similar maturity as these other valencia varieties.

Multiple years and multiple locations are recommended for variety comparisons. The following tables present such combined variety test results in Georgia across years and locations for each of the four U.S. market types.

Table 1. THREE-YEAR AVERAGE DOLLAR VALUE RETURN PER ACRE OF RUNNER-TYPE PEANUT VARIETIES ACROSS MULTILOCATIONS IN GEORGIA, 2010-12.

Runner Variety	Gross Dollar Values ($/a)			3-Yr Mean
	2010	2011	2012	
Georgia-06G	754	906	974	878
Georgia-12Y	764	913	946	874
Georgia-07W	730	896	941	856
Georgia Greener	714	875	910	833
Georgia-10T	731	823	884	813
*Georgia-09B	726	819	877	807
*Florida-07	695	824	857	792
*FloRun™ '107'	660	827	852	780
Tifguard	673	789	821	761
Georgia Green	654	757	814	742
*Georgia-02C	643	751	776	723
*TUFRunner™ '727'	-	862	825	-

*** High-Oleic Varieties**

Table 2. TWO-YEAR AVERAGE YIELD (LB/A) OF 12 RUNNER-TYPE PEANUT VARIETIES UNDER IRRIGATION AND NONIRRIGATION AT MULTILOCATIONS IN GEORGIA, 2011-12.

Runner	Tifton		Plains		Midville	
Variety	Irrig.	Nonirrig.	Irrig.	Nonirrig.	Irrig.	Nonirrig.†
Georgia-06G	5480	5252	6038	3994	6050	5255
Georgia-12Y	6204	5722	5357	3696	6335	4993
Georgia-07W	5544	4829	5870	4053	6122	4761
Georgia Greener	5172	5163	5302	3523	6030	4653
Georgia-10T	5688	5026	4069	2947	5558	4439
Georgia-09B	5300	4658	5296	3460	6134	4617
Florida-07	5773	5262	5412	3622	5764	4644
FloRun™ '107'	5482	4422	5594	3674	5928	4205
Tifguard	5150	4912	4618	3188	5729	3774
Georgia Green	4972	4684	4958	2956	5440	4772
Georgia-02C	4644	3794	5118	3238	5074	4835
TUFRunner ™ '727'	5191	4198	5229	3392	5786	4914

† Only 1-yr data, missing 2011.

Table 3. THREE-YEAR (29-TESTS) AVERAGE DISEASE INCIDENCE, POD YIELD, TSMK GRADE, SEED COUNT, AND DOLLAR VALUES OF NINE RUNNER-TYPE PEANUT VARIETIES AT MULTILOCATIONS IN GEORGIA, 2009-11.

Runner Variety	TSWV (%)	TD (%)	Yield (lb/a)	TSMK (%)	Seed (no./lb)	Value ($/a)
Georgia-06G	7	15	4498	74	656	820
Georgia-07W	8	16	4477	74	665	818
Georgia-10T	7	13	4221	76	692	794
Georgia Greener	9	17	4284	74	706	780
*Georgia-09B	9	19	4267	74	726	774
*Florida-07	15	24	4449	70	633	768
*Georgia-02C	10	19	3976	74	785	724
Tifguard	12	21	4056	72	653	724
Georgia Green	12	26	3791	73	810	684

* High-Oleic

Table 4. THREE-YEAR (24 TESTS) AVERAGE DISEASE INCIDENCE, POD YIELD, TSMK GRADE, SEED COUNT, AND DOLLAR VALUE OF GEORGIA-12Y VS. GEORGIA-10T AT MULTILOCATIONS IN GEORGIA, 2009-11.

Runner Variety	TSWV (%)	TD (%)	Yield (lb/a)	TSMK (%)	Seed (no./lb)	Value ($/a)
Georgia-12Y	4	10	4935	72	726	877
Georgia-10T	4	9	4390	76	690	818

Table 5. THREE-YEAR (29 TESTS) AVERAGE FIELD PERFORMANCE OF GEORGIA-08V AND GEORGIA-11J VS. FIVE OTHER VIRGINIA-TYPE PEANUT VARIETIES IN GEORGIA, 2009-11.

Virginia Variety	Disease (%)	Yield (lb/a)	TSMK (%)	Value ($/a)
*Georgia-08V	21	4469	71	835
*Georgia-11J	20	4353	70	796
Bailey	18	4211	68	756
*Florida Fancy	29	3946	67	695
CHAMPS	30	3830	67	677
Gregory	31	3655	65	625
Perry	37	3448	69	622

* High-Oleic

Table 6. TWELVE-YEAR AVERAGE YIELD, GRADE, SEED SIZE AND DOLLAR VALUE OF FIVE SPANISH-TYPE PEANUT VARIETIES IN GEORGIA, 2000-11.

Spanish Variety	Yield (lb/a)	TSMK (%)	Seed (no./lb)	Value ($/a)
*Georgia-04S	3927	72	1123	773
Tamspan 90	2854	66	1135	530
*OLin	2208	65	1182	401
Pronto	1933	65	1131	354
Spanco	1947	63	1174	343

* High-Oleic

Table 7. ELEVEN-YEAR AVERAGE YIELD, GRADE, SEED SIZE AND DOLLAR VALUE OF

FIVE VALENCIA-TYPE PEANUT VARIETIES IN GEORGIA, 2001-11.

Valencia Variety	Yield (lb/a)	TSMK (%)	Seed (no./lb)	Value ($/a)
Georgia Valencia	2571	58	803	407
Georgia Red	2011	63	980	348
N.M. Val. C.	1617	56	1201	252
Val. McRan	1637	55	1193	252
N.M. Val. A.	1551	54	1238	235

2012 University of Georgia Statewide Variety Trials for Peanut

Don Day

Tifton, Georgia:
Yield and Grade Performance
Peanut Variety Trial, 2012, Irrigated

Variety	Digging Date	Yield	TSMK	OK	DK	ELK	Seed	Fancy
		lbs/A	%	%	%	%	no./lb	%
Spanish Types								
GA 082549[1]	09/26	**4764**	74.0	5.0	0.0	0.0	924	0.0
GA 082548 [1]	09/26	**4541**	75.0	4.5	0.0	0.0	902	0.0
Georgia Browne	09/18	**4450**	73.0	5.5	0.0	0.0	1024	0.0
GA 082550-MS10[1]	10/09	**4430**	77.5	4.0	0.0	0.0	943	0.0
Georgia-04S	09/18	4365	72.5	5.5	0.5	0.0	1069	0.0
Tamspan 90	08/31	4041	69.0	6.0	1.0	0.0	989	0.0
Tamnut OL06	08/31	3869	66.0	4.5	1.0	0.0	920	0.0
OLin	08/31	3270	67.0	6.5	1.0	0.0	1026	0.0
Pronto	08/17	2983	72.0	4.5	1.0	0.0	940	0.0
Spanco	08/17	2956	72.0	3.5	1.0	0.0	967	0.0
Average	09/10	3967	71.8	5.0	0.6	0.0	970	0.0
LSD at 10% Level		342	2.8	1.4	0.5	-	72	-
C.V. %		10.0	-	-	-	-	-	-
Valencia Types								
Georgia Valencia	08/31	**4069**	64.0	3.5	2.0	0.0	677	0.0
Georgia Red	08/31	3346	66.0	5.5	2.5	0.0	832	0.0
N.M. Valencia A	08/17	2596	65.0	6.5	0.5	0.0	1024	0.0
H & W Valencia 136	08/17	2520	65.5	6.0	1.0	0.0	981	0.0
Valencia McRan	08/17	2481	64.5	6.0	1.0	0.0	1005	0.0
N.M. Valencia C	08/17	2387	64.0	6.5	2.0	0.0	991	0.0
Average	08/22	2899	64.8	5.7	1.5	0.0	918	0.0
LSD at 10% Level		342	2.8	1.4	0.5	-	72	-
C.V. %		10.0	-	-	-	-	-	-

1. Advanced Georgia breeding line.
Bolding indicates entries not significantly different from highest yielding entry based on Fisher's protected LSD (P = 0.10).

Planted:	May 10, 2012.
Seeding Rate:	6 seed/row foot in 36" rows.
Fertilization:	0 lb N, 0 lb P_2O_5, 0 lb K_2O, and 1500 lb/acre gypsum.
Soil Test:	P = Very High, K = High, and pH = 6.5.
Soil Type:	Tifton sandy loam.
Previous Crop:	Cotton

Management:	Disked, moldboard plowed, and rototilled; Sonalan, Basagran, Storm, and Select used for weed control; Thimet 20G used for insect control; Artisan and Chlorothalonil used for fungal control; irrigated 6.8 inches.

Test conducted by A. Coy, R. Brooke, and D. Dunn.

Tifton, Georgia:
Yield and Grade Performance
Peanut Variety Trial, 2012, Irrigated

Variety	Digging Date	Yield	TSMK	OK	DK	ELK	Seed	Fancy
		lbs/A	%	%	%	%	no./lb	%
Runner Types								
Florida-07	09/26	**6286**	72.5	5.0	0.0	0.0	712	0.0
Georgia-10T	10/09	**6102**	77.0	4.5	0.0	0.0	743	0.0
Georgia-07W	09/26	**5974**	75.0	3.5	0.0	0.0	667	0.0
Georgia-12Y	10/09	**5974**	75.0	3.5	0.0	0.0	690	0.0
GA 082524[1]	10/09	**5926**	77.0	3.5	0.0	0.0	857	0.0
GA 082522[1]	09/26	5760	76.0	4.5	0.0	0.0	897	0.0
GA 072716[1]	09/26	5696	73.5	5.0	0.5	0.0	837	0.0
Georgia-09B	09/18	5651	75.5	3.5	0.0	0.0	756	0.0
Georgia-06G	09/18	5614	75.5	3.5	0.0	0.0	663	0.0
FloRun™ '107'	09/26	5530	70.0	7.0	0.0	0.0	791	0.0
Georgia Green	09/18	5460	75.0	5.0	0.0	0.0	819	0.0
TUFRunner™ -'727'	09/18	5400	75.0	3.5	0.0	0.0	687	0.0
GA 082546[1]	10/09	5318	77.5	3.5	0.0	0.0	881	0.0
Tifguard	09/18	5239	74.0	3.0	0.0	0.0	643	0.0
Georgia Greener	09/18	5158	77.0	3.5	0.0	0.0	734	0.0
GA 072523[1]	09/18	5140	76.5	2.5	0.5	0.0	675	0.0
GA 072515[1]	09/18	4743	77.0	3.0	0.0	0.0	754	0.0
GA 082549[1,2]	09/26	4719	75.0	4.5	0.0	0.0	817	0.0
GA 072514[1]	09/18	4707	78.5	2.5	0.0	0.0	759	0.0
Georgia-02C	09/26	4683	73.0	4.5	0.0	0.0	679	0.0
GA 082550-MS10[1,2]	10/09	4193	76.0	4.0	0.0	0.0	929	0.0
Average	09/26	5394	75.3	4.0	0.0	0.0	761	0.0
LSD at 10% Level		470	2.0	1.4	-	-	79	-
C.V. %		9.2	-	-	-	-	-	-
Virginia Types								
Georgia-08V	09/18	**5935**	74.5	1.0	1.0	58.0	463	85.0
CHAMPS	09/06	**5641**	71.0	2.5	0.0	44.5	464	84.0
Gregory	09/06	**5609**	69.5	1.5	0.0	49.0	471	91.5
Florida Fancy	09/18	5191	70.0	1.5	0.5	47.0	453	91.0
Georgia-11J	10/09	5185	77.0	2.0	0.5	53.0	421	70.0
Perry	09/06	5173	71.0	2.0	0.0	42.5	522	74.5
Bailey	09/06	5155	70.0	2.5	0.0	42.5	515	79.5
Sugg	09/06	5079	70.5	2.0	0.5	46.5	569	82.5
Titan	09/06	4867	64.0	2.0	1.0	40.5	458	83.5
Average	09/12	5315	70.8	1.9	0.4	47.1	482	82.4
LSD at 10% Level		470	2.0	1.4	-	3.2	79	2.0
C.V. %		9.2	-	-	-	-	-	-

1. Advanced Georgia breeding line.
2. Spanish Type.

Bolding indicates entries not significantly different from highest yielding entry based on Fisher's protected LSD (P = 0.10).

Planted:	May 10, 2012.
Seeding Rate:	6 seed/row foot in 36" rows.
Fertilization:	0 lb N, 0 lb P_2O_5, 0 lb K_2O, and 1500 lb/acre gypsum.
Soil Test:	P = Very High, K = High, and pH = 6.5.
Soil Type:	Tifton sandy loam.
Previous Crop:	Cotton.
Management:	Disked, moldboard plowed, and rototilled; Sonalan, Basagran, Storm, and Select used for weed control; Thimet 20G used for insect control; Artisan and Chlorothalonil used for fungal control; irrigated 6.8 inches.

Test conducted by A. Coy, R. Brooke, and D. Dunn.

Plains, Georgia:
Yield and Grade Performance
Peanut Variety Trial, 2012, Irrigated

Variety	Digging Date	Yield	TSMK	OK	DK	ELK	Seed	Fancy
		lbs/A	%	%	%	%	no./lb	%
Runner Types								
Georgia-07W	10/06	**6186**	73.0	4.5	0.5	0.0	622	0.0
Georgia-06G	09/24	**5870**	72.5	3.0	0.5	0.0	621	0.0
GA 072716[1]	10/06	**5802**	73.0	4.5	0.0	0.0	809	0.0
GA 082522[1]	10/06	**5801**	74.5	5.0	0.0	0.0	780	0.0
FloRun™ '107'	10/06	5696	72.0	3.5	0.5	0.0	708	0.0
Georgia-12y	10/18	5608	70.0	5.0	0.0	0.0	713	0.0
Florida-07	10/06	5605	67.0	6.0	0.5	0.0	576	0.0
Georgia Greener	09/24	5369	73.5	3.0	0.5	0.0	654	0.0
TUFRunner™ -'727'	09/24	5288	70.0	4.5	0.5	0.0	624	0.0
Georgia-09B	09/24	5258	75.5	2.0	0.0	0.0	639	0.0
GA 072514[1]	09/24	5122	76.5	2.5	0.5	0.0	725	0.0
GA 082549[1,2]	10/06	5090	71.0	6.0	0.5	0.0	806	0.0
Georgia Green	09/24	5022	72.5	4.0	0.5	0.0	768	0.0
GA 082524[1]	10/18	4946	75.0	4.0	0.0	0.0	830	0.0
Georgia-02C	10/06	4766	71.5	5.0	0.5	0.0	772	0.0
Tifguard	09/24	4704	70.0	4.5	0.0	0.0	609	0.0
GA 082546[1]	10/18	4681	72.5	6.0	0.0	0.0	843	0.0
GA 072515[1]	09/24	4468	71.5	5.0	1.0	0.0	718	0.0
GA 082550-MS10[1,2]	10/18	4375	71.5	6.5	0.0	0.0	905	0.0
GA 072523	09/24	4362	74.0	2.5	0.0	0.0	626	0.0
Georgia-10T	10/18	4011	75.0	3.5	0.0	0.0	675	0.0
Average	10/04	5144	72.5	4.3	0.3	0.0	715	0.0
LSD at 10% Level		440	3.0	2.4	N.S.[3]	-	49	-
C.V. %		9.5	-	-	-	-	-	-
Virginia Types								
Georgia-08V	09/24	**5311**	69.5	5.0	0.5	54.0	447	89.0
Florida Fancy	09/24	**4999**	65.5	2.5	0.0	42.0	485	86.0
Georgia-11J	10/18	**4976**	73.5	2.0	0.0	51.5	419	68.0
Perry	09/15	4213	70.5	2.0	0.5	45.5	518	79.5
Gregory	09/15	3971	67.0	1.5	0.0	51.5	429	92.5
CHAMPS	09/15	3954	71.0	1.0	0.0	43.5	466	82.5
Bailey	09/15	3639	69.5	2.0	0.0	43.5	485	74.5
Sugg	09/15	3325	68.5	2.0	1.0	44.5	458	85.5
Titan	09/15	3140	64.0	2.5	0.0	41.5	439	89.0
Average	09/21	4170	68.8	2.3	0.2	46.4	460	82.9
LSD at 10% Level		440	3.0	2.4	N.S.	4.0	49	5.6
C.V. %		9.5	-	-	-	-	-	-

1. Advanced Georgia breeding line.
2. Spanish Type.

Bolding indicates entries not significantly different from highest yielding entry based on Fisher's protected LSD (P = 0.10).

Planted: May 16, 2012

Seeding Rate: 6 seed/row foot in 36" rows

Fertilization: 0 lb N, 0 lb P_2O_5, and 0 lb K_2O/acre

Soil Test: P = High, K = Very High, and pH = 6.1

Soil Type: Greenville sandy loam

Previous Crop: Corn

Management:
Disked, moldboard plowed, and rototilled;
Strongarm, Sonalan, Dual, Parazone, and Basagran used for weed control;
Thimet 20G and Lorsban used for insect control;
Bravo, Folicur, Artisan, Abound, and Provost used for fungal control;
irrigated 7.0 inches.

Test conducted by A. E. Coy, R. Pines, R. Brooke, D. Dunn, D. Pearce, and W. Jones

Midville, Georgia:
Yield and Grade Performance
Peanut Variety Trial, 2012, Irrigated

Variety	Digging Date	Yield	TSMK	OK	DK	ELK	Seed	Fancy
		lbs/A	%	%	%	%	no./lb	%
Runner Types								
Georgia Greener	10/04	**5470**	75.5	3.5	0.0	0.0	754	0.0
GA 072716[1]	10/15	**5430**	75.5	3.0	0.0	0.0	878	0.0
TUFRunner™ -'727'	10/04	**5383**	73.0	3.0	0.0	0.0	707	0.0
Georgia-09B	10/04	**5380**	73.5	3.5	0.0	0.0	728	0.0
Georgia-06G	10/04	**5285**	76.0	2.0	0.0	0.0	702	0.0
Georgia-12Y	10/15	**5212**	75.0	2.0	0.0	0.0	791	0.0
GA 072523[1]	10/04	**5132**	75.0	2.5	0.0	0.0	624	0.0
Georgia-07W	10/15	**5084**	76.5	2.0	0.5	0.0	727	0.0
Georgia Green	10/04	4960	73.0	4.0	0.0	0.0	765	0.0
FloRun™ '107'	10/15	4944	74.0	4.0	0.0	0.0	817	0.0
GA 082522[1]	10/15	4919	77.5	3.5	0.0	0.0	838	0.0
GA 072514[1]	10/04	4907	76.5	2.0	0.0	0.0	790	0.0
Florida-07	10/15	4822	73.5	3.0	0.0	0.0	718	0.0
GA 082524[1]	10/15	4748	75.5	4.5	0.5	0.0	810	0.0
GA 082546[1]	10/15	4745	74.0	4.5	0.0	0.0	843	0.0
GA 072515[1]	10/04	4717	74.0	3.5	0.0	0.0	700	0.0
Tifguard	10/04	4690	73.0	4.0	0.0	0.0	682	0.0
Georgia-10T	10/15	4657	77.0	2.5	0.0	0.0	741	0.0
GA 082550-MS10[1,2]	10/15	4314	75.0	3.5	0.0	0.0	898	0.0
GA 082549[1,2]	10/15	4212	74.0	4.5	0.0	0.0	891	0.0
Georgia-02C	10/15	4155	76.5	3.0	0.0	0.0	846	0.0
Average	10/10	4913	74.9	3.2	0.0	0.0	773	0.0
LSD at 10% Level		439	2.1	1.0	N.S.[3]	-	56	-
C.V. %		9.2	-	-	-	-	-	-
Virginia Types								
Georgia-08V	10/04	**6696**	73.5	1.5	0.0	39.5	505	76.0
Georgia-11J	10/15	6080	74.5	1.0	0.0	55.0	394	72.0
Bailey	09/28	5405	71.0	2.0	0.0	31.0	546	80.0
Gregory	09/28	5218	68.0	1.0	1.0	46.5	480	89.5
Sugg	09/28	5109	69.5	2.0	0.5	33.5	534	86.0
Florida Fancy	10/04	4881	68.5	3.0	0.5	25.0	588	63.5
Perry	09/28	4710	69.5	2.0	1.0	29.5	566	75.5
CHAMPS	09/28	4461	68.5	2.0	1.0	32.5	499	83.0
Titan	09/28	3717	62.5	2.5	1.5	40.0	517	90.5
Average	10/01	5142	69.5	1.9	0.6	36.9	514	79.6
LSD at 10% Level		439	2.1	1.0	N.S.	3.7	56	4.3
C.V. %		9.2	-	-	-	-	-	-

1. Advanced Georgia breeding line.
2. Spanish Type.
3. The F-test indicated no statistical differences at the alpha = 0.10 probability level; therefore an LSD value was not calculated.

Bolding indicates entries not significantly different from highest yielding entry based on Fisher's protected LSD (P = 0.10).

Planted: May 23, 2012

Seeding Rate: 6 seed/row foot in 36" rows

Fertilization: 0 lb N, 0 lb P_2O_5, 0 lb K_2O/acre

Soil Test: P = Very High, K = Very High, and pH = 5.7

Soil Type: Tifton sandy loam

Previous Crop: Corn

Management:
Disked and moldboard plowed;
Prowl, Valor, and Gramoxone used for weed control;
Headline, Folicur, Convoy, and Chlorothalonil used for fungal control
irrigated 6.25 inches.

Test conducted by A. E. Coy, R. Brooke, D. Dunn, K. Cobb, and R. Milton.

Tifton, Georgia:
Yield and Grade Performance
Peanut Variety Trial, 2012, Non-Irrigated

Variety	Digging Date	Yield	TSMK	OK	DK	ELK	Seed	Fancy
		lbs/A	%	%	%	%	no./lb	%
Runner Types								
Georgia-12Y	10/09	**6162**	73.0	4.0	0.5	0.0	686	0.0
Georgia-06G	09/26	**5924**	74.5	3.0	0.0	0.0	646	0.0
Tifguard	09/26	5475	72.5	4.0	0.0	0.0	633	0.0
Georgia Green	09/26	5354	73.0	4.0	0.5	0.0	803	0.0
Georgia-10T	10/09	5327	77.0	3.0	1.0	0.0	691	0.0
Georgia-09B	09/26	5288	75.5	2.0	0.0	0.0	649	0.0
Florida-07	10/09	5161	73.5	3.5	1.0	0.0	649	0.0
Georgia Greener	09/26	5147	74.0	3.0	1.0	0.0	686	0.0
GA 072716[1]	10/09	5037	73.5	4.0	1.5	0.0	859	0.0
GA 082522[1]	10/09	5034	76.5	3.5	0.5	0.0	836	0.0
GA 082524[1]	10/09	4916	78.0	3.5	0.0	0.0	871	0.0
Georgia-07W	10/09	4734	76.0	3.0	0.5	0.0	662	0.0
GA 082549[1,2]	10/09	4697	75.5	5.0	0.0	0.0	839	0.0
GA 082546[1]	10/09	4532	76.0	4.5	0.0	0.0	885	0.0
FloRun™ '107'	10/09	4460	73.0	5.0	1.0	0.0	786	0.0
GA 072523[1]	09/26	4350	73.5	4.0	0.5	0.0	666	0.0
TUFRunner™ -'727'	09/26	4280	71.5	3.0	1.5	0.0	662	0.0
GA 072515[1]	09/26	4241	73.5	4.0	1.5	0.0	724	0.0
GA 072514[1]	09/26	4126	77.0	4.0	0.0	0.0	767	0.0
GA 082550-MS10[1,2]	10/09	4102	75.5	3.5	1.0	0.0	893	0.0
Georgia-02C	10/09	3585	76.5	3.5	0.0	0.0	790	0.0
Average	10/03	4854	74.7	3.7	0.6	0.0	747	0.0
LSD at 10% Level		618	4.4	1.7	N.S.[3]	-	57	-
C.V. %		13.6	-	-	-	-	-	-
Virginia Types								
Georgia-08V	09/26	**5006**	73.5	1.0	0.5	59.0	463	81.5
Florida Fancy	09/26	**4889**	67.5	2.0	0.5	47.5	500	77.0
Georgia-11J	10/09	**4879**	75.0	1.0	1.0	59.0	404	77.0
CHAMPS	09/12	**4873**	68.0	3.5	1.0	38.5	454	74.0
Gregory	09/12	**4489**	66.0	2.5	0.5	41.5	480	87.0
Perry	09/12	**4465**	68.0	2.5	0.5	39.0	502	73.5
Bailey	09/12	4235	68.5	2.5	0.5	38.0	534	80.0
Sugg	09/12	4111	70.5	2.0	0.5	45.5	513	72.5
Titan	09/12	3733	59.0	4.0	1.0	30.0	521	75.0
Average	09/18	4520	68.4	2.3	0.7	44.2	485	77.5
LSD at 10% Level		618	4.4	1.7	N.S.	5.9	57	7.2
C.V. %		13.6	-	-	-	-	-	-

1. Advanced Georgia breeding line.
2. Spanish Type.
3. The F-test indicated no statistical differences at the alpha = 0.10 probability level; therefore an LSD value was not calculated.

Bolding indicates entries not significantly different from highest yielding entry based on Fisher's protected LSD (P = 0.10).

Planted: May 9, 2012

Seeding Rate: 6 seed/row foot in 36" rows

Fertilization: 0 lb N, 0 lb P_2O_5, 0 lb K_2O, and 1000 lb/acre gypsum

Soil Test: P = Medium, K = Medium, and pH = 5.7

Soil Type: Fuquay loamy sand

Previous Crop: Corn

Management:
Disked, moldboard plowed, and rototilled;
Sonalan, Basagran, Storm, and Select used for weed control;
Thimet 20G used for insect control;
Artisan and Chlorothalonil used for fungal control.

Test conducted by A. Coy, R. Brooke, and D. Dunn.

Plains, Georgia:
Yield and Grade Performance
Peanut Variety Trial, 2012, Non-Irrigated

Variety	Digging Date	Yield	TSMK	OK	DK	ELK	Seed	Fancy
		lbs/A	%	%	%	%	no./lb	%
Runner Types								
Georgia-07W	10/18	**4196**	72.5	2.5	0.5	0.0	691	0.0
Georgia-06G	10/18	**4172**	71.0	4.0	1.0	0.0	682	0.0
GA 072716[1]	10/18	**3893**	67.5	6.5	0.5	0.0	886	0.0
Georgia-12y	10/18	**3888**	70.0	4.0	0.5	0.0	786	0.0
GA 082522[1]	10/18	**3803**	69.0	6.0	0.5	0.0	849	0.0
GA 072514[1]	10/18	**3787**	72.0	4.5	1.0	0.0	765	0.0
FloRun™ '107'	10/18	**3777**	69.0	6.0	1.0	0.0	788	0.0
Florida-07	10/18	**3763**	69.0	3.0	1.5	0.0	642	0.0
Georgia Greener	10/18	**3739**	71.5	4.5	0.5	0.0	713	0.0
GA 082549[1,2]	10/18	3648	70.0	5.5	1.0	0.0	905	0.0
TUFRunner™ -'727'	10/18	3539	68.5	5.0	1.0	0.0	663	0.0
GA 072523[1]	10/18	3510	69.0	5.0	0.5	0.0	737	0.0
GA 072515[1]	10/18	3457	72.0	4.5	0.0	0.0	799	0.0
Georgia-09B	10/18	3337	67.5	7.0	1.0	0.0	804	0.0
Tifguard	10/18	3237	69.5	4.0	1.0	0.0	663	0.0
GA 082546[1]	10/18	3071	67.5	6.5	0.5	0.0	974	0.0
Georgia-10T	10/18	3045	73.0	3.5	1.0	0.0	690	0.0
Georgia-02C	10/18	3019	68.0	6.0	0.5	0.0	775	0.0
GA 082550-MS10[1,2]	10/18	3010	71.0	5.0	1.0	0.0	1052	0.0
Georgia Green	10/18	2949	71.5	4.5	1.0	0.0	835	0.0
GA 082524[1]	10/18	2683	70.5	5.5	1.0	0.0	907	0.0
Average	10/18	3501	70.0	4.9	0.8	0.0	791.0	0.0
LSD at 10% Level		468	3.7	N.S.[3]	1.0	-	87	-
C.V. %		14.6	-	-	-	-	-	-
Virginia Types								
Georgia-08V	10/18	**3643**	66.5	3.0	3.0	43.0	507	65.0
Bailey	10/06	**3494**	63.5	4.5	1.5	28.5	501	59.5
Georgia-11J	10/18	**3286**	67.5	4.5	1.5	43.0	439	56.0
Sugg	10/06	3117	61.5	4.5	2.0	34.0	505	63.5
CHAMPS	10/06	3107	60.5	5.5	2.0	31.0	485	66.5
Gregory	10/06	2715	59.5	4.0	2.0	31.5	585	73.5
Perry	10/06	2652	64.0	4.5	2.0	31.0	592	54.5
Florida Fancy	10/18	2448	64.5	3.0	2.5	20.0	528	57.5
Titan	10/06	2380	56.0	5.5	2.0	25.0	532	66.0
Average	10/10	2983	62.6	4.3	2.1	31.9	519	62.4
LSD at 10% Level	468	3.7	N.S.	1.0	1.4	87	4.8	
C.V. %		14.6	-	-	-	-	-	-

1. Advanced Georgia breeding line.
2. Spanish Type.
3. The F-test indicated no statistical differences at the alpha = 0.10 probability level; therefore an LSD value was not calculated.

Bolding indicates entries not significantly different from highest yielding entry based on Fisher's protected LSD (P = 0.10).

Planted: May 16, 2012

Seeding Rate: 6 seed/row foot in 36" rows

Fertilization: 0 lb N, 0 lb P_2O_5, and 0 lb K_2O/acre

Soil Test: P = Very High, K = Very High, and pH = 6.6

Soil Type: Greenville sandy loam

Previous Crop: Wheat

Management:
Disked, moldboard plowed, and rototilled;
Strongarm, Sonalan, Dual, Parazone, and Basagran used for weed control;
Thimet 20G and Lorsban used for insect control;
Bravo, Folicur, Artisan, Abound, and Provost used for fungal control.

Test conducted by A. E. Coy, R. Pines, R. Brooke, D. Dunn, D. Pearce, and W. Jones.

Midville, Georgia:
Yield and Grade Performance
Peanut Variety Trial, 2012, Non-Irrigated

Variety	Digging Date	Yield	TSMK	OK	DK	ELK	Seed	Fancy
		lbs/A	%	%	%	%	no./lb	%
Runner Types								
Georgia-06G	10/14	**5255**	76.5	1.5	0.0	0.0	651	0.0
Georgia-12Y	10/20	**4993**	75.5	2.0	0.0	0.0	693	0.0
TUFRunner™ -'727'	10/14	**4914**	74.5	3.0	0.0	0.0	698	0.0
Georgia-02C	10/20	**4835**	76.5	3.5	0.0	0.0	722	0.0
Georgia Green	10/14	4772	74.5	3.0	0.0	0.0	788	0.0
Georgia-07W	10/20	4761	77.0	2.5	0.0	0.0	671	0.0
GA 072716[1]	10/20	4742	76.5	2.5	0.0	0.0	805	0.0
GA 082524[1]	10/20	4734	76.5	3.5	0.0	0.0	796	0.0
GA 072523[1]	10/14	4660	77.0	2.0	0.0	0.0	693	0.0
Georgia Greener	10/14	4653	77.0	2.5	0.0	0.0	711	0.0
Florida-07	10/20	4644	73.5	3.5	0.0	0.0	664	0.0
GA 072515[1]	10/14	4634	75.5	4.0	0.0	0.0	770	0.0
Georgia-09B	10/14	4617	76.0	2.5	0.0	0.0	774	0.0
GA 082522[1]	10/20	4607	76.5	3.5	0.0	0.0	828	0.0
Georgia-10T	10/20	4439	79.0	2.0	0.0	0.0	745	0.0
GA 072514[1]	10/14	4260	77.5	2.0	0.0	0.0	786	0.0
FloRun™ '107'	10/20	4205	73.5	5.0	0.0	0.0	727	0.0
GA 082549[1,2]	10/20	4098	76.0	3.5	0.0	0.0	811	0.0
GA 082546[1]	10/20	3787	76.0	3.5	0.0	0.0	821	0.0
Tifguard	10/14	3774	75.0	3.0	0.0	0.0	710	0.0
GA 082550-MS10[1,2]	10/20	3739	75.0	4.5	0.0	0.0	910	0.0
Average	10/17	4530	76.0	3.0	0.0	0.0	751	0.0
LSD at 10% Level		459	2.5	1.2	-	-	59	-
C.V. %		10.3	-	-	-	-	-	-
Virginia Types								
Georgia-11J	10/20	**5729**	75.0	1.5	0.0	51.0	413	70.0
Bailey	10/04	**5522**	72.0	2.0	0.0	33.0	510	77.5
Florida Fancy	10/14	5238	72.5	1.5	0.5	36.0	507	69.5
Georgia-08V	10/14	5237	76.0	2.0	0.5	44.0	537	56.5
Sugg	10/04	5032	69.0	3.0	0.5	34.0	500	80.5
Gregory	10/04	4875	68.5	2.5	0.0	42.0	486	88.5
CHAMPS	10/04	4585	69.5	3.5	0.5	25.0	525	72.0
Perry	10/04	4436	71.0	2.0	0.5	27.5	552	69.0
Titan	10/04	3560	66.0	3.0	0.5	30.0	498	79.5
Average	10/08	4913	71.1	2.3	0.3	35.8	503	73.7
LSD at 10% Level		459	2.5	1.2	-	4.5	59	8.0
C.V. %		10.3	-	-	-	-	-	-

1. Advanced Georgia breeding line.
2. Spanish Type.

Bolding indicates entries not significantly different from highest yielding entry based on Fisher's protected LSD (P = 0.10).

Planted: May 22, 2012

Seeding Rate: 6 seed/row foot in 36" rows

Fertilization: 0 lb N, 0 lb P_2O_5, 0 lb K_2O/acre

Soil Test: P = High, K = Very High, and pH = 6.0

Soil Type: Dothan loamy sand

Previous Crop: Cotton

Management:
Disked and moldboard plowed;
Prowl, Valor, and Gramoxone used for weed control;
Headline, Folicur, Convoy, and Chlorothalonil used for fungal control.

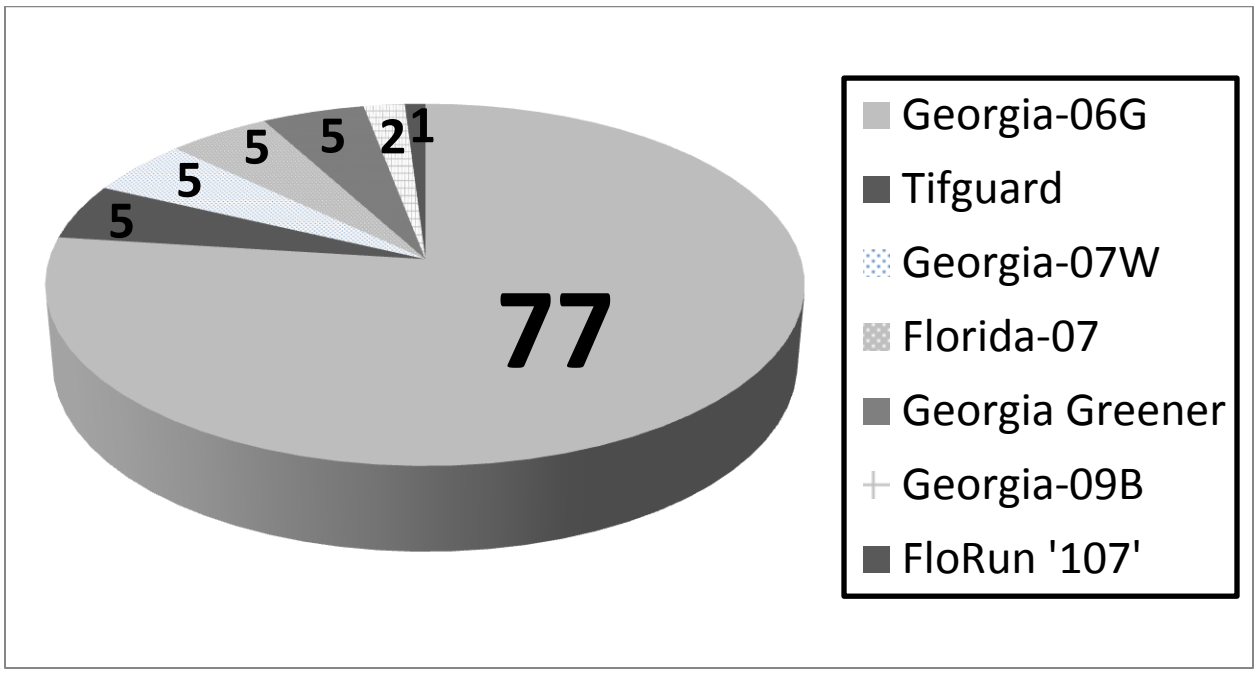
Test conducted by A. E. Coy, R. Brooke, D. Dunn, K. Cobb, and R. Milton.

CULTIVAR OPTIONS IN 2013

John Beasley

Peanut producers are fortunate in that they have some outstanding cultivars to select from. The peanut breeding programs at the University of Georgia, University of Florida, and USDA-ARS in Tifton, GA have released several cultivars since 2006 that have superior genetic yield potential and very good grading characteristics, especially when compared to the old standard, Georgia Green. The one trait that all of these releases share is their level of resistance to spotted wilt disease, caused by tomato spotted wilt virus (TSWV). All of these recent releases have a level of resistance to TSWV that provides producers with more flexibility in management decisions, especially in relation to planting date. Planting date recommendations are discussed in more detail in another section of this guide.

The major factor in determining availability and seed quantity of these cultivars is the acreage planted for seed increase the previous year. The Georgia Crop Improvement Association (GCIA) has responsibility and oversight for the seed certification program. The GCIA certifies acreage planted for foundation, registered, and certified seed production. In 2012, approximately 120,000 acres were planted in seed increase in the Southeastern U.S. (over 90% in Georgia). The pie graph below illustrates the breakdown, in percentage of acreage, for each cultivar planted in foundation, registered, and certified seed for 2013.



It is obvious from the chart above that a very high percentage of the planted acreage in 2013 will be in Georgia-06G. In fact, with the need to decrease acreage in 2013 to bring the supply back in balance, we could literally plant the entire Southeast (GA, AL, FL, MS) in this one cultivar. However, it is a wise decision to plant multiple cultivars and not plant all of our acreage in just one cultivar. Acreage planted for seed production of Tifguard, Georgia-07W, Florida-07, and Georgia Greener was evenly split at 5% each. That indicates there is not a lot of seed of any one of those cultivars but a fairly equal amount of each. For any producer wanting to plant any one of those cultivars, they need to contact their seed supplier early to make arrangements for seed.

Georgia-10T was released at the end of 2010 and was in seed increase in 2011 and 2012. There will be a very minimal minimum amount of seed of this late maturing cultivar. There are two new cultivars released for 2013, Georgia-12Y from the University of Georgia and TUFRunner^{TM} '727' from the University of Florida. There will NOT be any commercially available seed of these two cultivars. All acreage of these two will be in seed increase only.

The key in making the best cultivar decision is selecting the cultivar, or cultivars, that work best for individual field situations. Yield and grade data for these cultivars is available at the University of Georgia's Statewide Variety Testing web site, www.swvt.uga.edu. Yield and grade data are available for irrigated and non-irrigated production from three research locations, Tifton, Plains, and Midville.

In addition to yield and grade, other characteristics need to be taken into account. For instance, for fields with peanut root-knot nematode infestations, Tifguard is the best option, based on the fact it has near immunity to this pest problem. Florida-07 and Georgia-07W have better levels of resistance to white mold. Georgia Greener has better levels of resistance to CBR. When selecting a cultivar to plant in a specific field based on a known disease problem, use the Peanut Rx program, which is printed in another section in this guide, for comparing the cultivar, or cultivars, that would work best in your situation. Peanut Rx cards are also available from your local County Extension office.

In addition to seed quantity, seed quality should be good in 2013. As of the writing of this article (first of January), there has not been enough seed samples run by the Georgia Department of Agriculture Seed Lab in Tifton to be able to gauge the overall seed quality for each cultivar. We will provide that information to your local County Extension Agent as more test results become available. Based on near excellent growing conditions in 2012, we expect overall seed quality to be very good, provided the seed were stored and handled properly in the fall and winter.

UPDATE on SEEDING RATES for TWIN-ROW PATTERN

R. Scott Tubbs and John P. Beasley

There was a significant bump in seed costs in 2012, and it is not likely that seed costs will decrease moving forward. Therefore, it will consistently be imperative that peanut growers attempt to fine-tune their seeding rates for optimized plant stands if they want to maximize their net revenue. It is impossible to know what a final plant stand will be at the time of planting, since so many factors come into play – soil factors such as moisture, temperature, pH, classification (sand, silt, clay fractions), disease levels; and seed quality factors such as germination as influenced by production factors the previous year (temperature, rainfall/irrigation, fertility levels and timing of applications, etc.) and storage/handling of the seed.

Over the last five years, research projects on seeding rates have been conducted in multiple locations throughout Georgia, including Attapulgus, Tifton, Midville, and Plains. Many of these projects evaluated both single and twin row peanut at multiple seeding rates using a wide selection of currently relevant varieties at the time of planting. Results regularly showed that seeding rates around 5.0 seed per foot (SPF) of row were adequate to maximize revenue potential. However, since the twin-row pattern spreads out plants which reduces intra-row plant competition (and also slows seed plate speed), a more accurate number of seed are actually planted and higher plant stands are usually achieved compared to an equivalent seeding rate in single-row pattern. Yet, denser plant stands do not automatically mean increased yields and profit potential. Previous data has demonstrated that there is a yield plateau that is often reached despite a thicker plant stand since the prostrate growth and indeterminate fruiting habit of peanut will often compensate when sparser stands occur. Although, many top producers use very high seeding rates to insure a solid plant stand, especially in twin-rows. The question becomes, at what point is the extra seed that is planted an "insurance policy" versus a drag on profit potential? This is a question that cannot easily be answered prior to planting, although consistent patterns in research do offer some guidance to assist with selecting an adequate seeding rate.

Large-seeded runner varieties like Georgia-06G, Georgia-07W, and Georgia-09B likely will account for a large portion of the planted acreage in 2013. Considering these varieties can average between 620-650 seed per pound, approximately 135-140 pounds of seed per acre are usually required to plant these varieties at the standard seeding rate of 6.0 seed per foot of row (or 3 seed per foot per twin when using that pattern). In 2012, seed prices around $1.20 per pound were common, and this cost growers over $160 per acre in seed cost alone. A change in seeding rate by 1.0 SPF would thus alter seed cost by around $27 per acre. So, an increase in seeding rate to

boost plant stand can result in a reduction in net revenue when only a minor yield increase is realized. If an arbitrary contract price of $500 per ton is selected, this means a yield increase of 100 lb/ac would not be enough to cover the cost of planting one additional seed per foot of row and the farmer would end up with lower net revenue than if a lower seeding rate was used. Therefore, in order to maximize profit, it is essential to only plant the amount of seed that will maximize plant stand and yield potential.

Experiments

Two research trials were conducted in 2012 to evaluate optimum seeding rates in twin-row pattern using some of the most commercially relevant varieties available to growers. The trials took place at the University of Georgia's Ponder Farm straddling the county line of Tift and Worth Counties, and at the Attapulgus Research and Education Center in Attapulgus, GA. Both locations used the same treatment structure, with four seeding rates (5.2 SPF, 6.2 SPF, 7.1 SPF, and 8.3 SPF) and seven varieties which included Florida-EP^{TM} '113', FloRun^{TM} '107', Georgia Greener, Georgia-06G, Georgia-07W, Georgia-09B, and Georgia-10T. Four replications and a factorial arrangement in a Randomized Complete Block Design were used.

Yield

There was no statistical interaction between varieties and seeding rates for either location, so yield data for each seeding rate is averaged over all seven varieties. It can be seen from Figure 1 that yields were relatively flat regardless of which seeding rate was used, in either location. There was a statistical difference between the 8.3 SPF and 5.2 SPF yields at Attapulgus, but all other yields were statistically equal. However, since this constitutes a 3.1 SPF difference in seeding rate, it would have cost an additional $83 per acre to plant the higher seeding rate. Considering there was only a 269 lb/ac difference in the yield for those two rates, it would have taken a contract of approximately $620 per ton just to recover the cost of the seed at this yield difference.

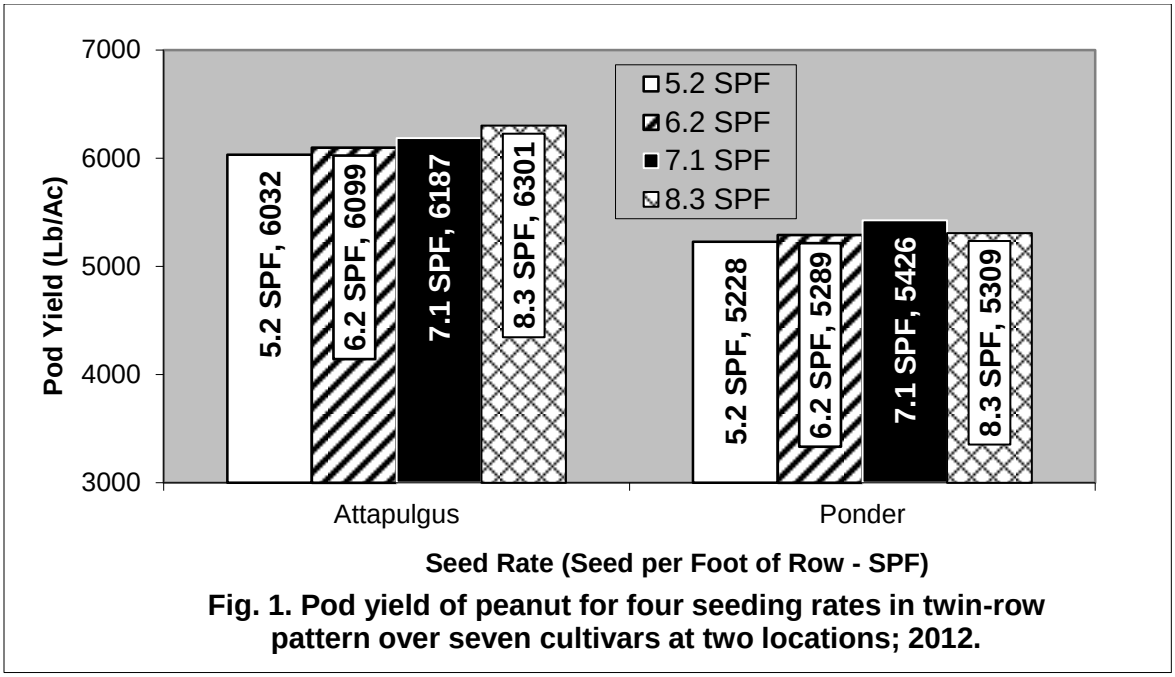


Fig. 1. Pod yield of peanut for four seeding rates in twin-row pattern over seven cultivars at two locations; 2012.

At the Ponder Farm location, there were no statistical differences in yield. Similarly, even in taking the numerical difference between the yield at 7.1 SPF and at 5.2 SPF, a $500 per ton contract would have been break-even for seed cost. Essentially, the values for these two tests combined show that there is little difference between these seeding rates in terms of yield and the economics behind these figures would suggest that there is no major benefit for increasing seeding rate from 5.2 to 6.2 to 7.1 SPF, but neither is there any major detriment for increasing the same seeding rate increments since there were small yield bumps which would assist in compensating for the seed costs. It would appear that a seeding rate of 8.3 SPF would be excessive according to the Ponder Farm location though.

Plant Stand

Statistical differences were obtained with each increasing seeding rate for plant stand at both locations. However, it is noted that all plant stands were 4.3 plants/ft or above in all cases (Fig. 2). Related to previous research on the relationship of yield vs. plant stand, it has been observed that yield plateaus do occur when plant stands reach 4.0 or higher in twin row pattern, with maximized production happening near 4.5 plants/ft. The data from these 2012 experiments did not show a dip in production until above 5.5 plants/ft, whereas previous research has demonstrated consistent yield decline above 6.5 plants/ft. Nonetheless, there is a point that is reached where additional plants become detrimental to maximized production, and when it usually costs more seed (and hence more money) in order to achieve such high plant stands, it

is not recommended to increase seeding rates above a specific level. When planting quality seed, that level is typically no greater than around 7.1 SPF (or 3.5 seed/ft per twin row).

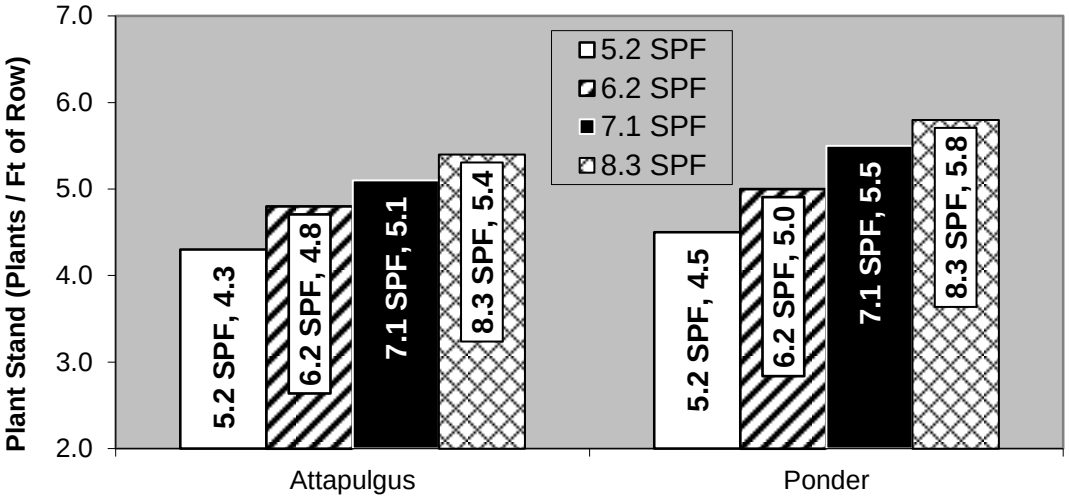


Fig. 2. Plant stand of peanut for four seeding rates in twin-row pattern over seven cultivars at two locations; 2012.

Variety Comparison

At both locations, there was a relatively consistent trend in yield for varieties when averaged over seeding rates (Fig. 3). Georgia-06G and Georgia-09B were the highest yielding varieties at both locations, while Florida-EP^{TM} '113' and Georgia-10T were the two lowest yielding varieties in both locations. There is relatively consistent data from my peanut trials over the last several years showing that peanut varieties from the University of Florida breeding program tend to perform well in south Georgia close to the Florida border, but are not as competitive compared to other variety options as you move further nort in latitude. This may be related to the climate and conditions under which they are bred.

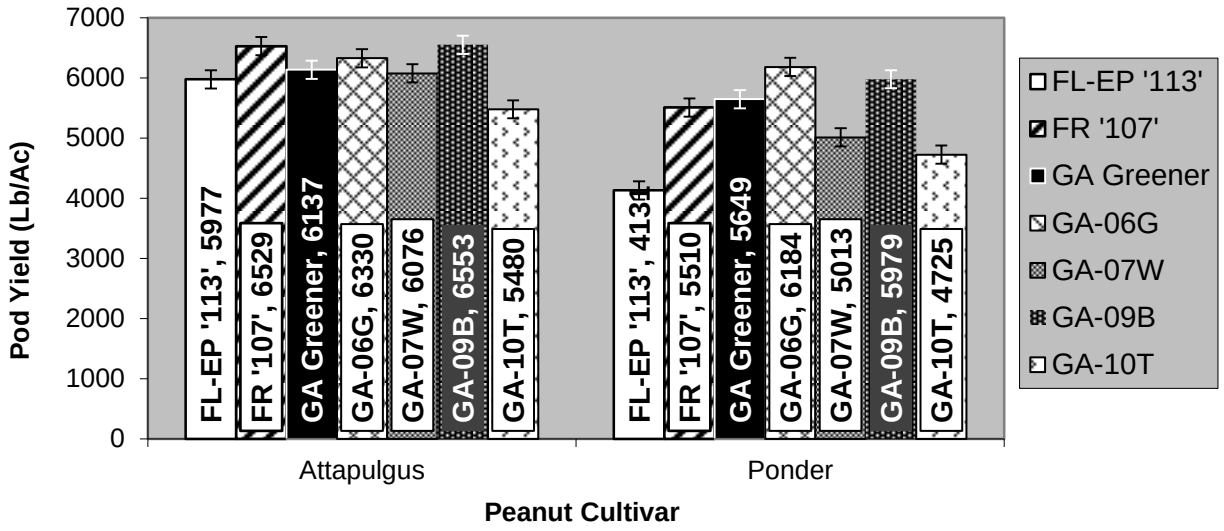


Fig. 3. Pod yield of peanut for seven cultivars in twin-row pattern averaged over four seeding rates, at two locations; 2012.

Summary

When taking into consideration results from previous years and other locations as well, it would suggest that a 7.1 SPF seeding rate may be the most optimum seeding rate for twin-row pattern. Equally good results have been achieved with seeding rates around 5.0 SPF, but this is more of a benefit in single rows than in twins. When increasing seeding rates above 7.1 SPF, yield increases are only sporadic at best, and rarely are those yield increases economical compared to the extra seed cost associated with that planting. Planting those additional seed not only cost money to the grower, but also remove an edible product from the peanut supply, which could unnecessarily drive up the cost of consumer products in years when carryover stocks are low and demand for peanut products are high.

EFFECT of TRACTOR GROUND SPEED at PLANTING on PEANUT PLANT STAND and POD YIELD

R. Scott Tubbs and Jason M. Sarver

While planting time is one of the most exciting periods of the year on the farm, it can also be one of the most hectic and unpredictable. Adverse weather conditions, malfunctioning equipment, and attention to other crops are just a few of the many reasons why the window of time for optimum peanut planting conditions may be shortened. One of the methods growers use to cover their acreage more quickly is to increase tractor speed while planting. While this method does reduce the amount of time needed for peanut planting, it can also result in some undesirable consequences, including reduced plant stands and potentially a loss in yield and profitability.
The potential for plant stands to be reduced at increased speed is a direct result of fewer seed physically getting into the ground. As the tractor speed increases, the seed plate within the planter unit turns faster and is less likely to pick up a seed on each hole. These empty holes on the planter plate result in 'skips', or areas without a seed present. In turn, fewer seeds in the ground results in fewer plants in the field. University research has led to a recommendation of four viable plants per foot of row needed in order to maintain yield potential in peanut. Plant stand levels below four plants per foot can potentially lead to increased loss from Tomato Spotted Wilt Virus, decreased ground cover resulting in less effective weed control, and ultimately reduced pod yield.

Experiments

This series of experiments was designed to determine whether plant stands and pod yield are affected by varying the speed of the tractor at planting. Tests were initiated in Plains, GA and Tifton, GA in 2010; Plains, GA and Attapulgus, GA in 2011, and Tifton, GA in 2012. The cultivar 'Tifguard' was seeded with a Monosem vacuum style single-row planter at 5.7 seed per foot at each location. The planter fan was PTO-driven, meaning that the fan speed and resultant vacuum pressure was controlled via adjustment in the engine speed (RPM) of the tractor. Six combinations of engine RPM and tractor gears were used, resulting in six planting speeds. Each gear and RPM combination and the resultant ground speed are shown in Table 1.

Table 1. Tractor gear, engine speed, and resultant ground speeds for each combination.

Tractor Gear	Engine Speed (RPM)	Ground Speed (MPH)
Low 2	1700	2.0
Low 3	1700	2.8
Low 4	1700	3.7
Low 2	2000	2.4
Low 3	2000	3.2
Low 4	2000	4.1

Engine RPM affected vacuum pressure such that the 1700 RPM setting provided suction at 20 PSI and the 2000 RPM setting was 25 PSI.

Plant Stand

Peanut plant stand was significantly affected by tractor speed in four of five locations (Table 2).

Table 2. Plant stands at each tractor gear and engine speed combination. Means with the same letter within a column are not significantly different at P ≤ 0.05.

			Tifton 2010	Plains 2010	Attapulgus 2011	Plains 2011	Tifton 2012
Engine Speed (RPM)	Gear	Speed (MPH)	Plant Stand (plants/ft of row)				
1700	L2	2.0	2.65 bc	3.44 ab	2.29 a	2.49	4.06 ab
	L3	2.8	2.63 bc	3.23 bc	2.02 abc	3.7	3.69 bc
	L4	3.7	2.16 d	2.66 e	1.89 c	3.61	3.45 c
2000	L2	2.4	3.23 a	3.66 a	2.22 ab	3.49	4.14 a
	L3	3.2	2.9 b	3.18 cd	1.99 bc	3.64	3.71 bc
	L4	4.1	2.56 c	2.99 d	1.77 c	3.57	3.64 bc
Pr>F			<0.0001	<0.0001	0.0046	0.6968	0.0144

In Tifton and Plains in 2010, Attapulgus in 2011, and Tifton in 2012, either one or both of the two slowest speeds (2.0, 2.4 MPH) resulted in the greatest number of plants per foot of row. In Attapulgus in 2011, a speed of 2.8 MPH was equal to the optimum speed but in the other three locations a speed of 2.8 MPH and above significantly reduced plant stand. At all four locations where significant differences were observed, speeds of 3.7 and 4.1 MPH were amongst the worst groupings for plant stand. Results are displayed graphically in figures 1-5. It should also be noted that in Tifton 2010 and in Attapulgus 2011, the batches of seed used were not optimum quality which further affected plant stand, although the same decreasing trends in stand at increasing plant speed were still observed.

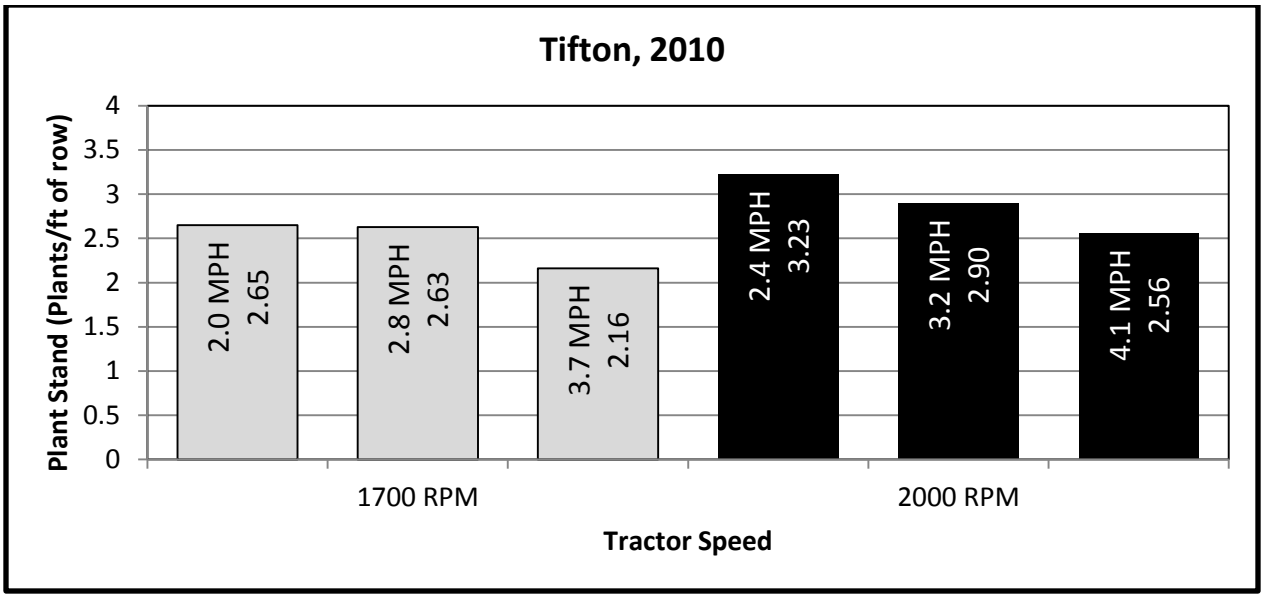


Figure 1. Plant stands at each tractor speed in Tifton, 2010.

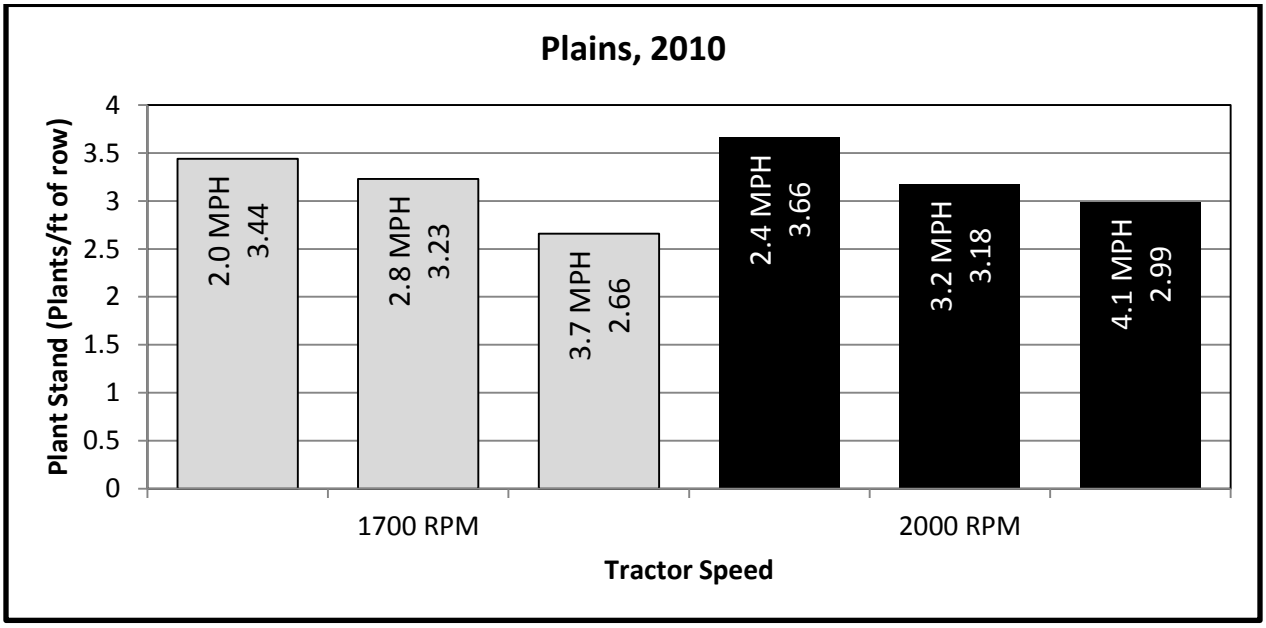


Figure 2. Plant stands at each tractor speed in Plains, 2010.

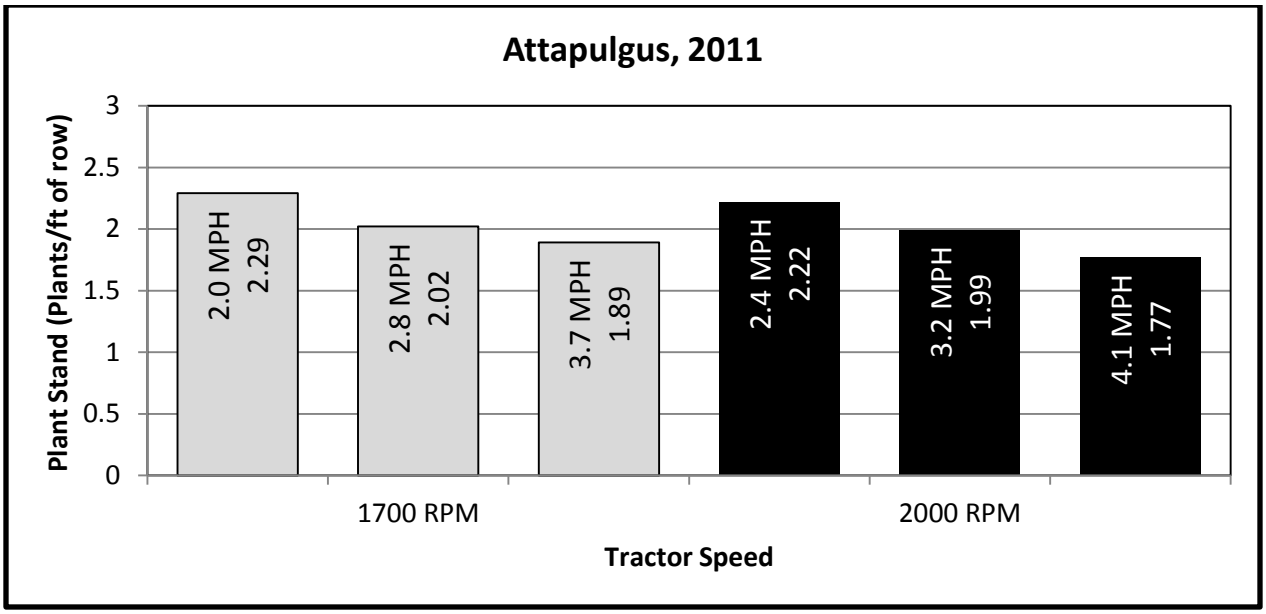


Figure 3. Plants stands at each tractor speed, Attapulgus, 2011.

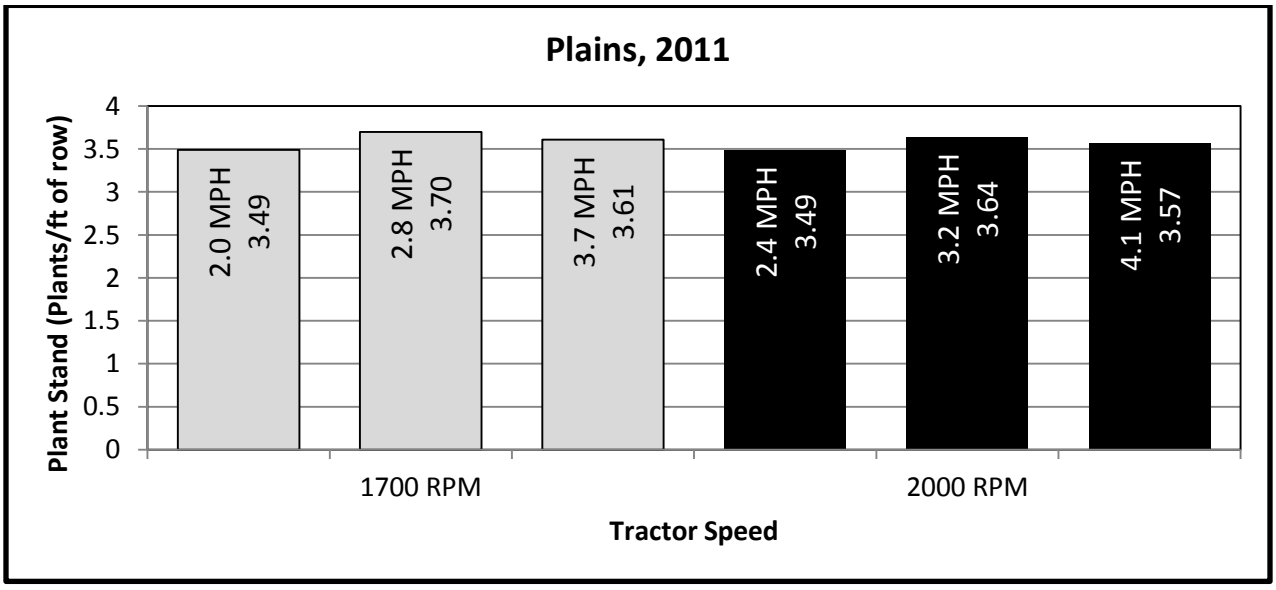


Figure 4. Plant stands at each tractor speed, Plains, 2011.

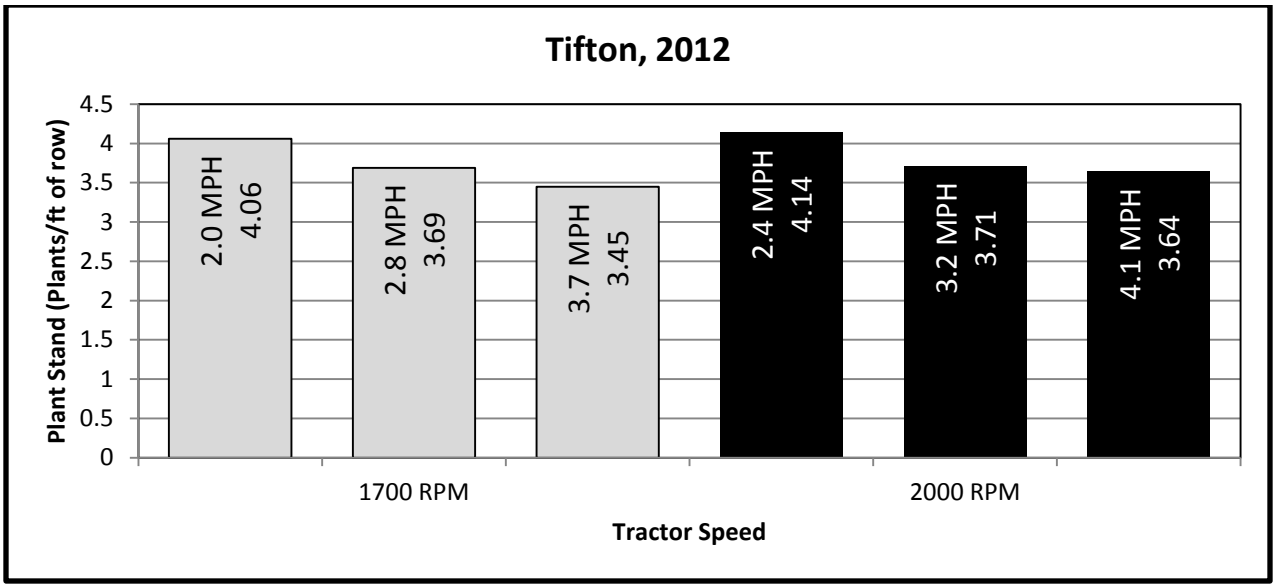


Figure 5. Plants stands at each tractor speed, Tifton, 2012.

Yield

Pod yield was not significantly affected in these trials (Table 3). However, yield and plant stand followed very similar trends as lower stands tended to have lower yields (especially when plant stands were below 3.5 plants/ft of row) (Figs. 6-10). In one year, there was a difference in yield at the P<0.10 level (Plains 2010) in which the higher vacuum setting (25 PSI) resulted in better yield in addition to improved plant stand. There was also one year x location (Attapulgus 2011) where the slower tractor speeds (gears of Low 2 and Low 3, regardless of RPM) resulted in higher yields than the fastest setting (Low 4) according to the P<0.10 level of significance, which likewise corresponded with plant stands.

Table 3. Pod yield at each tractor gear and engine speed combination.

			Tifton 2010	Plains 2010	Attapulgus 2011	Plains 2011	Tifton 2012
Engine Speed (RPM)	Gear	Speed (MPH)	Pod Yield (lb/ac)				
1700	L2	2.0	2721	3943	4560	4749	6358
	L3	2.8	2687	3990	4477	4718	5769
	L4	3.7	2749	3768	4322	4834	5685
2000	L2	2.4	3111	4163	4587	4645	5990
	L3	3.2	2877	4127	4411	4638	6232
	L4	4.1	2611	4011	4053	4763	5908
Pr>F			0.283	0.410	0.223	0.820	0.096

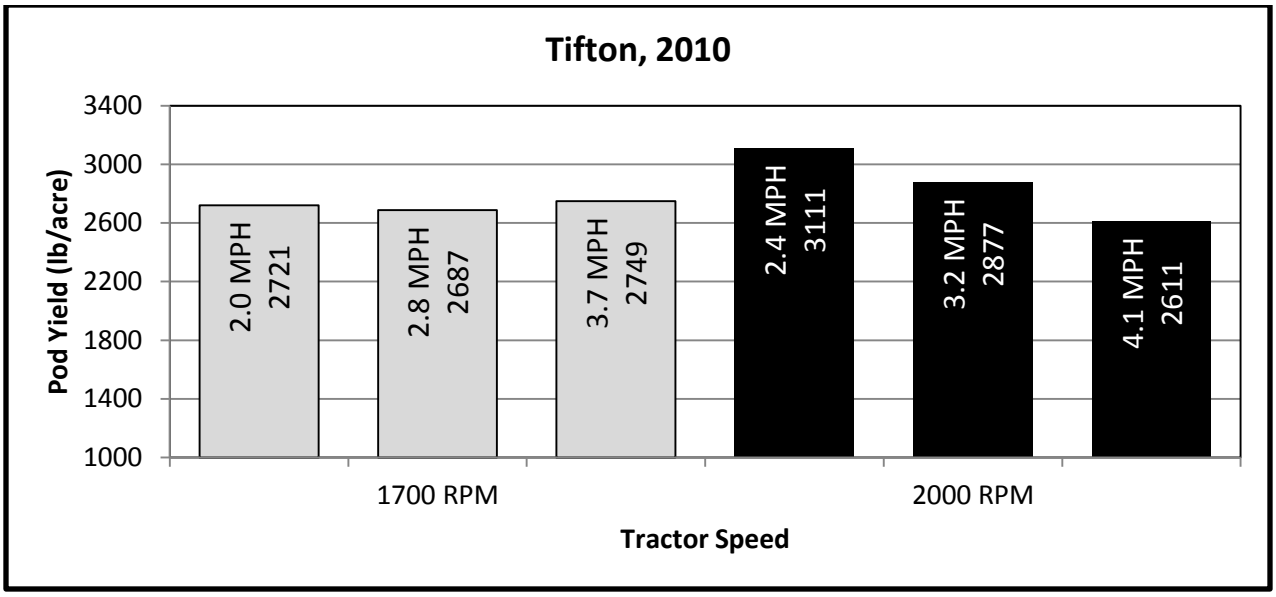


Figure 6. Pod yield at each tractor speed, Tifton, 2010.

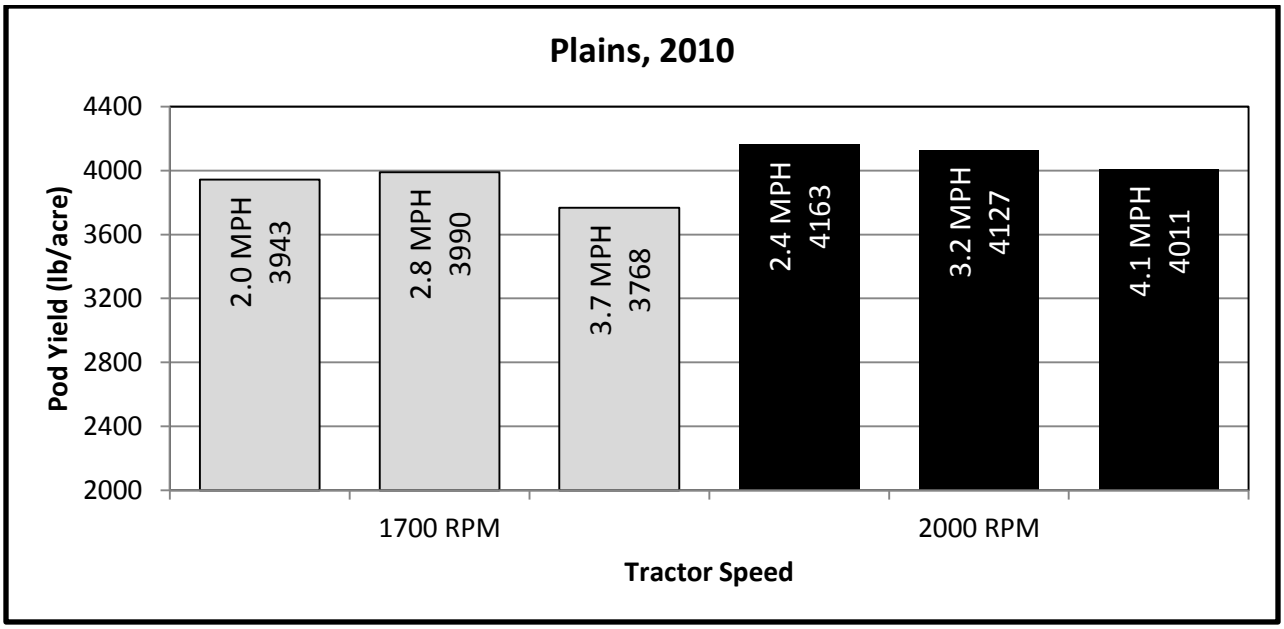


Figure 7. Pod yield at each tractor speed, Plains, 2010.

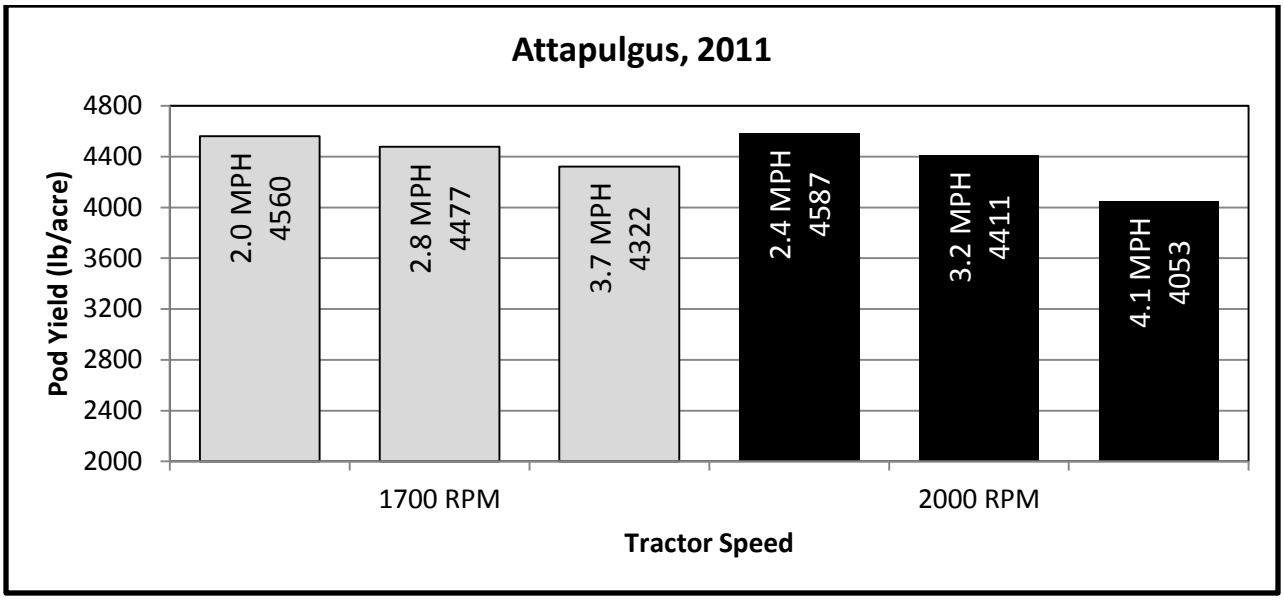


Figure 8. Pod yield at each tractor speed, Attapulgus, 2011.

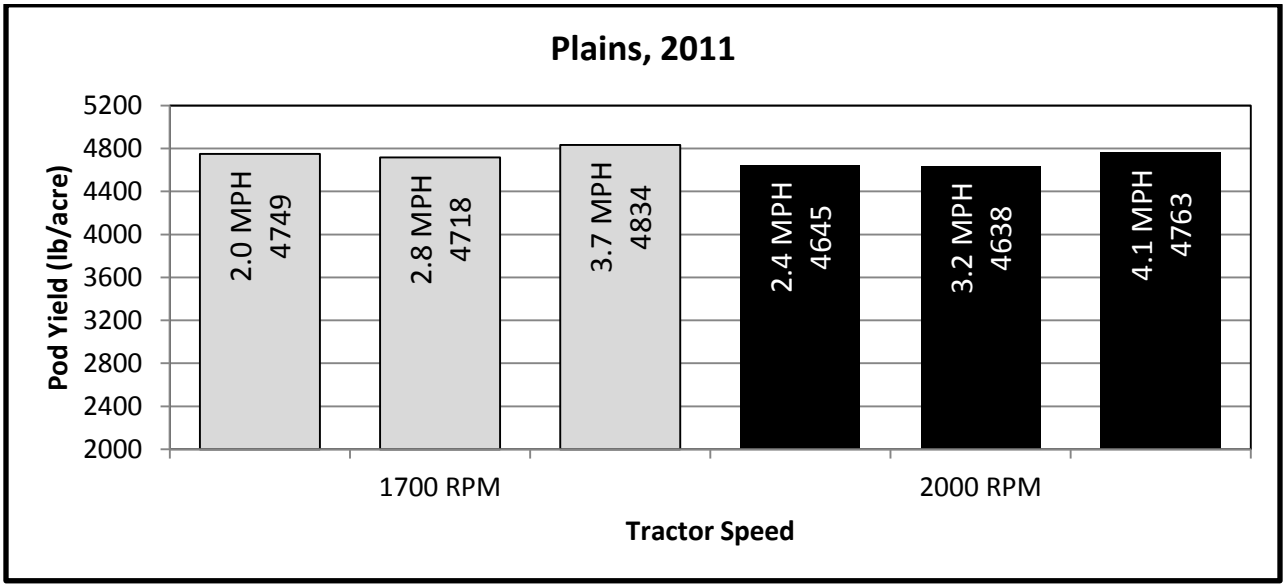


Figure 9. Pod yield at each tractor speed, Plains, 2011.

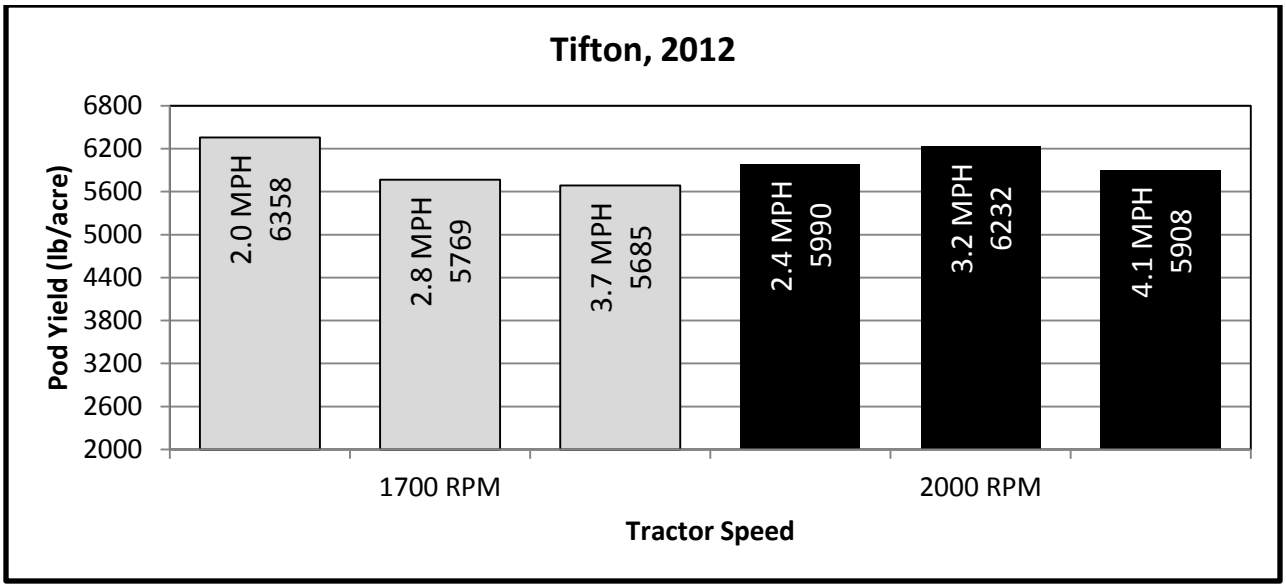


Figure 10. Pod yield at each tractor speed, Tifton, 2012.

Summary

These data indicate that tractor speed does influence plant stand by not accurately metering peanut seed at the desired seeding rate. The rotational speed of the planter plate affects the ability of seed to settle into place before being dropped into the soil furrow. While these plant stand differences did not result in yield variation for the most part according to the statistics because of experimental error, a similar slope in the trendline from increasing speed to decreasing yield can be perceived in almost all of the site x year locations. It is understandable that reducing tractor speed during one of the busiest times of the year is not feasible in many operations, especially below 3.0 miles per hour. Likewise, the differences in tractors, planters, and field terrain will not permit these results to be duplicated in all instances. Nonetheless, this data shows that there is a greater chance of optimizing desired results when a slower speed is used at planting.

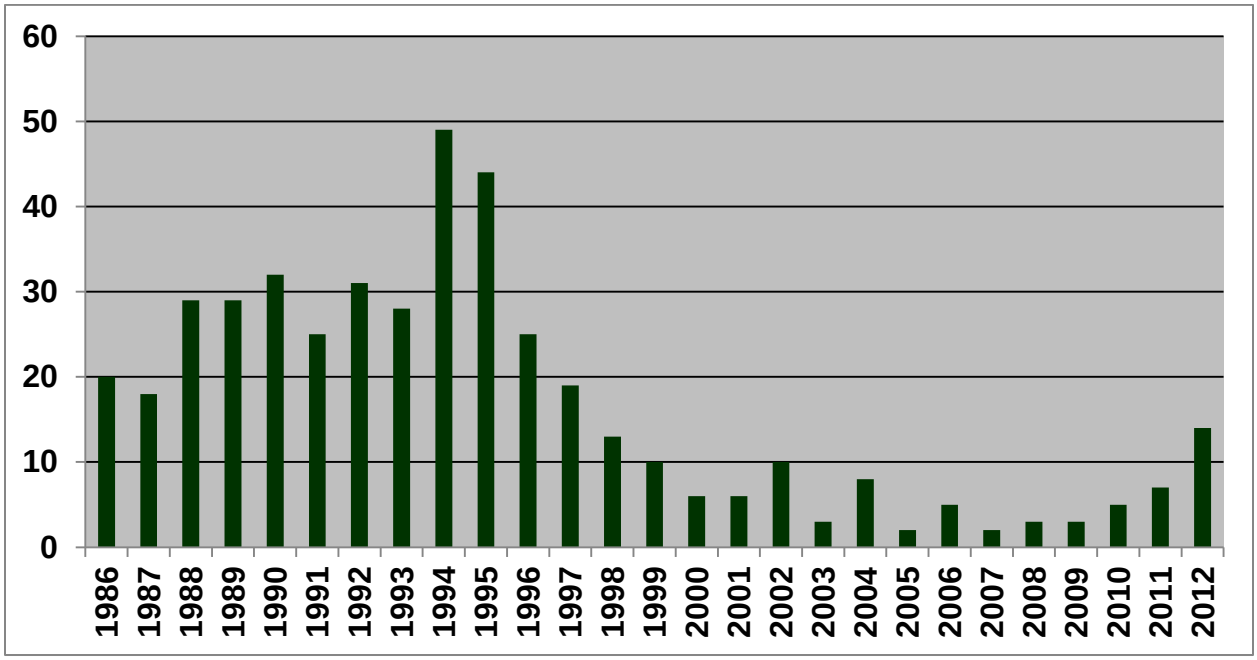
The difference in planting at 2.4 MPH compared to 4.1 MPH (or 2.0 MPH compared to 3.7 MPH if following the 1700 RPM values) means that using a 4-row planter, there would only be an additional 7 to 9 minutes of labor expense for each acre planted. Plugging in a pay rate of $10/hr, this would constitute an extra cost of $1.20 to $1.60 per acre planted in labor expense by slowing down. However, even at the loan rate of $355 per ton, it would take less than 10 lb/ac of peanuts produced to generate the extra labor cost at planting time. Six of the 10 sets of examples above (each site-location separated by the two RPM settings) resulted in yield differences of anywhere from 150 to 675 lb/ac for the slowest vs. fastest speed tested. This constitutes a $38 to $169 increase per acre, which is a very large return on investment. It may not pay off every time, but overall the net revenue increase would have covered all extra expenses over the years, and would have been considered a worthwhile effort over the long-run. Time is very valuable, but considering the investment being made over a 130 to 150 day season, the difference in reducing speed to improve planting efficiency may pay off in the grand scheme.

PLANTING DATES

John Beasley

For many years peanut producers in the Southeast were encouraged to delay peanut planting in order to lower their risk of spotted wilt disease, caused by tomato spotted wilt virus (TSWV). However, the release of a number of cultivars since 2006 with much higher levels of resistance to TSWV provide producers with the flexibility to return to planting some of their acreage earlier, specifically, in middle to late April. The following tables illustrates the shift, from 1986-2012, in the percentage of peanut acreage planted in April.

Percent Peanut Acreage Planted in April, 1986 - 2012



Prior to 1986 and from 1986 into the middle 1990's, 20-30% or more of the peanut acreage in Georgia was planted in April. Most of that acreage was planted from April 15-30. When the level of TSWV became so severe we had significant yield decline, research indicated that delayed planting was one factor of several that helped reduce a growers risk of severe TSWV levels. The lowest risk planting window was May 11-31 and the highest risk window was anytime in April. As a result, we saw the percentage of acreage planted in April drop to less than 10%, and in many years drop to less than 5%. More acreage was being planted in very late May and well into June.

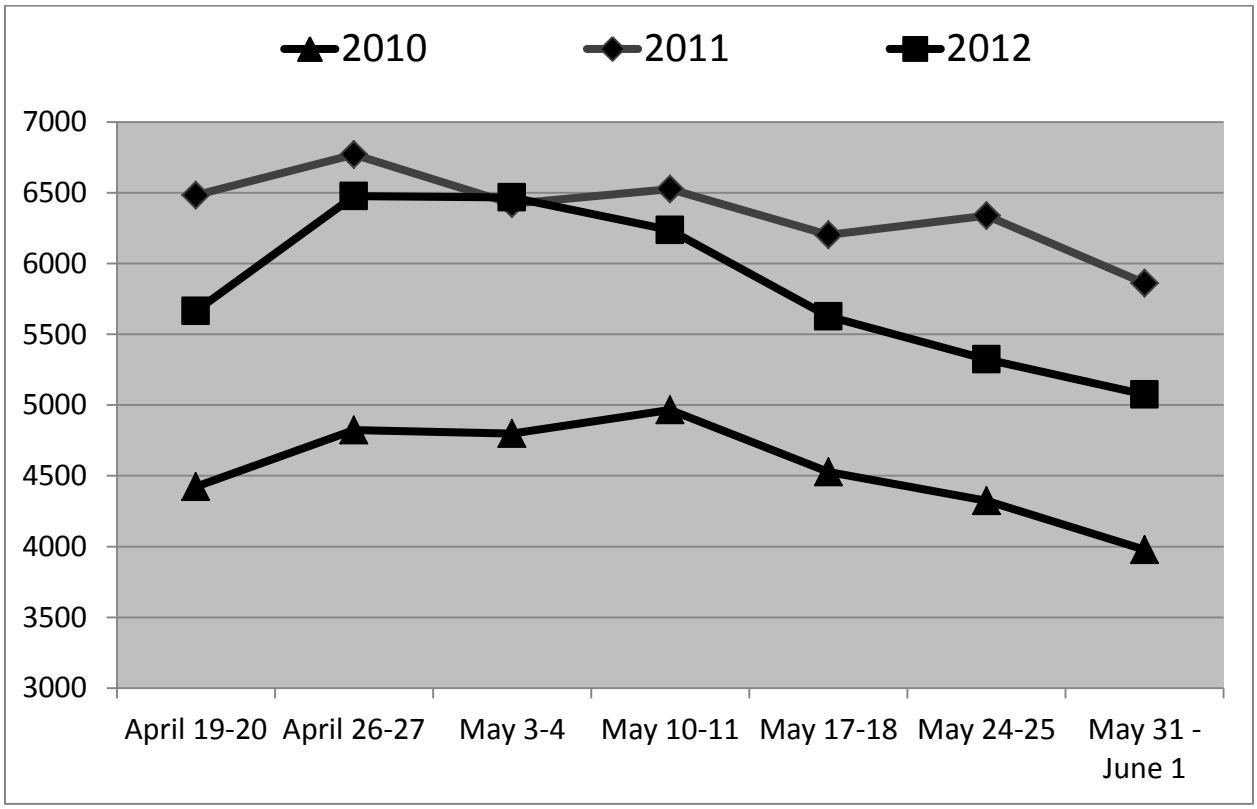
The peanut acreage planted in June was problematic. With the majority of cultivars being 140 days or longer to reach optimal maturity, acreage planted after May would take well into late October to reach maturity. More often than not, the minimum

air temperature in late October was cold enough to slow, and in many cases stop, pod maturation. As a result, growers were losing yield and grade potential. Research by scientists with the USDA-ARS National Peanut Research Lab in Dawson, GA indicated yield gain in the last three weeks of a cultivar's pod maturation process could be as much as 30% of the final yield potential. If a cultivar is shut down by cold temperatures (low 40's and lower for three consecutive mornings) as much as 2-3 weeks before reaching optimal maturity, a grower has lost significant (20-30%) yield potential. Grades would be significantly reduced as well.

Because of the concern with so many acres being forced into a June planting, we began to evaluate the more recently released cultivars for their response to planting dates. All of the cultivars released since 2006 have much better levels of resistance to TSWV, providing more flexibility in the planting window. Trials were established in 2010, 2011, and 2012 to evaluate cultivars planted for 7 consecutive weeks, beginning approximately April 20 and ending on or near June 1. The trials were conducted on the University of Georgia's Tifton Campus research farms at the following locations in Tift County: 2010 – Gibbs Research Farm; 2011 and 2012 – Ponder Research Farm. Four cultivars were compared in these trials. Georgia-06G, Georgia-07W, and Georgia Greener were evaluated in all three years. Georgia-02C, a late maturing cultivar was included in the 2010 trial. In 2011 and 2012, Georgia-10T, a recently released late maturing cultivar, was substituted for Georgia-02C as the late-maturing check. The table below shows the planting dates and yields by date.

2010	Lbs/Acre	2011	Lbs/Acre	2012	Lbs/Acre
April 20	**4423**	**April 19**	**6482**	**April 19**	**5665**
April 27	**4823**	**April 26**	**6771**	**April 26**	**6477**
May 4	**4798**	**May 3**	**6422**	**May 3**	**6467**
May 11	**4966**	**May 10**	**6526**	**May 10**	**6237**
May 18	**4528**	**May 17**	**6203**	**May 17**	**5626**
May 25	**4324**	**May 24**	**6339**	**May 24**	**5323**
June 1	**3977**	**May 31**	**5861**	**May 31**	**5075**

What is not as clear to detect by just looking at yield data is the drop off in yield the later you plant. The data above is presented in a line graph in the chart below to provide a visual perspective of the yield, over time.



It is more clear to see in the line graph above that yields in all three years were higher in the late April and early May time frame and began to drop off significantly when we planted in late May and the first of June.

Referring back to the bar graph above showing the percentage of acreage planted in April, you can see where we increased the acreage planted in April in 2012 compared to the previous 13 years. We planted approximately 15% of the peanut acreage in April last year. The target should be in the 20-30% range. The more acres we plant in April, the fewer acres we plant in late May and June.

Is there a danger in planting too early? – YES! We must monitor soil temperatures very closely before planting. Over the past 15 years we haven't worried as much about soil temperature affecting seed germination and plant emergence because we were delaying planting due to concerns with TSWV severity. Now that we are encouraging planting more acreage earlier, we must be cognizant of the negative impact cool soil temperatures can have on seed germination.

For years the University of Georgia recommendation for initiating planting was to wait until the four-inch soil temperature was a minimum of 65 degrees F for three consecutive days. In addition, we warned that if a cold front was approaching within twenty-four hours you needed to delay planting. Another factor to monitor was soil type. Sandier soil series would warm more quickly early in the spring but they would also be more susceptible to rapid soil temperature drops with the passing of a cold front. The sandy, clay loam soil series (what we call our “red” soils) have a higher clay content and more finer textured soil particles. They warm more slowly but are less susceptible to rapid drop in soil temperature.

Historically, April 15 was the recommended time for initiating planting. In a very high percentage of years, the average four-inch soil temperature is above 65 degrees by April 15, at least in the Tifton area. However, there are some years in which the soil temperature is still too cold as you move from April 15 into late April. You must still monitor soil temperature closely. If you are planting lower quality (lower germination percentage) seed, the more susceptible to soil temperature the seed are. In that case, you must definitely wait to plant when the soil is warmer.

Is 65 degrees warm enough? – We have conducted some research the past few years evaluating seed germination at varying temperature ranges in an artificial environment. Trials were conducted by Dr. Timothy Grey, Dr. Glen Harris, and Dr. John Beasley comparing seed of different cultivars and different calcium treatments when germinated on a thermogradient table. The temperature on this table can be altered in small increments to determine at what point we see the maximum germination. What we’ve seen the past few years is that even though we were getting very good germination of seed at temperatures in the 65-86 degree range, the percent of germination increased dramatically as we increased the temperature to 70 degrees and above. Germination increased from the middle to upper 80s at the 65-68 degree range to 92 percent and higher when we reached 70 degrees.

Because of this response, it is highly suggested to **wait and plant when the four-inch soil temperature is closer to 70 degrees F**. In most years, that may only be a few days. It may be well worth the two to five-day wait to have the soil temperature go from 65 to 70 degrees before planting. It could be the difference in a good stand versus a great plant stand.

2013 PEANUT WEED MANAGEMENT UPDATE

Eric P. Prostko

Palmer Amaranth Control

Generally, Georgia peanut growers have made significant improvements in Palmer amaranth control over the last few years. Some dryland growers are still struggling due to the lack of residual herbicide activation in dry years. Palmer amaranth can be effectively managed in peanut using an integrated program approach that combines tillage, cover crops, twin rows, herbicides, and hand-weeding.

Herbicide programs that include residuals such as ***Valor*** and/or ***Dual Magnum*** and timely postemergence applications of ***Gramoxone + Storm, Cadre***, ***Cobra*** and/or ***Ultra Blazer*** have provided the most consistent control of Palmer amaranth. Additional information about the control of herbicide-resistant Palmer amaranth can be found later in this section.

How Do the Top Peanut Growers Manage Weeds?

Survey results from the 2011 Georgia Peanut Achievement Club winners indicated the following production practices were used to manage weeds on their farms (*average peanut yields on these 10 farms was 6202 lbs/A*):

- 10/10- irrigated
- 7/10 – bottom plow
- 9/10 – twin rows
- Herbicides
    - 8/10 - Sonalan
    - 9/10 - Valor
    - 3/10 - Dual
    - 8/10 - Cadre
    - 6/10 - 2,4-DB
    - 3/10 - Gramoxone
    - 2/10 – Prowl
    - 2/10 - Strongarm

Classic Update

Weed-free field trials to investigate the tolerance of new peanut cultivars to ***Classic*** have been conducted in Georgia for the past 13 years. Of the current cultivars grown, only GA-06G and Tifguard have shown increased sensitivity to this herbicide. When applied to GA-06G and Tifguard, Classic has caused significant yield reductions ranging between 7-11%. Yield losses have not been observed when Classic was

applied to Florida-07, Georgia Greener, and GA-07W. Additional cultivars will be evaluated in 2013.

Gramoxone (paraquat) Injury

Gramoxone (paraquat) continues to be a popular herbicide because of its low cost and relative effectiveness on many weed species commonly found in Georgia peanut fields. However, there is always some concern from growers that the injury caused by this herbicide (leaf burn, stunting) results in yield loss.

Recent weed-free studies conducted by UGA weed scientists in 2010-2012 have confirmed that peanut plants have adequate tolerance to Gramoxone. In 10/10 comparisons, peanut yields were not reduced by Gramoxone +/- ***Basagran*** or ***Storm*** treatments. Gramoxone + Storm + ***Dual Magnum*** treatments resulted in peanut yield losses that ranged between 4-6%. However, it is very important to remember that poor weed control will result in yield losses substantially greater than this. In fact, it only takes 1 Palmer amaranth plant /3.3 ft row to reduce peanut yields by 28%.

Dual Injury

Dual Magnum, Parallel PCS, and Me-To-Lachlor are herbicides that contain the active ingredients metolachlor and/or s-metolachlor. These actives have been used for weed control in peanut since the 1980's. Resurgence in the use of these herbicides has occurred due to the development of tropical spiderwort (Benghal dayflower) and ALS-resistant Palmer amaranth problems.

When Dual was first registered for use in peanut, there were some concerns from growers that it could cause unacceptable crop injury (stunting, j-rooting, delayed emergence) and yield loss. However, numerous results from foundation research trials confirmed that peanut had excellent tolerance to Dual when applied at normal use rates. However, crop injury from Dual would be more likely to occur when excessive rates are applied under extreme moisture conditions.

Recently, numerous weed-free trials conducted by UGA weed scientists in 2010-2012 have confirmed that peanut plants continue to exhibit excellent tolerance to Dual Magnum. In 32/33 comparisons (97%), Dual Magnum, applied PPI, PRE, EPOST, or POST alone or in combination with Cadre (POST), did **not** negatively influence peanut yield.

Drift/Sprayer Contamination Issues

Drift and sprayer contamination are two of the most common herbicide related problems that occur on peanut in Georgia. Consequently, significant research has been conducted to evaluate the effects of numerous herbicides (glyphosate, glufosinate,

dicamba, and 2,4-D) on peanut yield. Results of these trials are presented in Tables 1-4. Growers must be conscious of wind speed/direction and utilize drift reduction strategies when applying non-labeled herbicides near peanut fields. Additionally, herbicide containers must be properly labeled and stored to minimize potential mixing errors that could result in sprayer contamination. Sprayers should be adequately cleaned of herbicide residues, as recommended on the label, before utilization in peanut fields.

Table 1. Estimated peanut yield loss (%) caused by glyphosate applied at 75-105 days after planting in Georgia.

Glyphosate Rate (oz/A) (4.0 lb ai/gal)	Glyphosate Rate (oz/A) (5.5 lb ai/gal)	Rate (lb ai/A)	Peanut Yield Loss (%)
2.8	2.0	0.09	0
5.5	4.0	0.17	5
11.0	8.0	0.34	24
22.0	16.0	0.69	48
32.0	23.2	1.00	70

Table 2. Estimated peanut yield losses (%) caused by dicamba in Georgia.

Rate[a] (oz/A)	Rate (lb ai/A)	Peanut Yield Loss (%)		
		Time of Application		
		30 DAP[b]	60 DAP	90 DAP
1	0.03	12	16	4
2	0.06	16	20	8
4	0.13	24	30	14
8	0.25	39	49	27
16	0.50	70	86	54
32	1.00	100	100	100

[a]Clarity 4SL: [b]DAP = days after planting

Table 3. Estimated peanut yield losses (%) caused by glufosinate in Georgia.

Rate[a] (oz/A)	Rate (lb ai/A)	Peanut Yield Loss (%)		
		Time of Application		
		30 DAP[c]	60 DAP	90 DAP
2	0.04	7	13	13
4	0.07	13	17	17
8	0.15	26	26	26
16	0.29	51	44	42
32	0.58	100	80	76

[a]Liberty 2.34SL; [b]DAP = days after planting

Table 4. Estimated peanut yield losses (%) caused by 2,4-D amine in Georgia.

Rate[a] (oz/A)	Rate (lb ai/A)	Peanut Yield Loss (%)		
		Time of Application		
		30 DAP[c]	60 DAP	90 DAP
2	0.06	3	6	5
4	0.12	5	8	5
8	0.24	8	11	7
16	0.48	15	18	10
32	0.95	27	31	15

[a]2,4-D Amine 3.8SL; [b]DAP = days after planting

Potential New Herbicides

At the current time, there is minimal research and discovery work being conducted on herbicides for use in peanut. Currently, UGA weed scientists are investigating peanut tolerance and weed control efficacy of several herbicides labeled for use in other crops including ***Warrant*** (acetochlor), ***Zidua*** (pyroxasulfone), and ***Fierce*** (Valor + Zidua). Although these herbicides have shown some potential to be used in peanut, they are **not registered** for this use at this time. Additional field trials with these herbicides are needed. They may or may not ever make into the peanut market. Time will tell?

Potential Resistance Concerns

Herbicide-resistant Palmer amaranth has forced many Georgia growers to rely more heavily on certain herbicides such as ***Dual Magnum*** and ***Warrant.*** Additionally, a new herbicide, sold under the trade name of ***Zidua,*** is now labeled for use in field corn and will eventually be labeled for use in soybean. Unfortunately, all of these herbicides have the same mode of action. Specifically, these herbicides inhibit the formation of long chain fatty acid synthesis in plants. You may find this mode of action designated as WSSA-15 or HRAC-K3 on the label or in the literature. Although resistance to this mode of action has not yet been discovered in the U.S., it has been confirmed in other parts of the world (Australia, China, Germany, Philippines, and Thailand). Thus, Georgia growers are strongly cautioned against overusing/abusing this mode of action. ***Know the herbicide modes of action that are being used on your farm and rotate modes of action when you can!!***

IRRIGATION

Calvin Perry, Gary Hawkins, John Beasley

Peanuts are often considered to be a relatively drought-tolerant crop. However, peanuts have varying water requirements during the various physiological growth stages of the crop (see Table 1) – from less than 0.3 inches per week early in the life of the plant to 0.3 inches per DAY at peak fruiting stage. To maximize yield and ensure top quality, the water demands of the peanut crop in Georgia will often have to be met with irrigation as episodic droughts are becoming more common. Past research has shown significant yield reduction when water deficits occur during the 50 to 110 days after planting time frame.

Table 1. Critical Periods for Water Use by Peanut

Plant Growth Stage	Plant Indicators	Relative Drought Suscept.
Germination & Emergence	Planting thru vegetative emergence	**High**
Early Vegetative	Emergence to flowering/pegging	**Low**
Fruiting	Flowering/pegging to pod addition/fill	**High**
Maturation	Late pod fill to harvest	**Moderate**

Irrigation is particularly important in areas that frequently have drought in July through August and on sandy soils. Multiple years of research trials in Tifton, Plains and Midville have shown a 1200+ lb/ac yield increase from irrigation for the Georgia-06G cultivar. Irrigation is often used as a supplement to rainfall, as total reliance on irrigation would be difficult for some producers.

Research in the 1970's that determined the water response/use curve (Figure 1) and irrigation requirement for peanut was conducted on Florunner cultivar and became the basis of UGA peanut irrigation recommendations. The research results of the 1970's indicated that a peanut plant needs approximately 23 inches of water from planting until harvest. Approximately 18 of those 23 inches (78%) of water is needed during weeks 10-17 (8 weeks, or 40%) of the 20-week growing season. Rarely does Georgia receive 23 inches of rainfall during the growing season. Therefore, in most every year we are in a rainfall deficit for peanut production. The most critical periods are the germination to

emergence and the fruiting stages. At peak fruiting period, the plant needs about 0.3 inches of water per day.

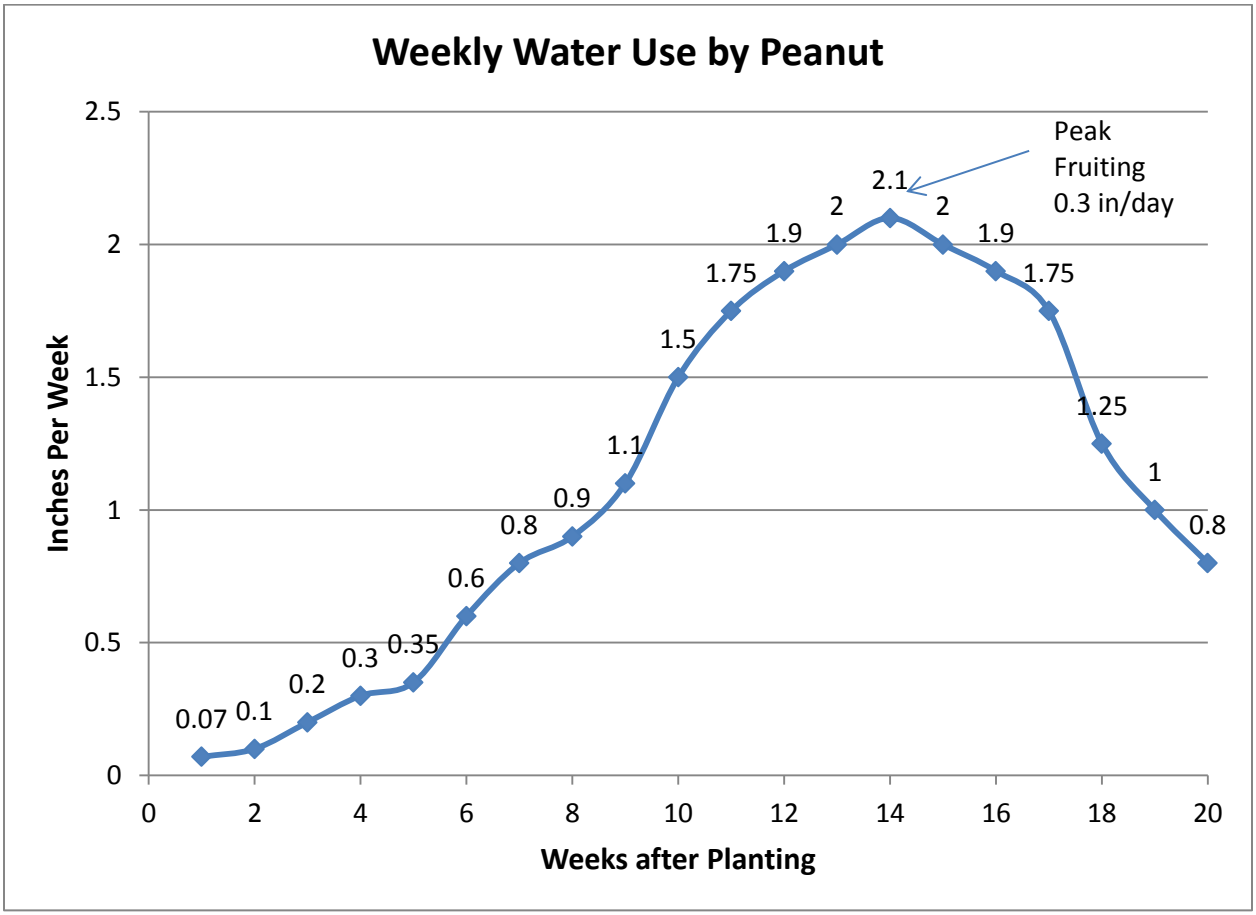


Figure 1. Water response/use curve for peanut.

Irrigation water must be applied correctly (timing and amount) for proper yields and grade. Water can be applied to the soil using overhead sprinkler systems (center pivot, lateral, hose tows, big guns, etc.), surface drip or subsurface drip irrigation. Regardless of irrigation system type, each system must be managed correctly for proper water application. Over irrigation can increase the risk of disease while under irrigation can increase the risk of aflatoxin contamination. Proper irrigation scheduling can promote high yield and grade and can be accomplished by manual or electronic sensors to check water content, sensors to monitor plant water status, use of an irrigation scheduling computer program, or by following a schedule such as the one presented in Table 2 (developed by Beasley and Hook). Rain gauges should be used to measure the water received from rain and the amount supplied by irrigation. An example of how to use these values is included below.

Table 2. Peanut Irrigation Schedule Suggested for High Yields. Use 1.5 in/wk maximum if water is limited or above normal rainfall. Otherwise, consider using the 2.0 in/wk maximum.

Weeks of Growing Season	1.5 Inches/Week Maximum	2.0 Inches/Week Maximum
0 - 4	0.1 – 0.2	0.1 – 0.2
5 – 6	0.5	0.75
7 – 9	0.75	1.0
10 - 12	1.5	1.5
13 - 17	1.5	2.0
18 - 20	0.5	0.75

Irrigation Example

Step 1. The soil type of the field is a Tifton loamy sand. In Table 3, the average available water holding capacity is 0.9 inches/Ft. Assuming a rooting depth of 2 feet, the total available water is 1.8 inches (2 Ft x 0.9 inches/Ft).

Step 2. The peanut crop is at 8th week of growth. Assume water is not limited and use the 2.0 inch max. From Table 2, the weekly water need by the crop is 1.0 inches (2.0 max). This corresponds to 0.14 inches/day.

Step 3. Determine replacement amount by setting the lower allowable limit of available water in the profile. For this example, we will use a typical value of 50% (i.e. only half the water in the root zone will be allowed to be depleted). Therefore, 0.9 inches of water will be needed to replace the water used (1.8 inches x 0.50).

Step 4. Determine the amount of irrigation to apply by dividing the amount to be replaced by an irrigation efficiency from Table 4. (There are always losses between water pumped and water actually reaching the crop, such as evaporation, drift, etc.). In this example, we will assume a fairly new center pivot with optimal efficiency, so use 88%. Thus, amount to apply = 0.9 inches / 0.88 = 1.02 inches.

Step 5. Determine the frequency of irrigation by dividing the amount of water replaced (from Step 3) by water use per day (from Step 2). For example, frequency = 0.9 / 0.14 = 6 days.

Step 6. In this example, it would be necessary to apply 1.02 inches every 6 days to maintain 50% available water in the Tifton loamy sand soil profile for peanut in

the 8th week of growth. Any rainfall received would be subtracted from the amount to apply.

Intervals for most of the season will be 3 to 4 days for coarse textured sand, 4 to 6 days for more productive loamy sand and sandy loam, and 5 to 8 days for fine textured sandy loam or clay soils. A 3 to 6 day interval will fit a majority of the situations.

Table 3. Examples of Available Water Holding Capacities of Soils in the Coastal Plain of Georgia.

Soil Series	Description	Intake (Inches/Hr) for Bare Soil*	Available Water Holding Capacity (inches/Ft)
Faceville	Sandy Loam, 6-12" Moderate intake, but rapid in first zone	1.0	1.3
Greenville			1.4
Marlboro			1.2-1.5
Cahaba	Loamy Sand, 6-12" Loamy subsoil, rapid in first zone, moderate in second	1.2	1.0-1.5
Orangeburg			1.0-1.3
Red Bay			1.2-1.4
Americus	Loamy Sand, 40-60" Rapid permeability	2.0	1.0
Lakeland			0.8
Troup			0.9-1.2
Norfolk	Loamy sand, 12-18" Rapid permeability	1.3	1.0-1.5
Ochlocknee			1.4-1.8
Dothan	Loamy sand and sandy loam, 6-12" Moderate intake	1.0	1.0-1.3
Tifton			0.8-1.0
Fuquay	Loamy sand, 24-26" Rapid permeability in first zone, moderate in second	1.5	0.6-0.8
Lucy			1.0
Stilson			0.9
Wagram			0.6-0.8

* Increase soil infiltration rate in field where conservation tillage methods are used.

Table 4. Examples of Application Efficiency Values for Various Irrigation Systems.

Type Irrigation System	Application Efficiency	
	Attainable	Expected
Center Pivot With Impact Sprinklers With Spray-type Sprinklers		
	85	75-90
	95	75-95
Lateral Move with Spray-type Sprinklers	95	75-95
Micro-Irrigation Subsurface drip Micro-Spray		
	95	75-95
	95	70-95
Trickle	95	70-95
Moving Big Gun	75	60-75

Irrigation Scheduling

The moisture balance or “check-book” method of scheduling described above is a relatively straight-forward means of determining WHEN to irrigate. This helps a grower keep up with an estimated amount of available water in the field as the crop grows. The objective is to maintain a record of incoming and outgoing water so that an adequate balance amount is maintained for crop growth.

Other methods of irrigation scheduling include “expert systems” or software such as Irrigator Pro (USDA), soil moisture sensors from companies such as Irrometer, Decagon, AquaSpy, AquaCheck, John Deere Water, etc., and the UGA EASY Pan (a simplified pan evaporation device). These devices provide near real-time readings of either soil moisture content or soil water tension in the root zone and can identify when water is needed to replenish the root zone.

DISEASE MANAGEMENT in 2013

Bob Kemerait, Tim Brenneman, and Albert Culbreath

Note: Recommendations for use of specific fungicides follows introductory sections on disease and nematode management for 2013 in this chapter.

Effective management of diseases that affect the peanut crop is essential to peanut production in Georgia. Use of effective fungicides and nematicides to protect the peanut crop and maximize yields add to production costs; however such costs are far outweighed by the profit potential to the grower. It is imperative that growers carefully plan an effective strategy to manage diseases and nematodes; a plan that includes the use of crop rotation, selection of more-resistant varieties (see Peanut Rx section in the 2013 Peanut Update), selection of cost-effective fungicide and nematicide programs, and other factors that are a part of an overall integrated pest management program. The "best" management program may not be the least expensive, but rather is the program that gives the best return on investment to the grower. A perfect example relates to the use of "tebuconazole" in a fungicide program to manage soilborne diseases like white mold and Rhizoctonia limb rot. Tebuconazole is a "good" fungicide for the management of white mold and limb rot and is sold at price that is attractive to nearly every peanut grower in the state. Nonetheless, growers will often increase the value of their peanut crop by investing in a fungicide that although more expensive, provides better total disease control increased yields.

From research conducted in recent year at the University of Georgia, it is becoming increasingly clear that an early start to the management of soilborne diseases like white mold can have a real impact on the efficacy of the fungicide program. Whether through use of Proline within weeks after emergence or early-season use of a tebuconazole tank-mixed with a fungicide for leaf spot, these treatments often benefit and supplement the control of white mold provided by our standard programs beginning 60 days after planting.

The section below is written to provide growers with a detailed overview of many aspects of disease management in 2013.

Highlights from 2012 and notes for 2013.

1. **Tomato Spotted Wilt.** Losses to tomato spotted wilt were estimated to be slightly higher in 2012 than in 2011. Reasons for the continued decline of a disease that has had tremendous impact on peanut production in Georgia are unknown. The slight increase in tomato spotted wilt in 2012 could be the result of the unusually mild winter and spring last season. Still, tomato spotted wilt has been of only minor importance to disease loss in recent year. **IMPORTANT**

NOTES: 1) Although the severity of tomato spotted wilt has been in decline over the past several years, this disease continues to be a potential threat to peanut production in Georgia. Growers must continue to incorporate the lessons spelled out in Peanut Rx to minimize the threat from this disease. **2)** The University of Georgia continues to recommend that growers consider planting a portion of their peanut crop in the latter part of April. Spreading the peanut crop over April and May offers many advantages to peanut producers. Although there continues to be some increase in risk to tomato spotted wilt for peanuts planted in April, this risk is of minimal importance when our newer, more resistant, varieties are planted. In short, most growers who plant more-resistant varieties over late-April through May will enjoy significant benefits with only minimal risk.

2. Because the winter of 2011-2012 and the spring of 2012 were so warm, I had predicted that **white mold**, which was severe in numerous fields in 2011, would be severe again last season. Very warm, even hot, soil temperatures early in the season can lead to aggressive development of the disease when the crop was still young. Though white mold was still a significant problem in numerous fields last season, the outbreak was not as severe or as widespread as I had anticipated. Quite simply, ample rainfall and cooler temperatures prevailed in 2012 and white mold developed in a more typical patter. Still, management of this disease will always be critical for growers. Below are points that are critical for growers to remember as they develop a plan for reducing loss to white mold.
    a. The most commonly asked questions from agents, consultants, and growers about disease control over the past three years continue to be management of white mold.
    b. As a reminder, the basic steps to minimizing the impact of white mold in a field include:
        i. Rotation away from peanuts and soybean; it is recommended that peanuts not be planted in a field more than one out of three years.
        ii. Selection of newer peanut varieties with improved resistance to white mold, for example ‘Georgia-07W’ (see the chapter on the 2013 Peanut Rx). **Note:** The points assigned to Georgia-07W for risk to white mold were increased from 10 to 15 points for the 2013 version of Peanut Rx. Simply, Georgia-07W remains one of our more-resistant varieties to white mold; however with continued research it seems that the resistance is not quite as strong as once believed.
        iii. Use of a fungicide program that has an appropriate compliment of fungicides for white mold and leaf spot control recognizing that some fungicides offer the potential for better control than others.
        iv. Appropriate timing of fungicide applications to correspond with the growth of the crop, the threat from white mold (based upon soil temperature and rainfall/irrigation) and the anticipation of rain events or irrigation to help move the fungicide from the foliage to the crown of the plant.
        v. Until recently, it was generally recommended to begin the soilborne component of a fungicide program approximately 60 days after

planting. However, with continued research and a better understanding of white mold, it is now believed that there is merit to beginning management of white mold earlier in the season. Such programs could include an early emergence application of Proline or Abound (0.4-0.8 fl oz/1000 ft) or they could include early applications of tebuconazole (see below) followed by the standard white mold program beginning approximately 60 days after planting.

vi. Growers whose standard white mold program includes Abound, Headline (for soilborne disease control), Fontelis, Evito, Artisan, or Convoy may wish to consider an application of tebuconazole (7.2 fl oz/A) + cholorothalonil (1.0 pt/a) approximately 44 days after planting to get an "early jump" on white mold control. Such an application would be followed by the full-season white mold program. For fungicide resistance management concerns, use of early-season applications of tebuconazole is not advised where a grower will later use a Provost program.

vii. Application of fungicides for the control of white mold at night or in the early morning hours when the leaves are still folded. Such allows better penetration of the canopy so that more of the fungicide reaches the crown of the plant.

viii. Use of Proline 480SC (5.7 fl oz/A) or Abound (0.4-0.8 fl oz/1000 ft) during the period of "early emergence". Research efforts at the University of Georgia in 2010, 2011and 2012 have documented that applications of Proline (5.7 fl oz/A "broadcast rate" BANDED over young plants 2-5 weeks after planting) can have a significant and season-long benefit for management white mold. See next point for initial information on an early emergence application of Proline. Abound is also labeled for such early-season applications and research continues to compare efficacy of Proline versus Abound.

3. The active ingredient in **Proline 480SC** is prothioconazole. (Note: Prothioconazole and tebuconazole are the active ingredients in Provost fungicide.) Applied in-furrow at planting, Proline aides in the management of Cylindrocladium black rot (CBR). However, when applied to the peanut crop AFTER emergence at a broadcast rate of 5.7 fl oz/A BANDED at the full rate over the young peanuts, Proline can provide season long benefits to the management of white mold and possibly Rhizoctonia limb rot as well. As the early-season application of Proline for disease control is a new recommendation from the University of Georgia, growers should **carefully** consider the following points:
    a. An early season application of Proline contributes to the overall management of white mold; however it is unlikely to provide all of the control that is needed. Early-season applications of Proline should be followed by a standard soilborne fungicide program. **NOTE:** If Proline is applied during the early season growers may need to include fungicides

like Artisan, Convoy, Abound, Headline or Evito to full-season "triazole" programs for fungicide resistance management.

b. Once again, the rate of Proline is 5.7 fl oz/A. This FULL RATE should be banded over the young peanuts planted in either single rows or in twin rows (20-40 GPA). If planted in twin rows, the fungicide can be applied with either a single nozzle covering both twins at once (20-40 GPA) or with a single nozzle over each of the twin rows (10-20 GPA/nozzle). Growers should use an "even flat-fan" tip for this application.
c. Timings for early-season applications of Proline have been evaluated between two weeks and five weeks after planting. Although each of these timings can offer increased white mold protection, in 2011 the level of white mold control and subsequent yield benefits on early planted peanuts increased as the application was delayed; i.e., the best results were observed five weeks after planting. The value of specific timings is likely to vary from season to season based upon planting date and weather conditions early in the season.
d. Early-season applications of Proline can provide protection against leaf spot as well as against white mold.
    i. For growers following a 4-5 week-after-planting application of Proline with a Provost program, Bayer Cropscience recommends waiting 21 days and then simply making the first Provost application (approximately 55-60 days after planting).
    ii. For general fungicide programs, an early season application of Proline can be followed 2-3 weeks later with a fungicide application for management of leaf spot. The full-season white mold program should commence at about 60 days after planting.

4. **Cylindrocladium black rot (CBR)** has been scarce in recent years and the disease was uncommon in 2012 as well. In years like 2011 and 2012, the lack of CBR was likely the result of extremely warm soil temperatures early in the season.
5. **"Prescription"** fungicide programs with 4, 5, or 7 fungicide applications continued to be effective even in a heavy white mold year when used in fields with appropriate risk (based upon Peanut Rx). In 2013, Peanut Rx prescription fungicide programs will be supported by Syngenta Crop Protection, Nichino-America, Arysta LifeScience, BASF, Bayer CropScience, DuPont and Sipcam Agro. **Peanut Rx**, with a few modifications for 2013, can be found elsewhere in the 2013 Peanut Update.
6. **Loss of Temik 15G.** Bayer CropScience announced in 2011 that Temik 15G would no longer be produced and only what was already in distribution would be available to growers. Given the important role that Temik 15G plays in the management of peanut root-knot nematodes, the loss of Temik for peanut production will have significant impact on peanut production in Georgia. Earlier reports that indicated that another formulation of aldicarb (the active ingredient in Temik 15G) appear to have been premature. This product, to be known as "Meymik", will not be available to our producers in 2013. Research continues to

assess the benefits of Vydate C-LV, Enclosure, and neem oil for the management of nematodes affecting peanuts.

Specific Fungicide Notes for 2013

1. Fontelis (penthiopyrad) is a new fungicide from DuPont and it was available to growers in 2012. Researchers at the University of Georgia have conducted extensive field tests with this product and have found it to be a very effective fungicide against common peanut diseases such as white mold and leaf spot. Fontelis is applied in three applications (16 fl oz/A each) during the season for management of soilborne and leaf spot diseases. Below are specific reasons why growers should consider using Fontelis in 2013.
    a. Fontelis has broad-spectrum activity and can be used in the management of leaf spot diseases, white mold, Rhizoctonia limb rot, and CBR.
    b. Penthiopyrad, the active ingredient in Fontelis, is in a different fungicide class than are fungicides like Provost, Proline, Quash, tebuconazole, Abound, and Evito. Because of this, Fontelis will play an important role in fungicide resistance management.
    c. In several trials large-plot on-farm trials in 2013, use of Fontelis resulted in excellent control of white mold and strong yields.

2. Generic tebuconazole products (tebuconazole was the active ingredient in Folicur and is the active in many products such as Tebuzol, Monsoon, Savannah, Muscle, Orius, etc.) were among the most popular fungicides used in last season. The popularity of tebuconazole last season was certainly enhanced by the lower cost of an application versus the cost of other products. **In 2013, growers should note the following about tebuconazole:**

    a. The cost of tebuconazole fungicides will keep them popular with growers.
    b. Tebuconazole remains an effective fungicide for management of soilborne diseases and, when tank-mixed with another fungicide, for control of leaf spot diseases.
    c. Overuse of tebuconazole without regards to fungicide resistance management will likely lead to a continued decline in the efficacy of this important fungicide.
    d. Tebuconazole is often an effective tool but is not the best fungicide available for the management of any of our important diseases. In selecting an appropriate fungicide, growers should weigh the cost of tebuconazole against the value of enhanced disease control with other fungicides. **The severe outbreak of white mold in 2011 clearly demonstrated that peanut growers in Georgia have access to fungicides that have increased efficacy against white mold than does tebuconazole.**

e. In a year like 2011, growers commonly asked about the potential benefits of significantly increasing the rate of tebuconazole (beyond 7.2 fl oz/A) to take advantage both of the "expected" benefits of the higher rate and the cost of the product. The University of Georgia Cooperative Extension in NO WAY condones the use of tebuconazole products at rates beyond 7.2 fl oz/A. Not only is this application rate off-label and thus illegal, but we have no data to support improved efficacy anyway with a rate higher than 7.2 fl oz/A. In short, growers who choose to use tebuconazole MUST use it at the 7.2 fl oz/A rate.

Management of peanut root-knot nematodes in 2013

1. Peanut root-knot nematodes are frequently under-managed in Georgia, either because the symptoms are not recognized or because growers are reluctant to take the steps needed to ensure adequate control.
2. Rotation with a crop such as cotton (not a host for peanut root-knot nematode) is a very effective management tool.
3. Growers planting peanuts in fields with damaging levels of peanut root-knot nematodes MUST consider planting 'Tifguard'. Tifguard is nearly immune to the peanut root-knot nematode, does NOT need to be treated with a nematicide, and performs exceptionally well as compared to other varieties that are treated with nematicides.
4. Growers who plant the new peanut variety 'Tifguard' can expect excellent control of nematodes. Note: the concern that some have expressed over "weak peg strength" in Tifguard remains unproven; growers should give significant importance to the near-immunity of this variety to peanut root-knot nematodes and keep any concerns about peg-strength in proper perspective.
5. Fumigation with Telone II (4.5-6 GPA) is our most aggressive treatment to manage peanut root-knot nematodes and provides our best opportunity to manage nematodes affecting peanut IF the grower does not plant Tifguard.
6. Temik 15G (if available), applied both at planting and at-pegging stages, is a critical tool in many areas. Growers who use Temik 15G in 2011 need to carefully familiarize themselves with new use requirements such as maxim use amounts, pre-harvest application intervals, distance from well-heads and water sources, and requirement for irrigation or rainfall within 24 hours after a pegging-time application.
7. Research continues to evaluate the use of Vydate C-LV for management of nematodes on peanut. Results will be presented to peanut growers as they are generated.
8. NemOut, a biological nematicide, will no longer be available to peanut growers.
9. "Enclosure" (iprodione) is a new product being sold for the management of plant parasitic nematodes on peanut.

Management of Peanut Diseases

Although a few growers may have experienced severe outbreaks of tomato spotted wilt in their fields in 2012, this troublesome disease was once again of minimal impact in peanut fields across the Southeastern US. It is estimated that that the incidence of tomato spotted wilt on peanut last season in the Georgia-Florida-Alabama region was about 0.5%. Despite low levels of spotted wilt in 2006, 2007, 2008, 2009, 2010, 2011 and 2012, growers should not become complacent in management of this viral disease. Without taking proper management precautions, growers could experience heavy losses to spotted wilt in 2013. Peanut Rx, the peanut disease risk index developed through collaborative efforts at the University of Georgia, the University of Florida, and Auburn University, has been updated for 2013 and offers growers strategies to minimize risk to not only spotted wilt, but leaf spot, Rhizoctonia limb rot, and white mold as well. The complete 2013 Peanut Rx is presented elsewhere in this Peanut Update.

White mold was the most important disease of peanuts in Georgia in 2008, 2009, 2010, 2011 and again in 2012. The key to the outbreaks of white mold in 2008, 2009, 2010 and 2011 were very warm temperatures in May and June which fueled the disease. Warm soil temperatures are an important factor in the development of white mold. Rainfall and irrigation certainly increase the potential risk and severity of this disease; however white mold can cause much damage even in a drier year when warm soils are common. In drier year, white mold is likely to cause most of its damage to the pods and pegs lying below that ground as it may be too dry in the above-ground canopy.

In managing white mold, note the use of the word “managing” and not “controlling” white mold, growers should not expect 100% effectiveness from any program. It is estimated that 70% control is all that can be expected in the best of situations and 50% control may be all that can be achieved when environmental conditions and factors such as poor crop rotation increase the risk to the disease in a field.

It is extremely difficult to protect a peanut crop from isolated “hits” of white mold in any field. Depending upon the crop rotation in the field, the variety of peanut planted, and the environmental conditions (e.g. weather) during the growing season, a field may have many isolated hits of white mold or fewer hits. An effective fungicide program (to include use of an appropriate fungicide applied at the proper timing with an appropriate spray volume) should minimize the spread of white mold in a field. A grower should be concerned if he notes “runs” of white mold across the field that are several feet in length, or longer, despite use of a soilborne fungicide.

Tools for Disease Management

Peanut growers will have the opportunity to use some new and/or updated tools again in 2013 to further their battle against diseases and nematodes.

1. **Early-season applications of Proline and Abound** fungicides are discussed at the beginning of this section.
2. **"Day versus Night spraying":** Research began in 2007 and was continued in 2008, 2009 and 2010 (both in small plots and in large, on-farm studies) to assess the benefits and potential consequences of spraying fungicides at night for control of soilborne diseases. Because the peanut leaves "fold up" when it is dark, thus opening the interior of the canopy, it is thought that fungicides applied at such time would have better chance of reaching the crown of the plant. For management of soilborne diseases like white mold and Rhizoctonia limb rot, the crown of the plant is targeted for optimum control. Also, it is thought that by spraying fungicides directly into the crown of the plant, the fungicide residues are protected to some degree from sunlight, thus reducing photodegradation and extending the period of efficacy. Below is a summary of findings from the University of Georgia with regards to spraying at night.
    a. Control of white mold can be significantly improved by spraying the peanuts at night or in the early morning hours before sunrise. Provided that the fungicide applied at night has systemic activity, i.e. moves within the leaf tissue, there is no significant reduction in leaf spot control, and yields can be significantly improved with night sprays. When sprayed at night, "protectant" fungicides like chlorothalonil and Elast (dodine) will not provide adequate control of leaf spot diseases.
    b. Improvement of white mold control is more evident in non-irrigated plots than in irrigated plots when fungicides are applied in darkness, though there is likely to be benefit in both situations.
    c. Spraying in the early morning hours before dawn tends to offer slightly better results than in spraying in early evening. It is believed that the dew in the early morning further aids in the relocation of the fungicide.
    d. It is believed that applying fungicides at night will either maintain yields and control of white mold and leaf spot diseases or improve white mold control and yields as compared to daytime applications. There is believed to be little risk to the grower by applying appropriate fungicides at night, other than loss of a sound sleep!
    e. Note: Only fungicides applied for control of soilborne diseases should be considered for application at night. Fungicides applied only for control of leaf spot diseases and rust should continue to be applied during the day.
    f. **Final note: growers must ensure that any fungicide or combination of fungicides applied at night has systemic activity against leaf spot diseases.** Without systemic activity (e.g. a mix of Convoy and chlorothalonil which does not have systemic activity) applying a fungicide at night could lead to a reduced level of leaf spot control. In the previous example, a more appropriate combination would be Convoy a fungicide such as Stratego, Headline, Topsin M + chlorothalonil, Tilt/Bravo, etc.

3. **The 2013 "PEANUT Rx" Disease Risk Index** is now available and has been thoroughly reviewed and revised as needed by researchers, breeders, and Extension specialists from the University of Georgia, the University of Florida, and Auburn University.
4. **"Prescription Fungicide Programs",** i.e. specific disease management programs with an increase or decrease in fungicide applications based upon the 2012 "PEANUT Rx", continues to gain support from the agrichemical industry. In 2013, Syngenta Crop Protection (Abound, Bravo WeatherStik, Tilt/Bravo), Nichino (Artisan, Convoy), Arysta LifeScience (Evito), BASF (Headline), Bayer CropScience (Provost), DuPont (Fontelis) and possibly Sipcam Agro will support prescription programs (4, 5, and 7 applications) for fields determined to be at low, moderate, or high risk according to PEANUT Rx. Prescription programs using fungicides not promoted by the companies mentioned above can also be used successfully by growers; however they would not be endorsed or supported by any company.
5. **Recommendations for the management of CBR** continue to develop as new tools become available. PROLINE (5.7 fl oz/A) is a promising component of a complete fungicide program to reduce the impact of Cylindrocladium black rot (CBR) in a field. With the availability of PROLINE, a good integrated pest management program for growers who wish to manage CBR is to
    a. practice good crop rotation (i.e. rotation away from peanuts and soybeans),
    b. consider planting a variety with some resistance to CBR such as Georgia-02C and Georgia Greener,
    c. use PROLINE, 5.7 fl oz/A in-furrow, at planting, followed by
    d. 4-block program of PROVOST or at least use of a fungicide program that offers suppression of CBR (e.g. Folicur, Abound, or Headline).

CROP ROTATION

The practice of good crop rotation has always been at the foundation of optimum disease management in peanut, affecting not only nematodes and soilborne diseases, e.g. white mold, Rhizoctonia limb rot, and Cylindrocladium black rot, but leaf spot diseases as well. For this reason, Extension specialists at the University of Georgia stress the importance of avoiding planting peanuts in the same field more often than once every three years and rotating with a grass crop, e.g. bahiagrass or corn, if at all possible.

Since the recent change in the Peanut Farm Program, peanut farming in Georgia has expanded into "non-traditional" production areas in the southeastern portion of the state. Growers in this area frequently ask "Can I grow peanuts on my land in back-to-back seasons as I have not grown them here before?" The simple answer is, of course, you can plant peanuts on your land whenever you want to. However, even growers

who are planting peanuts on “new peanut ground” should be discouraged from back-to-back peanuts if possible. Reasons for this include:

1. Many peanut growers around the state would love to have access to “new peanut ground” as populations of pathogens attacking the crop should be initially low. Therefore, it does not make much sense to lose this competitive edge in pursuit of the short-term goal of growing two or three crops of peanuts in succession.

2. Many new peanut growers are producing peanuts on land that has been cropped to cotton in recent years. Although cotton is not affected by the peanut root-knot nematode, early or late leaf spot, or Cylindrocladium black rot (CBR), and is only slightly affected by white mold, it is susceptible to diseases caused by *Rhizoctonia solani*. It is likely that despite previous cropping in a field, there will be significant populations of *R. solani* and perhaps smaller populations of *Sclerotium rolfsii* (white mold) in the field when peanuts are first planted. (This was observed in a test plot in Lanier County in 2004.) Without effective crop rotation, these populations may increase quickly.

3. In 2005, we observed an outbreak of CBR in a field in southeast Georgia planted for two consecutive years to peanut, but had not been planted to peanut at any other time. Earlier crops of soybean had introduced this disease to the field and back-to-back years of peanut had intensified the problem.

One of the greatest benefits of crop rotation is that it increases the effectiveness of all disease management programs. Effective crop rotation takes some of the “pressure off” of a fungicide program to minimize the impact of disease. Any fungicide program will be more effective where good crop rotation is practiced. In some situations, fields that are well rotated will require fewer, or at least less expensive, fungicide applications by the grower.

Recommendations from the University of Georgia for crop rotation and peanut production include the following:

1. Avoid planting peanut in the same field more than once out of every three years. Longer rotations, for example once every four years, are even better.

2. The best crops to rotate with peanut are grass crops, such as corn, sorghum, and bahiagrass. These crops will help to reduce the severity of diseases caused by Rhizoctonia solani, as well as CBR, white mold, and leaf spot diseases. Although corn and sorghum are alternate hosts for the peanut root-knot nematode, they are less affected than peanut is. Therefore, planting corn and sorghum should help to reduce populations of peanut root-knot nematode, though perhaps not as fast as when a non-host such as cotton is planted.

Bahiagrass is susceptible to the lesion nematode, which can reduce the pod brightness important for the green peanut market.

3. Cotton is a very good rotation crop with peanut and should help to reduce the severity of white mold, leaf spot diseases, and CBR on future crops. Cotton is not a host for the peanut root-knot nematode, so this will be a beneficial effect as well. Cotton is a host for *Rhizoctonia solani*, so diseases caused by this pathogen will remain a concern in peanut-cotton rotations, especially in conservation tillage where crop debris remains on the surface.

4. Soybeans, other leguminous crops, and many vegetable crops are not preferred for rotation with peanut. Although such rotations are likely to reduce the severity of leaf spot diseases, they may not reduce the severity of white mold, Rhizoctonia limb rot, the peanut root-knot nematode, or, in the case of soybean, CBR.

DISEASE MANAGEMENT IN 2013

Tomato Spotted Wilt. Every year growers are reminded that the goal of PEANUT Rx is to minimize their risk point total for a specific production field. PEANUT Rx does not dictate when a grower *must* plant peanuts, for example in the middle of May. The purpose of the index is to allow growers to determine how to minimize their point totals given their own needs. For example, if a grower needs to plant in late April, he or she can still achieve a satisfactory point total by making adjustments to other parts of the index, such as selection of a more resistant variety.

Fungal Diseases. Good crop rotation remains the cornerstone of a good disease management program. We recommend that a grower plant peanuts in a field only once every three years, and once every four years is even better. Grass crops, such as bahiagrass and corn, are the best rotation crops with peanuts because they do not share the same diseases or pathogens. (Note: Bahiagrass is a host for the lesion nematode, which does affect peanuts, especially green peanut growers.)

Early and Late Leaf Spot Diseases. Both early and late leaf spot are commonly observed across Georgia's peanut production region.

Management Points for Leaf Spot

1. Practice good crop rotation.
2. Destroy any volunteer peanuts that may grow in a field and bury/remove old peanut hay that can serve as a source of spores for leaf spot diseases.
3. Do not delay the start of a leaf spot fungicide program.

a. When using chlorothalonil (e.g. Bravo Ultrex, Bravo WeatherStik, Echo, Equus, or other generics), Tilt/Bravo, Echo-PropiMax, Stratego, Elast 400F, Eminent 125SC + Echo, or Headline (**at 6 fl oz/A**), and you have adequate crop rotation, your first leaf spot spray will typically be applied somewhere between 30 and 35 days after planting (unless weather has been dry and unfavorable for development of foliar diseases.
b. In fields where risk to leaf spot has been calculated as low-to-moderate, we have maintained good control of leaf spot when using a single application of Tilt/Bravo (2.5 pt/A) 40 days after planting
c. Growers who use the AU-pnut forecasting system, automated at www.AWIS.com, can more effectively time their first application based upon environmental conditions.
d. If you are planting peanuts after peanuts, you will likely need to begin your leaf spot program earlier than 30 days after planting because of the increased risk of disease.
e. If you are using Headline (**at 9 fl oz/A**) for your first leaf spot spray, it is appropriate to combine your first two fungicide applications for leaf spot control (for example at 30 and 44 days after planting) into a single application of 9 oz of Headline at 38-40 days after planting.

4. Traditionally, fungicides are applied on a 14-day calendar schedule beginning after the first application. This 14-day interval may be modified for reasons such as those below:
    a. The interval should be **shorter** than every 14-days if conditions:
        i. Rainfall has been abundant and conditions are favorable for leaf spot.
        ii. You are using the AU-PNUT leaf spot advisory and it calls for an early application.
        iii. Peanuts follow peanuts in a field and leaf spot is expected to be severe.
        iv. Rainfall came on quickly after your last leaf spot spray and you are concerned that some of the fungicide may have been washed off the plants in the field too quickly.
        v. You are planting a variety that has poor resistance to leaf spot diseases.
        vi. Peanut rust appears in your field prior to the end of the season.
    b. It may be possible to extend the spray interval **beyond** 14-days if:
        i. Conditions have been dry and unfavorable for leaf spot, especially if you use the AU-PNUT advisory for spray guidance.
        ii. You are using a variety with increased resistance to leaf spot, such as York, Georgia-07W, or Georgia-03L. For example, if pressure from soilborne diseases is not severe, the spray interval for such varieties could be every 21 days and it is possible to treat the most resistant varieties only three times during the season. (Additional information can be obtained from your local Extension Agent).

iii. **You use Peanut Rx and determine that the predicted risk of fungal disease in a field is low to moderate** and rainfall has not been excessive since your last spray (additional information can be obtained from your local Extension Agent).
iv. Since many fungicide applications are used to manage leaf spot diseases and soilborne diseases, one must consider the effect that an extended spray schedule would have on both types of disease (foliar and soilborne) BEFORE shifting from a 14-day schedule.

5. The "**funky leaf spot**", whose cause is still unknown, typically affects peanut plants very early in the season and can look very much like early leaf spot. It may also cause considerable defoliation of early season foliage. Because this disease typically disappears by the middle of the season, it has not been found to be of real concern. Funky leaf spot has been found to be most severe on peanut varieties such as Georgia-02C and Georgia-03L, but is not thought to cause yield loss for either.
6. Current fungicides DO NOT control **funky leaf spot**; so do not be unduly alarmed by the appearance of leaf spots on your peanuts early in the season. Stay on a good fungicide program and have confidence that this program will control the more important early and late leaf spot diseases.
7. Finding some leaf spot in a field at the end of the season is usually not a problem. As long the diseases are controlled throughout the season, limited defoliation (up to about 30-40%) is not likely to affect your yield. The appearance of leaf spot at the end of the season typically does not mean that your program was ineffective or a failure.
8. Some growers in Florida are mixing chlorothalonil with Topsin-M or Topsin 4.5F or copper fungicides such as Kocide for their final leaf spot sprays to increase peg strength prior to harvest. What do we recommend in Georgia?
    a. Combinations of chlorothalonil and Topsin-M currently provide excellent control of leaf spot.
    b. Combinations of chlorothalonil and copper are also effective in the control of leaf spot.
    c. Data collected at Clemson University demonstrates that peg strength is not increased with use of Topsin-M, Topsin 4.5F, or copper (e.g. Kocide).
9. Failures in leaf spot management in a peanut field are often linked to:
    a. Unacceptable delays in starting your program.
    b. Improper calibration of equipment (not enough material was applied).
    c. Unacceptable delays between applications, such as when weather conditions keep the grower out of the field.
    d. Rain events immediately after a fungicide application have washed the fungicide away too quickly.
10. Use of Chlorothalonil.

a. **Chlorothalonil** is the active ingredient in Bravo products, Echo products, and a number of generics. It is quite effective in the management of leaf spot diseases. Key points:
    i. All chlorothalonil products for peanut appear to be effective. Differences between one brand and another are related to the "stickers" and other substances that are added to the active ingredient to increase effectiveness.
    ii. There is no difference in efficacy between a flowable and dry-flowable formulation of chlorothalonil.
    iii. Two likely benefits from chlorothalonil products when compared to other products for leaf spot control are:
        1. Price.
        2. Use for fungicide resistance management.
    iv. The typical rate for a 720-F formulation is 1.5 pt/A; for a 90-DF formulation is 1.4 lb/A.
    v. Chlorothalonil products are not systemic and must be applied to the leaf surface prior to infection by the fungus.
    vi. Generally, chlorothalonil products have been on the foliage long enough prior to a rain event IF they have had time to dry completely.
    vii. If you feel that your chlorothalonil application may not have had enough time to dry before rain, consider timing your next fungicide application a little earlier to compensate for any reduction in efficacy.
    viii. When conditions have been very favorable for leaf spot (a lot of rain), it is generally true that research plots treated with chlorothalonil will have more leaf spot at the end of the season than plots treated with a systemic fungicide for leaf spot control. This increase in leaf spot rarely results in a reduction in yield.
    ix. Tank mixing Topsin M with chlorothalonil provides a good option for growers who are looking for a "rescue treatment" when leaf spot is developing too quickly in their field.

11. Use of **Elast 400F**:
    a. Elast (dodine) is in a fungicide class different than others used in peanut production. Thus when used in a peanut program it can help to reduce the chances of fungicide resistance that occur with overuse of certain "at risk" fungicides.
    b. Elast is a "protectant" fungicide like chlorothalonil and must be applied before infection by leaf spot pathogens has occurred. If infection has already occurred, application of Elast will be of minimal benefit for disease control.
    c. Elast is used at either 15.0 fl oz/A alone or at 12.8 fl oz/A when tank-mixed with a product like tebuconazole (7.2 fl oz/A) for additional leaf spot control.
    d. Use of Elast is most appropriate where chlorothalonil would be used.

e. Elast is MOST effectively used earlier in the season. Full-season use of Elast has been found in some trials to lead to reduced management of leaf spot diseases when compared to other fungicides applied for leaf spot control

12. **Tilt/Bravo, Echo-PropiMax, Eminent-Echo and Stratego:**
    a. Propiconazole + chlorothalonil is marketed as two products, Tilt/Bravo and Echo-PropiMax.
        i. The rate of this combination is 2.0 fl oz of propiconazole and 1.0 pt of chlorothalonil/A.
        ii. Tilt/Bravo is now marketed as a pre-mix which when applied at 1.5 pt/A, offers the same level of product as described above.
        iii. Tilt and PropiMax are systemic, which means that they can be absorbed into the leaf tissue offering some limited curative activity for recent infections.
        iv. Fungicide resistance management: improper use of Tilt/Bravo or EchoPropiMax with Folicur or Stratego may increase the risk of resistance to the sterol-inhibitor class of fungicides.
    b. Propiconazole + trifloxystrobin is marketed as Stratego.
        i. Stratego is also a systemic fungicide with limited curative activity.
        ii. For leaf spot control, Stratego is applied at a rate of 7.0 fl oz/A.
        iii. Fungicide resistance management: improper use of Stratego with Folicur, Tilt/Bravo, Echo-PropiMax, Abound or Headline will increase the risk of resistance to the sterol-inhibitor and strobilurin classes of fungicides.
    c. Eminent 125SC (tetraconazole) + Echo is a new co-pack from Sipcam and offers leaf spot control similar as other products mentioned in this section.
    d. Where do we see the best fit for these products?
        i. Even though these fungicides have a systemic component, they should be applied BEFORE infection occurs in order to obtain maximum benefit.
        ii. When conditions for leaf spot are favorable, use of Tilt/Bravo, Echo-PropiMax, Eminent 125SC + Echo or Stratego often provides for better leaf spot control than with chlorothalonil alone.
        iii. If growers plan to use one of these fungicides, they are often used early in the season to help insure a good start to leaf spot management.
        iv. If conditions have been favorable for leaf spot (abundant rainfall), a grower has been delayed in spraying for leaf spot, or leaf spot is beginning to appear in the field, use of Tilt/Bravo, Echo-PropiMax, or Stratego may provide benefits beyond chlorothalonil.

13. **Topsin-M** (thiophanate methyl) is a fungicide in the benzimidazole class.

a. Topsin-M can be a very effective part of a leaf spot management program.
b. Growers who use a 4-block tebuconazole program can increase the control of leaf spot by tank-mixing 5.0 fl oz/A Topsin-M with 7.2 fl oz of tebuconazole in alternating applications (either 1 & 3 or 2 & 4).
c. Growers who use a 4-block Artisan program (13-16 fl oz/A on each of four applications, may also want to consider using Topsin as described above.
d. Growers who are looking for an effective fungicide treatment, should leaf spot become a problem in a field, can make an application of Topsin-M (5.0-10.0 fl oz/A) tank-mixed with 1.5 pt/A chlorothalonil. This can be followed up with a second application of the same tank-mix or with an application of Tilt/Bravo.
e. Growers should make no more than two tank-mix applications of Topsin-M pert season in order to avoid fungicide resistance problems.

14. Pyraclostrobin is sold as **Headline**.
    a. Headline has been the most effective fungicide labeled on peanut for management of leaf spot.
    b. **NOTE:** Because Headline is our current standard for control of leaf spot diseases, some growers forget that Headline at rates of 12-15 fl oz/A is also an effective white mold/Rhizoctonia limb rot material as well. Growers who incorporate a higher rate of Headline into their fungicide program can expect excellent leaf spot control and effective soilborne disease control as well.
    c. Headline has the best curative activity of any fungicide for control of leaf spot.
    d. Fungicide resistance management: improper use of Headline with Abound, Evito, or Stratego will increase the risk of resistance to the strobilurin class of fungicides. In most cases, Headline should not be used in a fungicide program that contains Abound, Evito, or Stratego.
    e. For leaf spot control, Headline is typically used as follows:
        i. Two applications at 6.0 fl oz/A at approximately 30 and 44 days after planting. We generally do not spend much time with this pattern, as the one below is a much better option for the grower.
        ii. Combine two traditional leaf spot fungicide applications into a single application at 9.0 fl oz/A approximately 38-40 days after planting.
        iii. Note: Because of its power to control leaf spot, some growers have used Headline as a “salvage” treatment late in the season when leaf spot appears out-of-control in a field. Remember:
            1. It would have been better to use the Headline earlier to try and avoid the problem entirely.
            2. Headline may slow the epidemic of disease, but it will not cure the problem. You will still have leaf spot; perhaps not as much as you would have had if you had not treated with Headline.

3. Using a selective fungicide, such as Headline, when disease is present and severe will increase the risk for the development of fungicide resistance.

13. Abound, Evito, Provost, Fontelis, Quash (metconazole)and tebuconazole products are typically considered to be for control of soilborne diseases; however they must also control leaf spot diseases as well. Provost, Abound, Fontelis and Evito provide effective leaf spot protection alone. Although Quash (metconazole) alone may also provide adequate leaf spot control, where growers who have experienced leaf spot problems when using tebuconazole can assume that similar problems will exsit with Quash unless it is tank-mixed with another fungicide for increased leaf spot control. Problems associated with tebuconazole and leaf spot are usually related to fungicide resistance issues or are traced back to rain or irrigation soon after application. To maximize leaf spot and white mold/limb rot control with Folicur/tebuconazole, it is best that the crop dry for 24 hours before irrigation. Where rainfall is abundant and/or resistance is likely, most growers will add a half-rate of chlorothalonil or Topsin to 7.2 fl oz/A of tebuconazole for added leaf spot protection.

SOILBORNE DISEASES

White Mold and Rhizoctonia Limb Rot Diseases: White mold will likely to occur in nearly every peanut field in Georgia; Rhizoctonia limb rot can be an important problem in some fields. Losses caused by these diseases can be severe and they are much more difficult to control than leaf spot diseases. Prior to 1994 when Folicur was first labeled, growers did not have any truly effective fungicides to control theses diseases. Since 1994, growers now have six different fungicides from three different classes that can effectively control both white mold and Rhizoctonia limb rot. Still, white mold and limb rot remain troublesome to growers. Two of the reasons for difficulty in control are 1) it can be tough to tell when you need to begin spraying, and 2) it is not easy to get the fungicide to its target where it can affect the pathogen.

Management points for white mold and Rhizoctonia limb rot.

1. Practice good crop rotation.
    a. Corn, grass crops, and bahiagrass are good rotation partners reducing effect of white mold and Rhizoctonia limb rot.
    b. Cotton will reduce the risk of white mold but will have less benefit on Rhizoctonia limb rot.
2. Choose resistant varieties when available.
    a. Some new varieties, such as Georgia-02C and Georgia-07W, have increased resistance to white mold over Georgia Green.

    b. Georgia Green appears to have better resistance to Rhizoctonia limb rot than many other varieties.
3. Consider an application of Proline 480SC (5.7 fl oz/A) or Abound (0.4-0.8 fl oz/1000 ft) early in the season (2-5 weeks after planting) and follow it with a traditional fungicide program. More information is available at the first of this section.
4. Apply fungicides for control of soilborne diseases at night when leaves are folded to allow greater penetration to the crown of the plant. Soilborne diseases are most effectively controlled when the fungicide reaches the crown and lower limbs of the plant.
    a. Fungicides applied in late evening for management of soilborne diseases are at least as effective, and often more effective, then the same fungicides applied during the day.
    b. Fungicides applied for management of soilborne diseases appear to be most effective when applied early in the morning after dew set, but before daylight. The moisture from the dew seems to further help in the re-distribution of the fungicide on the crown and limbs of the crop.
    c. Because fungicides applied for control of soilborne diseases must also protect against leaf spot diseases as well, it is important that the grower use a fungicide, or tank-mix an additional fungicide, that has systemic movement in the leaf.
    d. All “leaf spot only” fungicide applications should be applied during the day to achieve maximum coverage of the leaves.
5. Use appropriate fungicides.
    a. NOTE: No fungicide program will give the grower complete control of soilborne diseases in a field. We estimate that, at best, a good soilborne fungicide program will give 60-70% control under ideal conditions.
    b. Initiating fungicide applications is often imprecise and is based upon experience.
    c. The timing of fungicides for controlling white mold and limb rot must be early enough to protect the crop when the disease first appears. However, growers should avoid applying soilborne fungicides too early so that they will be available when needed later in the season.
    d. Initial appearance of soilborne diseases is related to the soil temperature, the growth of the crop, and rainfall/irrigation.
    e. In Georgia, we generally start spraying for soilborne diseases approximately 60 days after planting. At this time in the season, the growth of the crop and the environmental conditions are suitable for disease to occur. Because white mold and Rhizoctonia limb rot can occur earlier than this, the grower should watch his fields carefully to determine when the diseases appear.
    f. Example: In 2003, rainfall was abundant and we predicted that severe white mold would occur early in the season. However, white mold did not appear until later in the season and was much of a late-season problem. The most probable reason for this was temperature.

Although the moisture was suitable for white mold (and limb rot), the cooler-than-normal summer temperatures delayed the onset of white mold. In 2006, white mold was severe across much of the production region of Georgia despite dry conditions. Again, the warm soil temperatures resulted in outbreaks of white mold, though the drought reduced the severity of Rhizoctonia limb rot.

g. Fungicides are applied to the foliage, but must reach the crown and limbs of the plant in order to be effective against soilborne diseases.
    i. The fungicides can be moved by rainfall and irrigation. If rainfall or irrigation occurs too quickly after application, the fungicide may not provide enough protection for leaf spot.
    ii. If the rainfall or irrigation is delayed, absorption of the fungicide into the foliage may reduce the amount available to fight soilborne disease.
    iii. In a dryland situation, lack of rainfall, and thus movement down the plant, will reduce the effectiveness of a soilborne fungicide. Still, the fungicide was probably not wasted; some of the product likely reached the desired target with the spray mix.
    iv. If fungicides are applied during the night after the leaves have folded, more fungicide will reach the crown of the plant where it is needed to control soilborne disease.
h. Management with **tebuconazole**.
    i. Tebuconazole is marketed as Folicur, Tebuzol, Orius, Tri$um, Integral, Muscle, Tebustar, etc.
    ii. Tebuconazole is effective against white mold and Rhizoctonia limb rot.
    iii. Tebuconazole remains effective against early and late leaf spot; however the fungicide is not as effective as it once was due to development of resistance by the fungal pathogens.
    iv. It is recommended that tebuconazole remain on the leaf surface for 24 hours after application to insure enough is absorbed for leaf spot control.
    v. If tebuconazole is washed from the leaves too quickly, leaf spot control may suffer, though the grower may get maximum control of white mold and limb rot.
    vi. In extremely wet weather, or when the threat from leaf spot diseases is elevated or where resistance has developed, growers should choose to mix 0.75-1.0 pt of chlorothalonil or 5 fl oz Topsin with 7.2 fl oz of tebuconazole to insure leaf spot control. At one time the addition of chlorothalonil was thought to impede the movement of Folicur from the foliage; however this has not found to be a problem. Note: Topsin is added to two alternating applications of tebuconazole in a 4-block program.
    vii. Tebuconazole is applied at a rate of 7.2 fl oz/A, beginning approximately 60 days after planting.

viii. In the most traditional program, tebuconazole is applied in a four-block program, on a 14-day interval.
ix. Fewer than four applications of tebuconazole may be sufficient in some low disease situations; however this will be an off-label program.
x. Improper use of tebuconazole with Stratego, Tilt/Bravo, or Echo-PropiMax could increase the risk of fungal resistance to the sterol-inhibitor fungicides.

i. Management with **Quash** (metconazole)
   i. Quash is a triazole fungicide that is in the same chemical class as tebuconazole.
   ii. Quash is sold by Valent and is used at rates between 2.5 and 4 oz/A.
   iii. Ideally, when Quash is applied at rates of 2.5 to 4 oz/A, a grower should not need to tank-mix additional materials for enhanced leaf spot control. However, where leaf spot resistance to tebuconazole has developed, growers can expect that leaf spot resistance to Quash may also exist. In such cases, it may be important to find a leaf spot tank-mix partner to ensure adequate control when using Quash.
   iv. **Quash** at 2.5 oz/A should be sufficient for control of white mold and Rhizoctonia limb rot under "normal" conditions. Where conditions are favorable for severe outbreaks of white mold, e.g. poor rotation, favorable weather, growers should use the higher rate at 4.0 oz/A.

j. Management with **Provost** (tebuconazole + prothioconazole)
   i. Provost is available to peanut growers in 2010 from Bayer CropScience.
   ii. Based upon results from the University of Georgia, Provost appears to have better systemic activity than other soilborne fungicides. This means that Provost can be more easily translocated within the plant from where it was applied to other regions for greater protection.
   iii. Bayer CropScience recommends that Provost be used in a 4-block program like Folicur.
   iv. The standard rate for Provost is 8.0 fl oz/A; however the rate can be effectively increased to as much as 10.7 fl oz/A when pressure from white mold or limb rot is severe.
   v. Because Provost is a combination of two fungicides within the same chemical class (triazoles/DMI fungicides), it is EXTREMELY important that growers practice good fungicide resistance management principals with this product in order to maintain its efficacy over an extended period of time.
   vi. From University data, Provost has provided excellent control of leaf spot diseases and control of white mold, Rhizoctonia limb rot, and CBR that is at least as good as that of Folicur.

vii. To avoid causing injury to the foliage, growers should carefully read the Provost label before tank-mixing this product with other fungicides.

k. Management with azoxystrobin.
    i. Azoxystrobin is marketed as **Abound** and is typically applied at 60 and 90 days after planting at 18.5 fl oz/A.
    ii. A lower rate (12.0 fl oz/A) is allowed by label in dryland situations or in reduced-risk “Prescription Programs”; however it must be used with caution, as it will not have the “power” of the full rate. We typically do not recommend this rate unless each Abound application is alternated with applications of tebuconazole at 7.2 fl oz/A OR a grower is carefully using a prescription program in a reduced risk field.
    iii. Abound is effective against leaf spot diseases, white mold, and is excellent for management of Rhizoctonia limb rot.
    iv. For maximum efficacy against white mold and limb rot, the field should receive irrigation or rainfall within 72 hours after application.
    v. Fungicide resistance management: To avoid problems with fungicide resistance, Abound should not be used in the same program with Evito, Absolute, Stratego or Headline.
l. Management with fluoxastrobin.
    i. Fluoxastrobin is marketed as **Evito** 480SC.
    ii. Evito is in the same chemical class (strobilurins) as are Headline, Abound, Stratego, and Absolute and should not be used in the same fungicide programs as these products.
    iii. Recommended use for Evito is two applications of product (5.7 fl oz/A) timed approximately 60 and 90 days after planting.
    iv. Evito is an effective component of a peanut disease management program; however it may not be quite as effective against leaf spot and soilborne diseases as are other fungicides.
    v. Evito is NOT “generic Abound”.
    vi. Evito T (a combination of Evito and tebuconazole) is also available as a pre-mix from Arysta Lifesciences and should provide good management of peanut diseases.
m. Management with Fontelis.
    i. Based upon research results, Fontelis appears to be a very strong fungicide for the management of white mold, leaf spot, Rhizoctonia limb rot and the suppression of CBR.
    ii. Fontelis is in the same chemical class as are Artisan and Convoy.
    iii. The typical use pattern for Fontelis is 3 applications at 16 fl oz each to be applied beginning 60 days after planting.
n. Management with flutolanil.

i. Flutolanil is an excellent fungicide for the management of white mold and is also effective against Rhizoctonia limb rot. It is not effective against leaf spot diseases.
ii. Flutolanil is marketed as **Artisan** and **Convoy**.
    1. Convoy, contains only flutolanil and must be mixed with the full-rate of another fungicide for control of leaf spot. Convoy is typically applied at 26 fl oz/A twice (60 and 90 days) or at 13 fl oz/A in a four-block program.
    2. Artisan is a combination of flutolanil and propiconazole. Therefore, it will control leaf spot, white mold, and limb rot. Artisan can be applied at a rate or 26 or 32 fl oz/A.
    3. Convoy and Artisan are typically applied at 60 and 90 days after planting, though Artisan and Convoy can also be applied in a 4-block program.
    4. When using Artisan in a 4-block program, it is applied at rates between 13 and 16 fl oz/A and tank-mixed with an additional leaf spot material, e.g. 1.0 pt chlorothalonil/A or perhaps an alternation of chlorothalonil with Topsin at 5 fl oz/A.
    5. As a final note, the flutolanil products Artisan and Convoy have performed **exceptionally well** in field trials where white mold was severe.

o. Management with pyraclostrobin.
i. Pyraclostrobin is sold as **Headline** (as discussed in the leaf spot section).
ii. Headline is effective in a soilborne disease management program against white mold and limb rot when applied at the 12-15 fl oz/A rate.
iii. Headline is not used as a “stand-alone” soilborne fungicide, but rather is used in combination with tebuconazole, or perhaps Artisan or Moncut.
iv. Headline is not used with Evito, Absolute, Stratego or Abound for fungicide resistance management concerns.
v. Use of Headline at 12.0 fl oz will provide adequate control of white mold and limb rot when used as a part of a soilborne program and will provide exceptional leaf spot control.
vi. An ideal use of Headline would be 9 fl oz/A at 40 days after planting, 7.2 fl oz/A Folicur at 60 days after planting, and 12.0 fl oz/A Headline at 74 days after planting.
vii. Results suggest that growers can greatly improve management of white mold with Headline when it is applied at NIGHT.

p. Management with mixed programs. Some peanut growers in Georgia are experimenting with fungicide programs that mix different fungicides for the control of soilborne diseases and the results can be outstanding. The goal in mixing fungicides is to capture the best

control available through the use of multiple chemistries. While some of these programs, like the alternate use of Folicur and Abound, for a total of four soilborne fungicide applications, appear to be quite effective, the grower must accept all responsibility if his program is off-label.

q. **Managing White Mold with Lorsban 15G.** Prior to Folicur, the insecticide Lorsban 15G was one of the only chemicals that growers had to manage white mold. As Folicur and then Abound were labeled, growers turned away from Lorsban for control of white mold. However, results from field trials in 2003 demonstrate that application of Lorsban 15 G (13.6 lb/A) in conjunction with fungicides may provide control of white mold beyond that of the fungicides alone. It appears that Lorsban 15G may still have a place in white mold control.

Cylindrocladium Black Rot (CBR): CBR is a very challenging disease to control and of increasing importance to growers across the state. Crop rotation away from peanut and soybean is an important management tool. Also, it is important that growers not introduce infested soil from fields where CBR occurs to fields where it is not yet present. This can be done best by cleaning equipment and vehicles before traveling between fields. In recent years, it has been proven that CBR can be transmitted via seed, though at a very low rate. Growers should try to obtain seed produced in fields free of CBR. They should also recognize that much of the seed for Virginia varieties is produced in the Virginia-Carolina region where CBR is of even greater importance than it is in Georgia.

Management points for CBR

1. Crop rotation away from peanut and soybean. Unfortunately, once CBR is established in a field, it is very difficult to eliminate. Not only can the fungal pathogen survive for long periods of time in the soil, but it can also infect common weeds such as beggarweed and coffee weed.
2. **Proline 480SC** (prothioconazole) is a fungicide that is labeled to be applied in-furrow at planting time for management of CBR. The in-furrow rate is 5.7 fl oz/A. The in-furrow application of Proline promises to be a critical component for the management of CBR when followed by foliar application of the effective fungicides noted below. From numerous studies, it is demonstrated that liquid inoculants can be mixed with Proline without loss of efficacy of the fungicide or the inoculant.
    a. Where peanuts are planted in single-row patterns, the Proline is applied at 5.7 fl oz/A beneath the row.
    b. Where peanuts are planted in twin-row patterns, the Proline rate must be split under each row so that the TOTAL rate remains at 5.7 fl oz/A. Where twin rows are planted, the grower can come back an additional 5.7 fl oz/A to the seedlings 14 days after cracking.

3. Provost, Folicur, Abound, and Headline are labeled for the “suppression” of CBR. This means that these fungicides may reduce the symptoms of disease and possibly increase yields above other fungicides. Growers who are battling CBR may choose to use Provost, Folicur, Abound, or Headline for CBR suppression, though results are variable and sometimes disappointing.
4. Varieties with some level of resistance were not available to growers until recently. In the past several years, varieties Georgia-02C, Georgia Greener and Carver, have been released and appear to have at lest some level of resistance to CBR. (Note: Tifguard is no longer recognized as resistant to CBR.) Growers who have fields where CBR is found may want to consider planting these varieties.
5. It has been found that CBR is more severe in fields where the peanut root-knot nematode also occurs. Therefore, growers who manage nematodes with either Telone II or Temik 15G may find some suppression of CBR as well.
6. Fumigation with metam sodium (e.g. Vapam) at 10 gal/A directly beneath the row 10 days prior to planting is currently our best management strategy for the control of CBR. Results can be quite dramatic and can allow growers to plant peanuts in fields where it would otherwise be nearly impossible to grow a crop.

Prescription Fungicide Programs

“Prescription fungicide programs” are defined as strategies designed to maximize yields and maintain disease control in a field using the appropriate number and type of fungicide applications based upon the risk to disease in the field. The goal of prescription fungicide programs is too use the right amount of fungicide for the level of disease expected in a field and to modify the fungicide use as the risk of disease increases or decreases as the season progresses.

Fields where the risk to disease is high, for example where fields have shorted crop rotation, are planted to less resistant varieties, and weather favors disease development should receive at least seven fungicide applications during the season, and perhaps more.

Fields where the risk to disease is reduced to a low or moderate level, for example where fields have longer rotations and are planted to more resistant varieties, typically do not need the same fungicide program as a higher risk field in order to maximize yields. Research data from many on-farm and small plot studies conducted at the University of Georgia have demonstrated that growers who manage their crop so as to reduce the risk to leaf spot, white mold, and Rhizoctonia limb rot can also reduce the number of fungicide applications and increase the value of their crop by cutting production costs. In low risk fields, it is quite possible to reduce the number of fungicide

applications from seven to four, so long as the grower is willing to watch the field to insure that disease does not begin to develop unnoticed.

Growers interested in developing prescription programs should first assess the risk in their field(s) using the PEANUT Rx Disease Risk Index and then contact their local county agent for guidance on a suitable fungicide program. Syngenta Crop Protection, Nichino-America, BASF, Arysta LifeSciences, DuPont and Bayer CropScience have developed their on prescription programs with input from University researchers. Growers who use an industry-sponsored prescription program in reduced risk fields can have the confidence that the company will "stand behind" these programs as long as risk level has been appropriately assessed and the appropriate fungicide program has been used.

Managing Seedling Diseases: Seedling diseases were typically not a concern for peanut growers in Georgia prior to the arrival of the tomato spotted wilt virus. Even if some plants were lost in a stand, the neighboring peanut plants were often able to compensate for the loss by growing into the vacated space. However, it is clear that spotted wilt can be devastating when fields have poor stands. For this reason, getting a good stand has become critical for growers. Below are some management techniques to reduce seedling diseases (primarily caused by *Rhizoctonia solani* and *Aspergillus niger*).

1. Rotate peanuts with grass crops to reduce the populations of *Rhizoctonia solani.*
2. Plant the peanut crop when soil temperatures are warm enough to produce rapid, vigorous germination and growth. This can help protect the plants from disease. Excessive moisture at planting will also increase the risk of seedling diseases.
3. Use quality seed that has a good germination rating and will grow vigorously.
4. Choose varieties that are known to germinate and emerge uniformly and with vigor.
5. Use only seed treated with a commercial fungicide seed treatment. The seed treatments that are put on commercial seed prior to purchase are outstanding and provide protection for the seed and seedling. Seed treatments include:
    a. Vitavax PC
    b. Dynasty PD (azoxystrobin + mefenoxam + fludioxonil)
6. Use an in-furrow fungicide where the risk of seedling disease is great or where the grower wants increased insurance of a good stand.
    a. Abound at 6.0 fl oz/A in the furrow at planting can provide increased control of seedling diseases, including Aspergillus crown rot.
    b. Terraclor (64 fl oz/A) also provides additional control of seedling diseases when applied in-furrow.

c. Growers who are most likely to yield benefits from these in-furrow fungicides are those that have poor crop rotation and a history of seedling disease in the field.

Managing root-knot nematodes: Peanut root-knot nematodes are a severe problem in some fields in Georgia, especially in the sandy soils in the southwest corner of the state. Growers initially become aware of the problem when they note stunted plants across patches in their field. At harvest, many of the pods and pegs from these fields are galled and of poor quality. Based upon conversations with growers, it is likely that many fields across the state have problems with root-knot nematodes, but growers may fail to attribute the cause to nematodes. Below are some management options.

1. Use crop rotation to avoid building large populations of nematodes in a field. Cotton is an excellent rotation crop with peanut to reduce levels of nematodes.
2. Plant the root-knot nematode resistant variety '**Tifguard**'. Use of additional nematicides is NOT needed to protect Tifguard; however it is necessary to use a product such as phorate to protect against thrips injury.
3. **Telone II** at a broadcast rate of 6 gal/A or an in-furrow rate of 4.5 gal/A provides the most consistent and effective control of the root-knot nematodes on peanuts. The following comments are important for the most effective use of Telone II.
    a. Telone II must be applied 7-14 days before planting to avoid damaging the crop.
    b. Growers should ensure that soil conditions are favorable for the effective diffusion of Telone II at the time of fumigation. The seed bed should be carefully prepared and free from large clods of dirt. The soil should be neither too dry nor too wet. The soil should not be wet, but should "clump" together when pressed tightly in one's fist.
    c. Growers should carefully follow all safety precautions when using a fumigant such as Telone II.
    d. Some insecticide, e.g. phorate or Temik 15G, should be applied at planting to ensure adequate control of thrips.
    e. Applications of Temik 15g at 10 lb/A at pegging may still be advisable, even when Telone II was used prior to planting.

Enclosure (iprodione) is a new product being sold for the management of plant parasitic nematodes on peanut. The parent company of this product, Devgien, continues to invest significant resources in field trials to assess the efficacy of Enclosure on peanuts in our state. Again, as more research results become available, they will be shared with growers, county agents, and consultants.

MINIMIZING DISEASES OF PEANUT
IN THE SOUTHEASTERN UNITED STATES

The 2013 Version of the Peanut Disease Risk Index

Robert Kemerait, Albert Culbreath, John Beasley, Eric Prostko,
Tim Brenneman, Nathan Smith, Scott Tubbs, and Rajagopalbabu Srinivasan
The University of Georgia, College of Agricultural and Environmental Sciences

Barry Tillman, Diane Rowland, and Nicholas Dufault
The University of Florida, Institute of Food and Agricultural Sciences

Austin Hagan and Ayanava Majumdar
Auburn University

Scott Monfort
Clemson University

Losses to tomato spotted wilt across the peanut production region of the southeastern United States were the lowest recorded since estimates began in 1990. It is estimated that losses associated with spotted wilt were about 0. 5% in 2012. It is believed that growers were able to achieve excellent management of this disease in large part through combined use of Peanut Rx and varieties with improved resistance.

The Spotted Wilt Index and the Peanut Fungal Disease Risk Index were successfully combined in 2005 to produce the Peanut Disease Risk Index for peanut producers in the southeastern United States. The Peanut Disease Risk Index, developed by researchers and Extension specialists at the University of Georgia, the University of Florida, and Auburn University, is now officially known as “PEANUT Rx”.

The 2013 version of PEANUT Rx has been fully reviewed and updated by the authors based upon data and observations from the 2012 field season.

There have been a few updates to PEANUT Rx, 2013 from the 2012 version. The changes that have been made can be found in the cultivar/variety section of Peanut Rx.

As in the previous versions of the Disease Index, growers will note that attention to variety selection, planting date, plant population, good crop rotation, tillage, and other factors, can have a tremendous impact on the potential for disease in a field.

Spotted Wilt of Peanut

When tomato spotted wilt virus (TSWV) infects a host plant, it can cause a disease that severely weakens or kills that plant. This particular virus is capable of infecting an unusually large number of plant species including several that are important crops in the southeastern United States. In recent years, peanut, tobacco, tomato and pepper crops have been seriously damaged by TSWV. The only known method of TSWV transmission is via certain species of thrips that have previously acquired the virus by feeding on infected plants. The factors leading to the rapid spread of this disease in the Southeast are very complicated and no single treatment or cultural practice has been found to be a consistently effective control measure. However, research continues to identify factors that influence the severity of TSWV in individual peanut fields.

Peanuts and fungal diseases: an unavoidable union

Successful peanut production in the southeastern United States requires that growers use a variety of tactics and strategies to minimize losses to disease. Weather patterns in Georgia and neighboring areas during the growing season, including high temperatures, high humidity and the potential for daily rainfall and thunder storms, create the near-perfect environmental conditions for outbreaks of fungal diseases. Common fungal diseases include early and late leaf spot, rust, Rhizoctonia limb rot, southern stem rot (referred to locally as “white mold”), Cylindrocladium black rot and a host of other diseases that are common, but of sporadic importance. If peanut growers do not take appropriate measures to manage fungal diseases, crop loss in a field may exceed 50%.

Strategies for managing fungal diseases of peanut are typically dependent on the use of multiple fungicide applications during the growing season. Fungicide applications are initiated approximately 30 days after planting, as the interaction between the growth of the crop and environmental conditions are likely to support the development of leaf spot diseases. The length of the effective protective interval of the

previous fungicide application determines the timing for subsequent applications. The length of time in which a fungicide can protect the peanut plant from infection is dependent on the properties of the fungicide and on weather conditions. Many growers will begin treating for soilborne diseases approximately 60 days after planting. With attention to proper timing of applications and complete coverage of the peanut canopy, growers can expect good to excellent control of leaf spot and reasonable control of soilborne diseases. Although control of leaf spot may approach 100%, growers typically can only expect about 60-70% control of soilborne diseases with effective fungicide programs.

Weather plays a major role in the potential for disease. Most fungal diseases will be more severe during periods of increased rainfall and of less concern during drier periods. **When weather conditions are very favorable for disease, severe epidemics may occur in fields where disease was not thought to be a problem. When weather conditions are unfavorable for fungal growth, disease severity may be low even in fields where it has been common in the past.** The AU-pnut leaf spot advisory that has been used to effectively manage diseases in peanut is based on this relationship between disease and weather. Even those growers who do not use AU-pnut recognize the need to shorten the time between fungicide applications in wet weather.

Factors Affecting the Severity of TSWV on Peanut

Peanut Variety

No variety of peanut is immune to TSWV. However, some varieties have consistently demonstrated moderate levels of resistance. In addition to resistance, (reduced disease incidence), some varieties appear to have some degree of tolerance (reduced severity in infected plants) as well. Higher levels of resistance and tolerance are anticipated since peanut breeding programs are now evaluating potential new varieties for response to TSWV.

Peanut varieties can have a major impact on fungal disease. The variety ‘Georgia Green’ is currently planted on much of the peanut acreage in the Southeast. However, newer varieties from breeding programs at the University of Georgia and the University of Florida not only have improved resistance to spotted wilt, but to fungal diseases as well. For example, the variety ‘Georgia-07W’ has resistance to white mold that is better than that found in Georgia Green. Variety ‘Georgia-02C’ has a level of resistance to Cylindrocladium black rot (CBR) that is superior to that of Georgia Green. Just as none of the current varieties is immune to spotted wilt, none are completely immune to fungal diseases either. However, improved resistance will likely lead to reduction in disease severity. It is important to remember that improved resistance to

one disease does not mean that the variety also possesses superior resistance to other diseases.

Planting Date

Thrips populations and peanut susceptibility to infection are at their highest in the early spring. The timing of peanut emergence in relation to rapidly changing thrips populations can make a big difference in the incidence of TSWV for the remainder of the season. Optimum planting dates vary from year to year, but in general, early-planted and late-planted peanuts tend to have higher levels of TSWV than peanuts planted in the middle of the planting season. Note: In recent years, peanut planted in the second half of May and in June have been less affected by spotted wilt than in previous years.

It is important for larger acreage peanut farmers to spread their harvest season. Some staggering of planting dates may be necessary, but to avoid spotted wilt pressure, it may be more effective to plant varieties with different time-to-maturity requirements as closely as possible within a low-risk time period. If peanuts must be planted during a high-risk period, try to minimize the risk associated with other index factors.

Planting date can affect the severity of fungal diseases in a field. Earlier planted peanuts (April-early May) tend to have more severe outbreaks of white mold than do later planted peanuts. Earlier planted peanuts are likely to be exposed to longer periods of hot weather, favorable for white mold, than later planted peanuts which will continue to mature into late summer or early fall. However, the threat from leaf spot is generally more severe on peanuts planted later in the season than earlier. Reasons for this include the warmer temperatures later in the season that are more favorable for the growth and spread of the leaf spot pathogens and because the level of inoculum (number of spores) in the environment increases as the season progresses. Thus, later planted peanuts spend a greater portion of their growth exposed to increased leaf spot pressure than do earlier plantings.

NOTE: Because of the reduction of tomato spotted wilt in recent years, the increased resistance in new varieties, and the need for timely harvest of the peanut crop, growers are encouraged to consider planting a portion of their crop in April, assuming the risk to tomato spitted wilt is appropriately managed. Growers who plant the MORE RESISTANT peanut varieties in the latter part of April are not at a significant risk to losses from tomato spotted wilt in the 2013 season.

Plant Population

An association between skippy stands and higher levels of TSWV was noted soon after the disease began to impact peanut production in Georgia. More recently, research has confirmed the impact of plant population on TSWV incidence. Low and high plant populations may actually have the same number of infected plants, but the percentage of infected plants is greater in low plant populations. In other words, a higher plant population may not reduce the number of infected plants, but it will increase the number of healthy plants that can fill in and compensate for infected plants. In some cases, low plant populations may result in increased numbers of thrips per plant thereby increasing the probability of infection. When plant populations are as low as two plants per foot, severe losses to TSWV have been observed even when other factors would indicate a low level of risk. Getting a rapid, uniform stand with the desired plant population is a function of not only seeding rate but also seed quality, soil moisture, soil temperature and planting depth.

NOTE: In the 2013 Version of Peanut Rx, peanut varieties with a risk to TSWV at 25 points or less have a reduced risk (10 points) when planted at 3-4 seeds per foot than do varieties with a risk of 30 points or greater (15 points). This is based upon recent research conducted at the University of Georgia by Dr. Scott Tubbs.

Plant population has less effect on fungal diseases than on spotted wilt. However, it is now known that the severity of white mold increases when the space between the crowns of individual plants decreases. This is because the shorter spacing allows for greater spread of the white mold fungus, *Sclerotium rolfsii*.

Insecticide Usage

In general, the use of insecticides to control thrips vectors has been an ineffective means of suppressing TSWV. In theory, lowering overall thrips populations with insecticides should effectively reduce in-field spread of TSWV. However, insecticides have proven to be ineffective at suppressing primary infection, which accounts for most virus transmission in peanut fields. Despite the overall disappointing results with insecticides, one particular chemical - phorate (Thimet 20G and Phorate 20G), has demonstrated consistent, low-level suppression of TSWV. The mechanism of phorate's TSWV suppression is not known, but the level of thrips control obtained with phorate is <u>not</u> greater than that obtained with other insecticides. Phorate may induce a defense response in the peanut plant that allows the plant to better resist infection or inhibits virus replication.

Row Pattern

Seven to ten-inch twin row spacing, utilizing the same seeding rate per acre as single row spacing, has become increasingly popular in Georgia. Research on irrigated peanuts has shown a strong tendency for significantly higher yields, a one to two point

increase in grade and reductions in spotted wilt severity that have averaged 25-30%. The reason for this reduction in spotted wilt is not fully understood.

Row pattern, either single or twin row plantings, also has some effect on the potential for disease in a field. Work done at the Coastal Plain Experiment Station has lead to the observation that white mold is more severe in single rows (six seed per foot) than in twin rows (three seed per foot). White mold often develops in a field by infecting sequential plants within the same row. Planting the seed in twin rows rather than single rows increases the distance between the crowns of the peanut plants and delays the spread of white mold from plant to plant. The difference in leaf spot between single and twin row peanuts appears to be negligible.

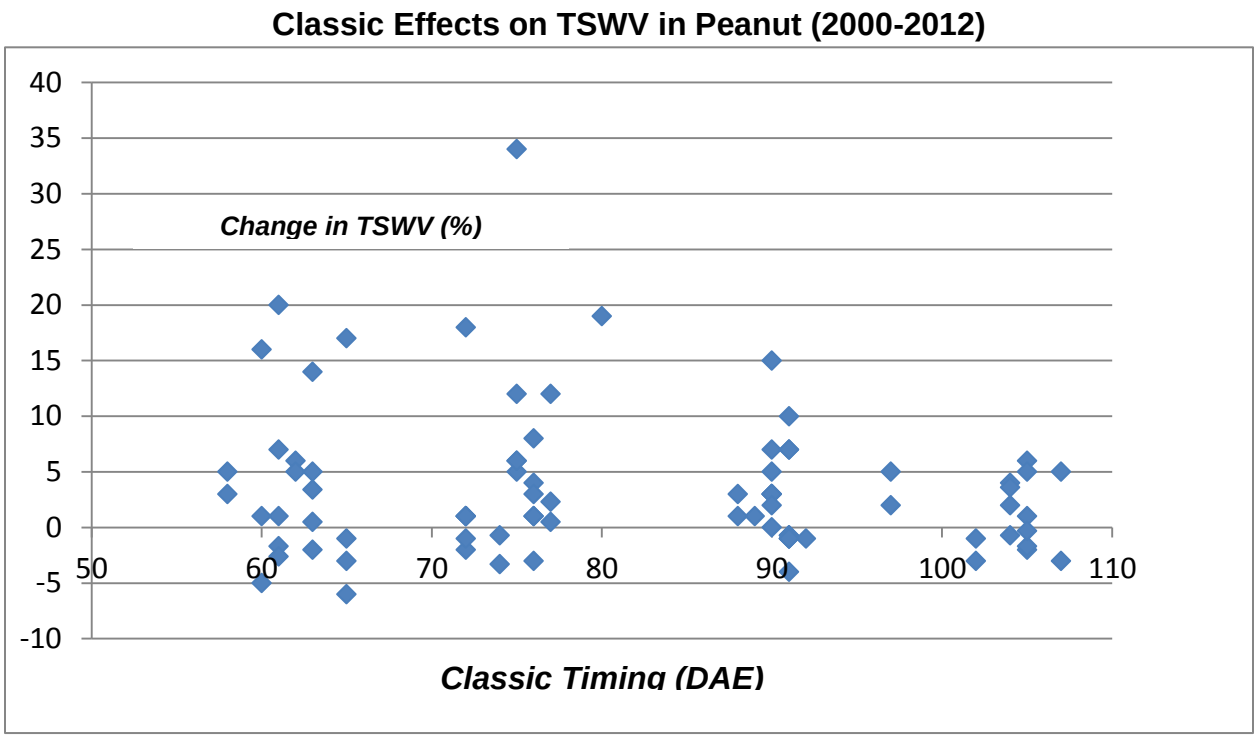
Tillage

The tillage method that a grower utilizes can make a big difference in peanut yields. There are many different methods to choose from, each with its own merits and disadvantages for a given situation. Strip tillage has been shown to have some strong advantages (including reduced soil erosion and reduced time and labor required for planting), but in some situations, yields have been disappointing. Unbiased tillage research is difficult to accomplish, but studies have consistently shown that peanuts grown in strip till systems have less thrips damage and slightly less spotted wilt. On-farm observations have confirmed these results, but more studies are needed in order to characterize the magnitude of the reduction. We do not suggest that growers should change their tillage method just to reduce spotted wilt, but we have included tillage in the risk index in an attempt to better identify total risks.

Conservation tillage, such as strip tillage, can reduce the amount of disease in a peanut field. For a number of years it has been recognized that spotted wilt is less severe in strip-tilled fields than in fields with conventional tillage. However, in results from recent field trials, it has been documented that leaf spot is also less severe in strip-tilled fields than in conventionally tilled fields, so long as peanut is not planted in consecutive season. Although the exact mechanism is currently unknown, the appearance of leaf spot is delayed in strip-tilled fields and the severity at the end of the season is significantly lower than in conventional tillage. Use of conservation tillage does not eliminate the need for fungicides to control leaf spot, but helps to insure added disease control from a fungicide program. Additional studies have found that white mold may be slightly more sever in strip tillage above conventional tillage; deep turning the soil may help to reduce the treat to white mold by burying initial inoculum (sclerotia). Rhizoctonia limb rot was not evaluated; however cotton is a host for *Rhizoctonia solani* and the cotton debris would likely serve as a bridge between crops. Disease management is only one of many factors that a grower must consider when choosing to practice either conventional or conservation tillage. However, if a grower decides to practice conservation tillage with peanut production, he can expect lower levels of leaf spot in many instances.

Classic® Herbicide

Research and field observations over the past several years have confirmed that the use of Classic (chlorimuron) can occasionally result in an increased expression of tomato spotted wilt of peanut. Results from 23 field trials conducted from 2000 to 2011 are presented in the following graph:



Classic caused an 8% or less increase in tomato spotted wilt about 87% of the time and an increase of more than 8% about 13% of the time. Consequently, these results indicate that the effects of Classic on TSWV are minimal in comparison to the other production practices that influence this disease. Consequently, late-season Florida beggarweed populations that have the potential to reduce harvest efficiency and fungicide spray deposition should be treated with Classic. To date, other peanut herbicides have not been shown to have an influence on spotted wilt.

NOTE: Although not related to tomato spotted wilt or any other disease, the University of Georgia now recommends that Classic herbicide **not** be applied to the Georgia 0-6G variety. Research conducted by Dr. Eric Prostko has determined that use of Classic herbicide is associated with a reduction in yield with this single variety.

Crop Rotation

Crop rotation is one of the most important tactics to reduce disease severity in peanut production, or any other cropping situation for that matter. Increasing the number of seasons between consecutive peanut crops in the same field has been shown to reduce disease levels and increase yield. The fungal pathogens that cause leaf spot, Rhizoctonia limb rot, and white mold survive between peanut crops on peanut crop debris, as survival structures in the soil, and on volunteer peanuts. The time that passes between consecutive peanut crops allows for the degradation of the peanut crop

debris, thus depriving the fungal pathogens of a source of nutrition. Also, fungal survival structures and spores that are present in the soil have a finite period of viability in which to germinate and infect another peanut plant before they are no longer viable. Fields with longer crop rotations will have less pressure from leaf spot diseases, Rhizoctonia limb rot, white mold, and perhaps CBR, than fields with shorter rotations, or no rotation at all. In Georgia, the Cooperative Extension recommends at least two years between peanut crops to help manage diseases.

Choice of rotation crops, along with the length of the rotation, will have an impact on the potential for disease in a field. Rotation of peanut with ANY other crop will reduce the potential for early leaf spot, late leaf spot, and peanut rust. The pathogens that cause these diseases do not affect other crops. Rotation of peanuts with cotton, or a grass crop such as corn, sorghum, or bahiagrass, will reduce the potential for white mold because the white mold pathogen does not infect these crops, or at least not very well. Rotation of peanut with a grass crop will reduce the risk of Rhizoctonia limb rot. However, because cotton is also infected by *Rhizoctonia solani*, rotation with this crop will not help to reduce Rhizoctonia limb rot. Other crops, such as tobacco and many vegetables are quite susceptible to diseases caused by *Rhizoctonia solani* and will not help to reduce the severity of limb rot in a peanut field.

Special note: Soybean may be a popular crop for some growers in 2012. Growers must remember that soybeans and peanuts are affected by many of the same diseases. Planting soybeans in rotation with peanuts will not reduce the risk for CBR or peanut root-knot nematodes and will have only limited impact of risk to white mold and Rhizoctonia limb rot.

Field History

The history of disease in a field can be an important hint at the possibility of disease in the future, for much the same reason as noted in the crop rotation section above. Fields where growers have had difficulty managing disease in the past, despite the implementation of a good fungicide program, are more likely to have disease problems in the future than are fields with less histories of disease.

There is some difference between white mold and Rhizoctonia limb rot with regards to field history. Where white mold has been a problem in the past, it can be expected to be again in the future. Without effective crop rotation, outbreaks of white mold can be expected to become increasingly severe each season. Rhizoctonia limb rot is a disease that is more sensitive to environmental conditions, especially rainfall and irrigation, than white mold. Therefore, the severity of Rhizoctonia limb rot is likely to be

more variable than white mold from year to year based upon the abundance of moisture during the season.

Irrigation

Irrigation is a critical component of a production system and can result in large peanut yields. However, the water applied to a crop with irrigation is also beneficial for the fungal pathogens that cause common diseases such as leaf spot, Rhizoctonia limb rot, and white mold. Rhizoctonia limb rot is likely to be more severe in irrigated fields with heavy vine growth; the increase in white mold may be less obvious. High soil temperatures as well as moisture from irrigation affect the severity of white mold.

Fungi causing leaf spot diseases need water for several important reasons, including growth, spore germination and infection of the peanut plant, and in some cases, spread of the fungal spores. Use of irrigation may extend the period of leaf wetness and the time of conditions favorable for leaf spot diseases beyond favorable conditions in a non-irrigated field. In two otherwise similar fields, the potential for disease is greater in the irrigated field.

Measuring TSWV Risk

Many factors combine to influence the risk of losses to TSWV in a peanut crop. Some factors are more important than others, but no single factor can be used as a reliable TSWV control measure. However, research data and on-farm observations indicate that when combinations of several factors are considered, an individual field's risk of losses due to TSWV can be estimated. There is no way to predict with total accuracy how much TSWV will occur in a given situation or how the disease will affect yield, but by identifying high risk situations, growers can avoid those production practices that are conducive to major yield losses. The University of Georgia Tomato Spotted Wilt Risk Index for Peanuts was developed as a tool for evaluation of risk associated with individual peanut production situations. When high-risk situations are identified, growers should consider making modifications to their production plan (i.e. variety, planting date, seeding rate, etc.) to reduce their level of risk. **Using preventative measures to reduce risk of TSWV losses is the only way to control the disease. After the crop is planted, there are no known control measures.**

The index combines what is known about individual risk factors into a comprehensive, but simple, estimate of TSWV risk for a given field. It assigns a relative importance to each factor so that an overall level of risk can be estimated. The first version of the index was developed in 1996 and was based on available research data. Small plot studies and on-farm observations have been used to evaluate index performance each year since release of the first version. In research plots where

multiple TSWV management practices were used, as little as 5% of the total row feet were severely affected by TSWV compared to over 60% in high-risk situations. Yield differences were over 2000 lbs. per acre in some cases. Results of these and other validation studies have been used to make modifications in all subsequent versions of the index. Future changes are expected as we learn more about TSWV.

Keep in mind that the risk levels assigned by this index are relative. In other words, if this index predicts a low level of risk, we would expect that field to be less likely to suffer major losses due to TSWV than a field that is rated with a higher level of risk. A low index value does not imply that a field is immune from TSWV losses. Losses due to TSWV vary from year to year. In a year where incidence is high statewide, even fields with a low risk level may experience significant losses.

Measuring Risk to Fungal Diseases of Peanut

The index presented here is based upon better understanding of factors that affect disease incidence and severity. It is designed to help growers approximate the magnitude of the risk that they face from foliar and soilborne diseases in the coming season. More importantly, it should serve as an educational tool that allows the grower to predict the benefits of different management practices he makes in hopes of producing a better crop.

The risks associated with leaf spot, white mold and Rhizoctonia limb rot diseases are to be determined independently in the index system to be presented here. The magnitude of points associated with each variable is not linked between soilborne and foliar disease categories. However, the points allotted to each variable in the PEANUT Rx are weighted within a disease category according to the importance of the variable (such as variety or field history) to another variable (such as planting date). For example, within the category for leaf spot diseases, a maximum of 30 points is allotted to the variable “variety” while 0 points is allotted to the variable “row pattern”. The magnitude of points assigned within each category and to each variable has been checked to ensure that the total number of points assigned to a field is consistent with research and experience. For example, while it would be possible for a non-irrigated field planted to Georgia Green to fall in the lowest risk category, a field of irrigated Georgia Green could be in a category of “medium risk” but not “low risk”.

NOTE: When weather conditions are favorable for fungal diseases, especially when rainfall is abundant, even fields at initial “low risk” to fungal diseases may become “high risk”.

PEANUT Rx

For each of the following factors that can influence the incidence of tomato spotted wilt or fungal diseases, the grower or consultant should identify which option best describes the situation for an individual peanut field. An option must be selected for each risk factor unless the information is reported as "unknown". A score of "0" for any variable does not imply "no risk", but that this practice does not increase the risk of disease as compared to the alternative. Add the index numbers associated with each choice to obtain an overall risk index value. Compare that number to the risk scale provided and identify the projected level of risk.

Peanut Variety

Variety[1]	**Spotted Wilt Points**	**Leaf Spot Points**	**Soilborne Disease Points**
			White mold
Flavorunner 458[2] or Florunner	**50**	**unknown**	**unknown**

NC-V 11	**35**	**30**	**30**
AT-215[2]	**30**	**30**	**30**
Georgia Green	**30**	**20**	**25**
Florida Fancy[2]	**25**	**20**	**20**
Georgia-09B[*,2]	**20**	**25**	**25**
FloRun[TM] '107'[*,2]	**20**	**25**	**20**
Georgia Greener[3]	**10**	**20**	**20**
Georgia-02C[2,3,4]	**15**	**20**	**10**
Georgia-06G	**10**	**20**	**20**
Florida-07[2]	**10**	**20**	**15**
Georgia-07W	**10**	**20**	**15**
Tifguard[6]	**10**	**15**	**15**
Bailey[*,3]	**10**	**15**	**10**
Georganic	**5**	**10**	**10**

**Data for these new varieties is limited and risk ratings will undergo changes as needed in the future.*

[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]*Varieties Georgia-02C,Georgia Greener, and Bailey have increased resistance to Cylindrocladium black rot (CBR) than do other varieties commonly planted in Georgia.*

[4] *The malady referred to as "funky" or "irregular" leaf spot tends to be more severe in Georgia-02C than in other varieties. Although this condition can look like early leaf spot (Cercospora arachidicola), the cause "funky" leaf spot is unknown. Disease losses are not typically associated with funky leaf spot.*

[5]*Tifguard has excellent resistance to the peanut root-knot nematode.*

Planting Date

Peanuts are planted:	Spotted Wilt Points[1]	Leaf Spot Points	Soilborne Disease Points

			White mold	Limb rot
Prior to May 1	30	0	10	0
May 1 to May 10	15	0	5	0
May 11-May 31	5	5	0	0
June 1-June 10	10	10	0	5
After June 10	15	10	0	5

Plant Population (final stand, not seeding rate)

Plant stand:	Spotted Wilt Points[1]	Leaf Spot Points	Soilborne Disease Points	
			White mold[2]	Limb rot
Less than 3 plants/ft	25	NA	0	NA
3 to 4 plants/ft[3]	15	NA	0	NA
3 to 4 plants/ft[4]	10	NA	0	NA
More than 4 plants/ ft	5	NA	5	NA

[1]*Only plant during conditions conducive to rapid, uniform emergence. Less than optimum conditions at planting can result in poor stands or delayed, staggered emergence, both of which can contribute to increased spotted wilt. Note: a twin row is considered to be one row for purposes of determining number of plants per foot of row.*

[2]*It is known that closer planted peanuts tend to have an increased risk to white mold.*
[3]*This category (15 risk points for spotted wilt) is only for varieties with a risk to spotted wilt of MORE THAN 25 points.*
[4]*This category (10 risk points for spotted wilt) is for varieties with 25 point or less for risk to spotted wilt.*

At-Plant Insecticide

Insecticide used:	Spotted Wilt Points*	Leaf Spot Points	Soilborne Disease Points	
			White mold	Limb rot
None	15	NA	NA	NA
Other than Thimet 20G or Phorate 20G	15	NA	NA	NA
Thimet 20G, Phorate 20G	5	NA	NA	NA

[*]*An insecticide's influence on the incidence of TSWV is only one factor among many to consider when making an insecticide selection. In a given field, nematode problems may overshadow spotted wilt concerns and decisions should be made accordingly.*

Row Pattern

Peanuts are planted in:	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White mold	Limb rot
Single rows	15	0	5	0
Twin rows	5	0	0	0

Tillage

Tillage	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White mold	Limb rot
conventional	15	10	0	0
reduced*	5	0	5	5

** For fungal diseases, this is does not apply for reduced tillage situations where peanut is following directly behind peanut in a rotation sequence. Limb rot can exist on some types of crop debris and use the organic matter as a bridge to the next peanut crop.*
***"Funky" or "irregular" leaf spot tends to be more severe in conservation tillage than in conventional tillage, though this malady is not typically associated with yield losses.*

Classic® Herbicide*

	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

**Use of Classic is not recommended for fields planted to Georgia-06G. Research has documented a slight yet consistent yield reduction when Classic herbicide is applied specifically to Georgia-06G.*

Crop Rotation with a Non-Legume Crop.

Years Between Peanut Crops*	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

**All crops other than peanut are acceptable in a rotation to reduce leaf spot. Cotton and grass crops will reduce the severity of white mold. Rhizoctonia limb rot can still be a significant problem, especially with cotton, under a longer rotation with favorable conditions, e.g. heavy vine growth & irrigation/ rainfall. Rotation with soybeans can increase risk to white mold, Rhizoctonia limb rot, and CBR. Rotation with grass crops will decrease the potential risk of limb rot; tobacco and vegetables will not.*

Note that rotation of peanuts with soybeans may lower the risk for leaf spot diseases, but it does not reduce the risk to CBR or peanut root-knot nematodes and only has minimal impact on risk to white mold or to Rhizoctonia limb rot.

Field History

Previous disease problems in the field?*	Spotted Wilt Points	Leaf Spot Points	Soilborne Disease Points	
			White mold	Limb rot
NO	NA	0	0	0
YES	NA	10	15	10

** "YES" would be appropriate in fields where leaf spot and/or soilborne diseases were a problem in the field despite use of a good fungicide program.*

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

** Irrigation has a greater affect on Rhizoctonia limb rot than on southern stem rot (white mold) or Cylindrocladium black rot.*

Calculate Your Risk

Add your index values from:

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

Interpreting Your Risk Total

Point total range for tomato spotted wilt = 35-155.

Point total range for leaf spot = 10-100.

Point total range for white mold = 10-95.

Point total range for Rhizoctonia limb rot = 15-75.

Risk

	Spotted Wilt Points	Leaf Spot Points	Soilborne Points	
			white mold	**limb rot**
High Risk	**≥115**	**65-100**	**55-80**	**To be detemined**
High Risk for fungal diseases: Growers should always use full fungicide input program in a high-risk situation.				
Medium Risk	**70-110**	**40-60**	**30-50**	**To be determined**
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**	**To be determined**
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 applications.				

Examples of Disease Risk Assessment

Situation 1.
A grower plants **Georgia Green** (30 spotted wilt points, 20 leaf spot points, 25 white mold points) on **May 5** (15 spotted wilt points, 0 leaf spot points, 5 white mold points, 0 limb rot points), with **two years between peanut crops** (0 spotted wilt points, 10 leaf spot points, 10 white mold points, 10 limb rot points) on **conventional tillage** (15 spotted wilt points, 10 leaf spot points, 0 white mold points, 0 limb rot points), **single row spacing** (15 spotted wilt points, 0 leaf spot points, 5 white mold points, 0 limb rot points), in an **irrigated field** (0 spotted wilt points, 10 leaf spot points, 5 white mold points, 10 limb rot points) with **a history of leaf spot disease**, but **not soilborne diseases** (0 spotted wilt points, 10 leaf spot points, 0 white mold points, 0 limb rot points) using **Classic® herbicide** (5 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points), **Temik 15G at-plant insecticide** (15 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points) with a **final plant population** of 2.8 plants per foot of row (25 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points).

Points:
Spotted wilt: **120** (high risk) leaf spot: **60** (medium risk), white mold: **50** (medium Risk), Rhizoctonia limb rot: **20** (to be determined).

Situation 2.
A grower plants **Georgia-02C** (15 spotted wilt points, 20 leaf spot points, 10 white mold points) on **May 15** (5 spotted wilt points, 5 leaf spot points, 0 white mold points, 0 limb rot points), with **three years between peanut crops** (0 spotted wilt points, 5 leaf spot points, 5 white mold points, 5 Rhizoctonia limb rot points) on **strip tillage** (5 spotted wilt points, 0 leaf spot points, 5 white mold points, 5 limb rot points), **twin row spacing** (5 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points), in an **irrigated field** (0 spotted wilt points, 10 leaf spot points, 5 white mold points, 10 limb rot points) with **no history of leaf spot disease or soilborne disease** (0 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points) with **NO Classic® herbicide** (0 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points), **phorate at-plant insecticide** (5 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points) with a **final plant population** of 4.2 plants per foot (5 spotted wilt points, 0 leaf spot points, 5 white mold points, 0 limb rot points).

Points:

Spotted wilt: **40** (low risk), leaf spot: **40** (medium risk), white mold: **30** (medium risk), Limb rot **20** (to be determined).

Situation 3.

A grower plants **Georgia Green** (30 spotted wilt points, 20 leaf spot points, 25 white mold points) on **May 15** (5 spotted wilt points, 5 leaf spot points, 0 white mold points, 0 limb rot points), with **one year between peanut crops** (0 spotted wilt points, 15 leaf spot points, 20 white mold points, 15 limb rot points) on **conventional tillage** (15 spotted wilt points, 5 leaf spot points, 0 white mold points, 0 limb rot points), **twin row spacing** (5 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points), in an **irrigated field** (0 spotted wilt points, 10 leaf spot points, 5 white mold points, 10 limb rot points) with **a history of leaf spot disease, white mold, but not Rhizoctonia limb rot** (0 spotted wilt points, 10 leaf spot points, 15 white mold points, 0 limb rot points) with **NO Classic® herbicide** (0 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points), **Orthene insecticide** (15 spotted wilt points, 0 leaf spot points, 0 white mold, 0 limb rot points) with a **final plant population** of 3.5 plants per foot of row (15 spotted wilt points, 0 leaf spot points, 0 white mold, 0 limb rot).

Points:
Spotted wilt points: **85** (medium risk), leaf spot risk: **65** (high risk), white mold: **65** (high risk), limb rot: **25** (to be determined))

Situation 4.
A grower plants **Georgia-07W** (10 spotted wilt points, 20 leaf spot points, 15 white mold points) on **April 28** (30 spotted wilt points, 0 leaf spot points, 10 white mold points, 0 limb rot points) with **one year between peanut crops** (0 spotted wilt points, 15 leaf spot points, 20 white mold points, 15 limb rot points) on **strip tillage** (5 spotted wilt points, 0 leaf spot points, 5 white mold points, 5 limb rot points), **twin row spacing** (5 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points) in a **non-irrigated** field (0 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points) with **a history of leaf spot, white mold, and Rhizoctonia limb rot** (0 spotted wilt points, 10 leaf spot points, 15 white mold points, 10 limb rot points), with **NO Classic® herbicide** (0 spotted wilt points, 0 leaf spot points, 0 white mold points, 0 limb rot points), using **Thimet at-plant insecticide** (5 spotted wilt points, 0 leaf spot points, 0 white mold, 0 limb rot points) with a **final plant population** of 4.4 plants per foot of row (5 spotted wilt points, 0 leaf spot points, 5 white mold, 0 limb rot).
Points:
Spotted wilt risk: **60** (low risk) leaf spot risk: **45** (medium risk), white mold: **65** (high risk), limb rot: **35** (to be determined)

“Planting Windows” to Attain Low Risk for Spotted Wilt

If planting date were the only factor affecting spotted wilt severity, growers would have no flexibility in when they planted. Fortunately, other factors are involved and by choosing other low risk options, growers can expand their planting date window. Remember, the goal is to have a total risk index value of 65 or less, regardless of which combination of production practices works best for you. The following table demonstrates how the planting date window expands as other risk factors go down. For example, where a grower achieves a good stand, uses strip tillage and twin rows, and Thimet, but does not use Classic, he may plant a “10” or “15” point variety at ANY time in the season and still be at “Low” risk for spotted wilt.

	Points assigned to the peanut variety of interest		
	20	15	10
Production practices and final stand	**Planting date options to achieve a “LOW RISK” for Spotted Wilt using above varieties**		
Poor stand, conventional tillage, single rows, Temik, Classic is used	NONE	NONE	NONE
Average stand, twin rows, conventional tillage, Thimet, no use of Classic	May 11-25	May 11- June 5	May 1-June
Good stand, strip tillage, twin rows, Thimet, no use of Classic	After May 1	ANY	ANY

ATTENTION !

Pesticide Precautions

1. Observe all directions, restrictions, and precautions on pesticide labels. It is dangerous, wasteful, and illegal to do otherwise

2. Store all pesticides in original containers with labels intact and behind locked doors. **"KEEP PESTICIDES OUT OF REACH OF CHILDREN."**

3. Use pesticides at correct label dosages and intervals to avoid illegal residues or injury to
plants and animals.

4. Apply pesticides carefully to avoid drift or contamination of non-target areas.

5. Surplus pesticides and containers should be disposed of in accordance with label instructions so that contamination of water and other hazards will not result.

6. Follow directions of the pesticide label regarding restrictions as required by State an Federal Laws and Regulations

7. Avoid any actions that may threaten an Endangered Species of its habitat. Your county Extension agent can inform you of Endangered Species in your area, help you identify them and through the Fish and Wildlife Office, identify actions that may threaten Endangered Species of their habitat.

Crop and Soil Science Department

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J. Scott Angle, Dean & Director
College of Agricultural and Environmental Sciences