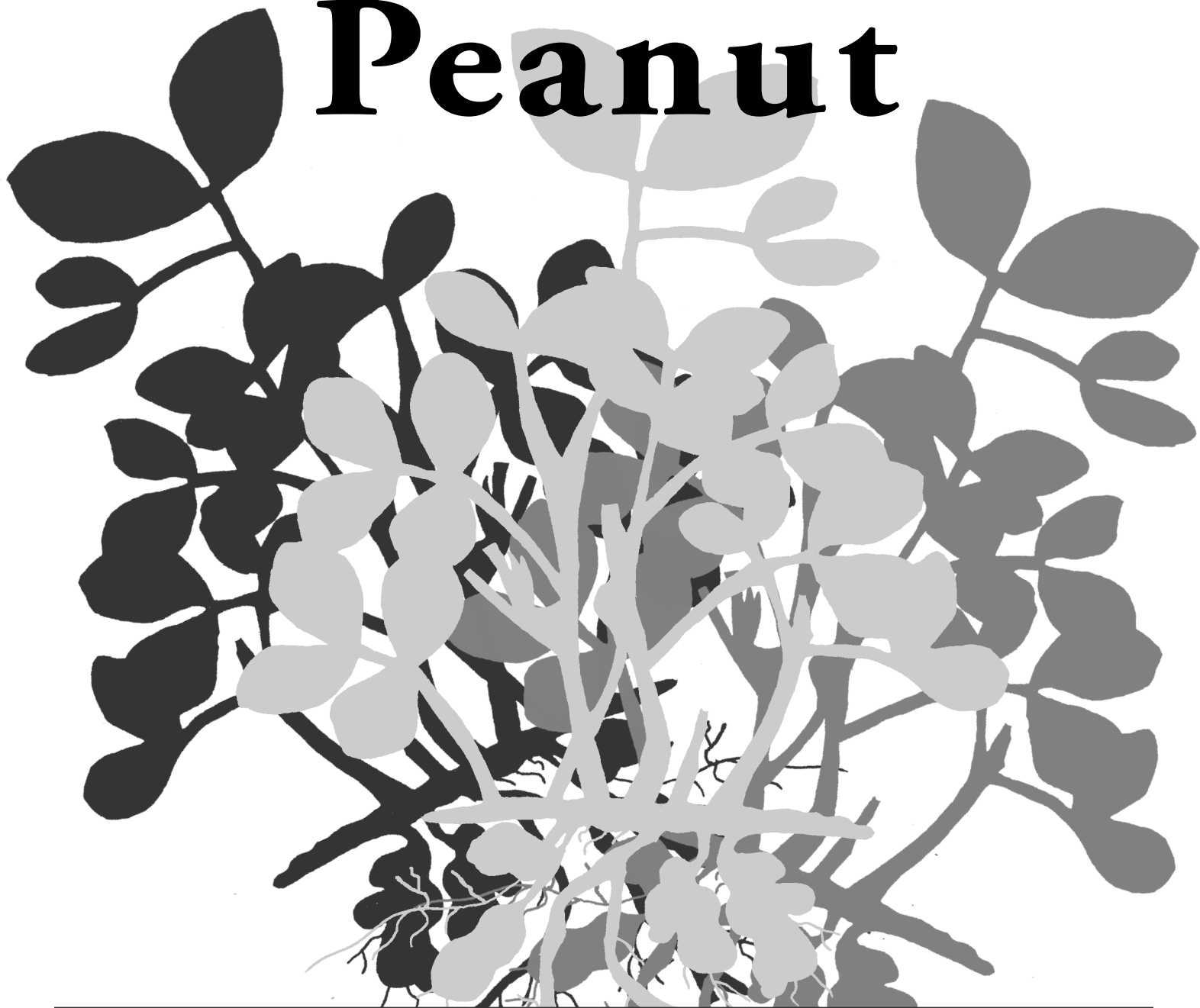


# MISSISSIPPI Peanut



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## VARIETY TRIALS, 2012

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MISSISSIPPI AGRICULTURAL & FORESTRY EXPERIMENT STATION + GEORGE M. HOPPER, DIRECTOR  
MISSISSIPPI STATE UNIVERSITY + MARK E. KEENUM, PRESIDENT + GREGORY A. BOHACH, VICE PRESIDENT

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# Mississippi Peanut Variety Trials, 2012

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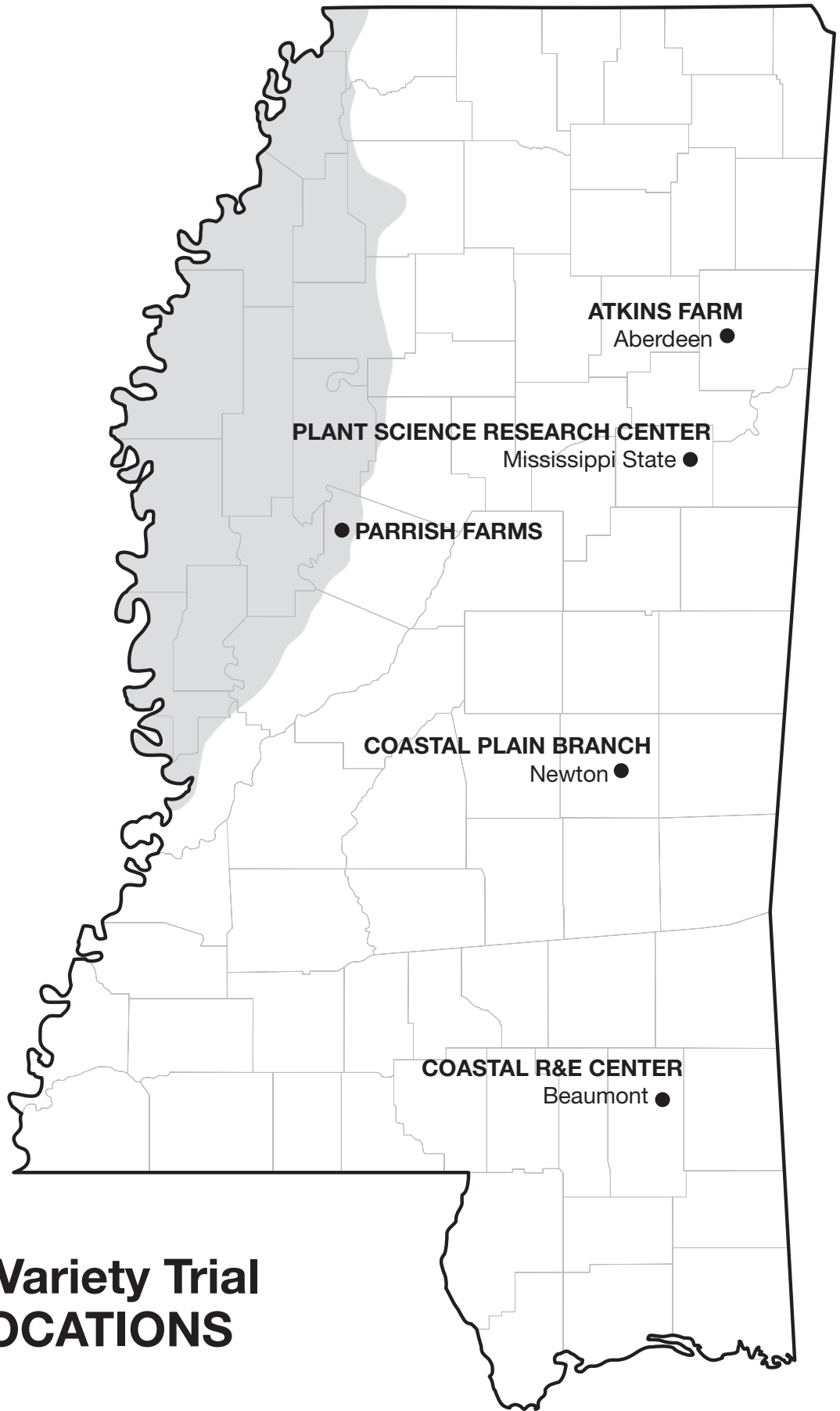
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**Peanut Variety Trial  
TEST LOCATIONS**

# Mississippi Peanut Variety Trials, 2012

## PROCEDURE

Peanut variety trials were conducted at five locations in Mississippi in 2012. Trials were conducted on Experiment Station land and on grower-cooperator fields to help represent the different geographic regions of the state in which peanuts are grown. The same commercially available varieties of peanuts were tested at all five locations.

Plots consisted of two 38-inch-wide, 40-foot-long twin rows. Weeds were controlled by cultivation and/or herbicides. Only herbicides currently registered for use on peanuts were used in these studies, with strict adherence to all label instructions.

All varieties were treated with a fungicide seed treatment and an in-furrow insecticide. Experimental design was a randomized complete block with three replications at each location.

All varieties were planted at a uniform seeding rate of six seeds per foot and planted with a two-row, twin-drill, Monosem vacuum planter. Fertilizer was applied according to soil test recommendations.

The plots were dug with a two-row peanut digger. After proper drying, the total plot area was harvested with a two-row, pull-type, peanut combine fitted with a bagging attachment. The harvested plots were weighed, moisture was determined, and yields were converted to pounds per acre, following statistical analysis.

## USE OF DATA TABLES AND SUMMARY STATISTICS

The yield potential of a given variety cannot be predicted with complete accuracy. Consequently, replicate plots of all varieties are evaluated for yield, and the yield of a given variety is estimated as the mean of all replicate plots of that variety. Yields vary somewhat from one replicate plot to another, which introduces a certain degree of error to the estimation of yield potential. This natural variation is often responsible for yield differences among different varieties. Thus, even if the mean yields of two varieties are numerically different, they are not necessarily significantly different in terms of yield potential. In other words, the ability to measure yield is not precise enough to determine whether such small differences are observed purely by chance or because of superior performance. The least significant difference (LSD) is an estimate of the smallest difference between two varieties that can be declared to be the result of something other than random variation in a particular trial. Consider the following example for a given trial:

Variety	Yield
Abe .....	6,000 lb/A
Bill .....	5,600 lb/A
Charlie .....	4,900 lb/A
LSD .....	500 lb/A

The difference between variety Abe and variety Bill is 400 pounds per acre ( $6,000 - 5,600 = 400$ ). This difference is **smaller** than the LSD (500 bushels per acre). Consequently, it is concluded that variety Abe and variety Bill have the same yield potential since the observed difference occurred purely due to chance. The difference between variety Abe and variety Charlie is 1,100 pounds per acre ( $6,000 - 4,900 = 1,100$ ), which is **larger** than the LSD (500 pounds per acre). Therefore, it is concluded that the yield potential of variety Abe is superior to that of variety Charlie since the difference is larger than would be expected purely by chance. The coefficient of variation (CV) is a measure of the relative precision of a given trial and is used to compare the relative precision of different trials. The CV is gener-

ally considered to be an estimate of the amount of unexplained variation in a given trial. This unexplained variation could be the result of variation between plots with respect to soil type, fertility, insects, diseases, weather stress, etc. In general, the higher the CV is, the lower the precision in a given trial. The coefficient of determination ( $R^2$ ) is another measure of the level of precision in a trial and is also used to compare the relative precision of different trials. The  $R^2$  is a measure of

the amount of variation that is explained, or accounted for, in a given trial. For example, an  $R^2$  value of 90% indicates that 90% of the observed variation in the trial has been accounted for in the trial with the remaining 10% being unaccounted. The higher the  $R^2$  value is, the more precise the trial. The  $R^2$  is generally considered to be a better measure of precision than the CV for comparison of different trials.

## TERMS USED

**SMKRS** count per pound (number per pound of sound mature kernels riding screen) — Number of sound whole mature kernels from 1 pound of the shelled sample riding a 15/64 x 1-inch slotted screen or a 16/64 x 3/4-inch slotted screen for Virginia or Runner varieties, respectively.

**Pct. SMKRS** (sound mature kernels riding screen) — Portion of shelled sample as described above.

**Pct. SS** (sound splits) — Portion of shelled sample split or broken but not damaged.

**Pct. TSMK** (total sound mature kernels) — Portion of the shelled sample comprised of sound mature kernels plus sound splits.

**Pct. OK** (other kernels) — Kernels that pass through a 15/64 x 1-inch slotted screen or 16/64 x 3/4-inch slotted screen for Virginia or Runner varieties, respectively.

**Pct. DK** (damaged kernels) — Kernels that are moldy, decayed, or affected by insects or weather conditions, resulting in seed coat or cotyledon discoloration or deterioration.

**Pct. TK** (total kernels) — All shelled sample kernels including TSMK, OK, and DK.

**Pct. Hulls** — All hulls from the shelled sample.

**Table 1. 2012 Peanut yield summary.**

Variety	Aberdeen	Beaumont	Holmes Co.	Newton	Starkville	Overall average
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>
Florida 07	4,650.4	4,437.3	6,387.3	6,239.2	5,703.6	5,483.6
Georgia 09B	4,015.3	4,931.1	5,807.2	6,021.4	5,119.4	5,178.9
Georgia 06G	4,773.3	5,500.7	7,251.8	6,637.2	4,817.4	5,796.1
Georgia 07	4,338.1	4,056.0	6,268.1	5,944.8	4,702.4	5,061.9
Tamnut OL06	2,684.7	3,403.5	4,958.3	4,220.7	3,680.0	3,789.4
Mean	4,092.3	4,465.1	6,210.7	5,813.0	4,804.9	5,062.0
LSD (.10)	875.4	443	529	67	468.6	
Error df	20	20	20	20	20	
CV (%)	21.5	10	8.6	11.6	9.8	
$R^2$ (%)	61.8	82.7	73.3	71.9	75.1	

# MAFES COASTAL PLAIN BRANCH, NEWTON

## Crop Summary

The study was planted into soil with good moisture, germinated quickly, and had good early growth. Abundant moisture was observed immediately after planting. However, the critical growing period saw extremely dry conditions and temperatures in the high 90s and some 100s. Late July and August saw significant rainfall, but yield potential may have been reduced some by the hot and dry period earlier in the growing season. Harvest was not affected by weather.

Soil type ..... Prentiss fine sandy loam  
 Soil pH ..... 6.8  
 Soil fertility ..... P=H+, K=H+  
 Fertilizer added ..... Postemergence — Borsol @ 12.8 oz/A on July 26  
 Herbicide application .... Preemergence — Dual II Magnum @ 24 oz/A and Valor @ 3 oz/A on May 2  
 Postemergence — Select @ 12 oz/A and Cadre @ on July 26  
 Fungicide application .... Provost @ 7.2 oz/A on July 26  
 Planting date ..... May 2  
 Digging date ..... October 18  
 Harvest date ..... November 1

## Rainfall Summary

	Inches
April .....	2.15
May .....	6.38
June .....	5.28
July .....	12.19
August .....	10.33
September .....	3.32
October .....	5.36
<b>Total .....</b>	<b>45.01</b>

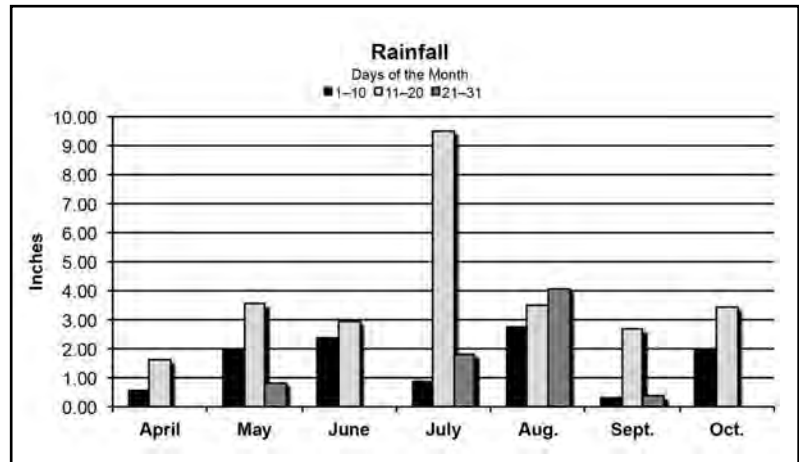


Table 2. Yield, average size, and grade of peanut varieties at the MAFES Costal Plain Branch, Newton, 2012.

Variety	Yield	SMKRS	SMKRS	SS	TSMK	OK	DK	TK	Hulls
	<i>lb/A</i>	<i>seed/lb</i>	%	%	%	%	%	%	%
Florida 07	6,239.2	731	72	4	76	3	1	80	21
Georgia 09B	6,021.4	954	68	2	70	6	1	77	22
Georgia 06G	6,637.2	880	63	5	68	5	1	74	26
Georgia 07	5,944.8	831	74	3	77	3	1	81	19
Tamnnt OL06	4,220.7	1,180	64	1	65	6	1	72	27
Mean	5,813.0								
LSD (.10)	67								
Error df	20								
CV (%)	11.6								
R <sup>2</sup> (%)	71.9								

# MAFES PLANT SCIENCE RESEARCH CENTER, STARKVILLE

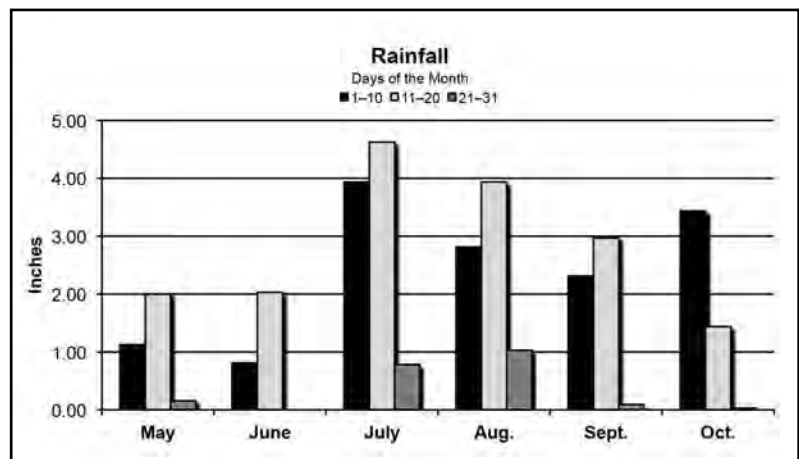
## Crop Summary

Plots were planted into a freshly prepared soil with good moisture. All plots quickly germinated to a good stand. Weather conditions were favorable for the majority of the growing season. Harvest was delayed somewhat due to mechanical problems.

Soil type .....	Stough fine sandy loam
Soil pH .....	6.1
Soil fertility .....	P=M, K=M
Fertilizer added .....	Preemergence — 0-0-60 @ 200 lb/A Postemergence — Borsol @ 12.8 oz/A on August 1
Herbicide application ....	Preemergence — Dual II Magnum @ 24 oz/A and Valor @ 3 oz/A on May 2 Postemergence — Select @ 12 oz/A on August 1
Fungicide application ....	Provost @ 7.2 oz/A on August 1
Planting date .....	May 1
Digging date .....	October 15
Harvest date .....	October 29

## Rainfall Summary

	Inches
May .....	3.30
June .....	2.84
July .....	9.34
August .....	7.76
September .....	5.36
October .....	4.91
<b>Total .....</b>	<b>33.51</b>



**Table 3. Yield, average size, and grade of peanut varieties at the MAFES Research Center, Starkville, 2012.**

Variety	Yield	SMKRS	SMKRS	SS	TSMK	OK	DK	TK	Hulls
	lb/A	seed/lb	%	%	%	%	%	%	%
Florida 07	5,703.6	757	63	5	68	6	1	75	25
Georgia 09B	5,119.4	975	69	3	72	4	1	77	22
Georgia 06G	4,817.4	739	63	4	67	4	1	72	28
Georgia 07	4,702.4	879	66	3	69	6	1	76	24
Tamnut OL06	3,680.0	1,025	62	3	65	6	0	71	28
Mean	4,804.9								
LSD (.10)	468.6								
Error df	20								
CV (%)	9.8								
R <sup>2</sup> (%)	75.1								



# COASTAL RESEARCH AND EXTENSION CENTER, BEAUMONT

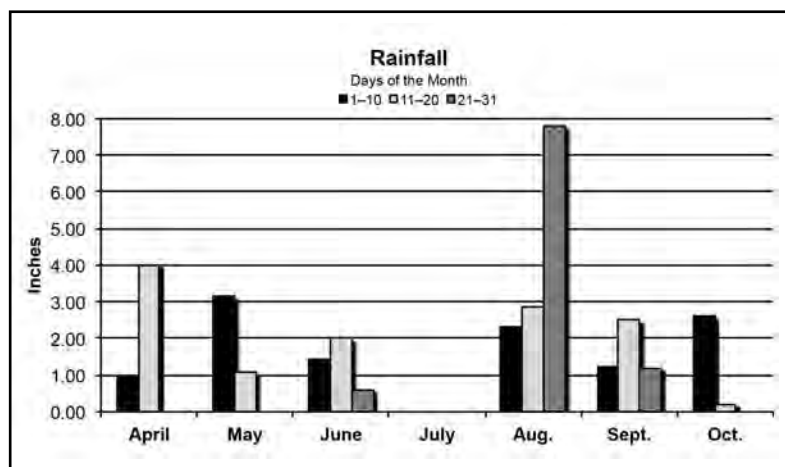
## Crop Summary

Plots were planted into a freshly prepared soil with good moisture. All plots quickly germinated to a good stand. Weather conditions were hot and dry during the first half of the growing season. Sufficient rainfall fell during the remainder of the season to allow for adequate soil moisture. Good yields were observed. Harvest was completed with no weather delays.

Soil type ..... McLaurin sandy loam  
 Soil pH ..... 6.5  
 Soil fertility ..... P=H+, K=H+  
 Fertilizer added ..... Preplant — 13-13-13 @ 400 lb/A  
 Herbicide application .... Preemergence — Dual II Magnum @ 24 oz/A and Valor @ 3 oz/A on May 9  
 Fungicide application .... Echo @ 24 oz/A on September 20 and October 4  
 Planting date ..... May 9  
 Digging date ..... October 18  
 Harvest date ..... November 1

## Rainfall Summary

	Inches
April .....	4.98
May .....	4.24
June .....	4.02
July .....	0.00
August .....	12.97
September .....	4.91
October .....	2.83
<b>Total .....</b>	<b>33.95</b>



**Table 4. Yield, average size, and grade of peanut varieties at the MAFES Coastal Research and Extension Center, Beaumont, 2012.**

Variety	Yield	SMKRS	SMKRS	SS	TSMK	OK	DK	TK	Hulls
	lb/A	seed/lb	%	%	%	%	%	%	%
Florida 07	4,437.3	687	69	7	76	3	0	79	20
Georgia 09B	4,931.1	750	72	6	78	2	0	80	20
Georgia 06G	5,500.7	656	60	11	71	5	0	76	23
Georgia 07	4,056.0	717	71	6	77	3	0	80	20
Tamnut OL06	3,403.5	908	64	5	69	7	1	77	24
Mean	4,465.1								
LSD (.10)	443								
Error df	20								
CV (%)	10								
R <sup>2</sup> (%)	82.7								

# ATKINS FARM, ABERDEEN

## Crop Summary

Plots were planted into a freshly prepared soil with good moisture. All plots quickly germinated and grew off to a good stand. Peanuts encountered some drought stress during June. After July 4, the plots received timely rainfall for the remainder of the season. Weather conditions at the time of harvest were optimum.

Soil type ..... Tilden fine sandy loam  
 Soil pH ..... 6.5  
 Soil fertility ..... P=M-H, K=M-H  
 Fertilizer added ..... Preplant — 5-20-20 @ 250 lb/A  
 Herbicide application .... Preemergence — Dual II Magnum @ 1.3 pt/A and Valor @ 2 oz/A on May 1  
 Postemergence — Cadre @ 4 oz/A and 2,4-DB @ 1pt/A on June 25  
 Fungicide application .... Convoy @ 8 oz/A on August 1 and September 1  
 Planting date ..... May 1  
 Digging date ..... October 17  
 Harvest date ..... October 29

## Rainfall Summary

	Inches
April .....	3.08
May .....	3.90
June .....	1.38
July .....	5.13
August .....	7.20
September .....	5.20
October .....	1.50
<b>Total .....</b>	<b>27.39</b>

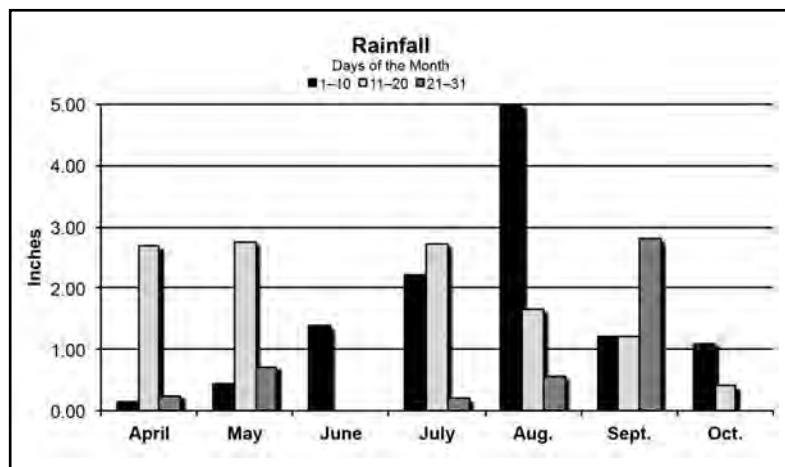


Table 5. Yield, average size, and grade of peanut varieties at Atkins Farm, near Aberdeen, 2012.

Variety	Yield	SMKRS	SMKRS	SS	TSMK	OK	DK	TK	Hulls
	<i>lb/A</i>	<i>seed/lb</i>	%	%	%	%	%	%	%
Florida 07	4,650.4	799	—	—	—	—	—	—	—
Georgia 09B	4,015.3	951	—	—	—	—	—	—	—
Georgia 06G	4,773.3	937	—	—	—	—	—	—	—
Georgia 07	4,338.1	798	—	—	—	—	—	—	—
Tamnut OL06	2,684.7	1,213	—	—	—	—	—	—	—
Mean	4,092.3								
LSD (.10)	875.4								
Error df	20								
CV (%)	21.5								
R <sup>2</sup> (%)	61.8								

# PARRISH FARMS, TCHULA

## Crop Summary

Plots were planted into a freshly prepared soil with good moisture. All plots quickly germinated to a good stand. Weather conditions were favorable for most of the growing season. Rain delayed the time between when the plots were dug and combined, but this did not affect the harvestability of the crop. Excellent yields were observed.

Soil type ..... Morganville silt loam  
 Soil pH ..... 6.8  
 Soil fertility ..... P=H, K=H  
 Fertilizer added ..... 0-46-0 @ 130 lb/A  
 Herbicide application .... Preplant incorporated — Sonolan @ 1.5 pt/A  
 Preemergence — Dual II Magnum @ 24 oz/A and Valor @ 3 oz/A on April 1  
 Postemergence — Cadre @ 4 oz/A and Dual @ 1 pt/A  
 Fungicide application .... Provost @ 8 oz/A on July 18 and Convoy @ 16 oz/A on August 1 and 15  
 Planting date ..... April 30  
 Digging date ..... October 16  
 Harvest date ..... October 30

## Rainfall Summary

	Inches
May .....	2.07
June .....	1.64
July .....	4.61
August .....	4.14
September .....	6.84
October .....	1.15
Total .....	20.45

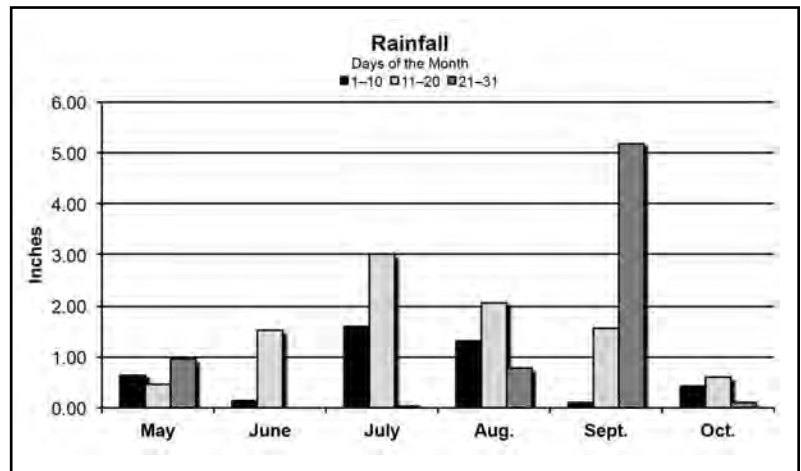


Table 6. Yield, average size, and grade of peanut varieties at Parrish Farms, near Tchula, 2012.

Variety	Yield	SMKRS	SMKRS	SS	TSMK	OK	DK	TK	Hulls
	<i>lb/A</i>	<i>seed/lb</i>	%	%	%	%	%	%	%
Florida 07	6,387.3	795	72	5	77	2	1	80	20
Georgia 09B	5,807.2	856	71	5	76	4	0	80	20
Georgia 06G	7,251.8	930	69	4	73	3	0	76	23
Georgia 07	6,268.1	750	76	1	77	2	1	80	20
Tamnut OL06	4,958.3	1,070	67	1	68	6	1	75	25
Mean	6,210.7								
LSD (.10)	529								
Error df	20								
CV (%)	8.6								
R <sup>2</sup> (%)	73.3								



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