MISSISSIPPI PEANUT
VARIETY TRIALS, 2017

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MISSISSIPPI'S OFFICIAL VARIETY TRIALS

MISSISSIPPI STATE UNIVERSITY™
MS AGRICULTURAL AND
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This report contains data generated as part of the Mississippi Agricultural and Forestry Experiment Station research program. Trade names of commercial products used in this report are included only for clarity and understanding.

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Mississippi Peanut Variety Trials, 2017

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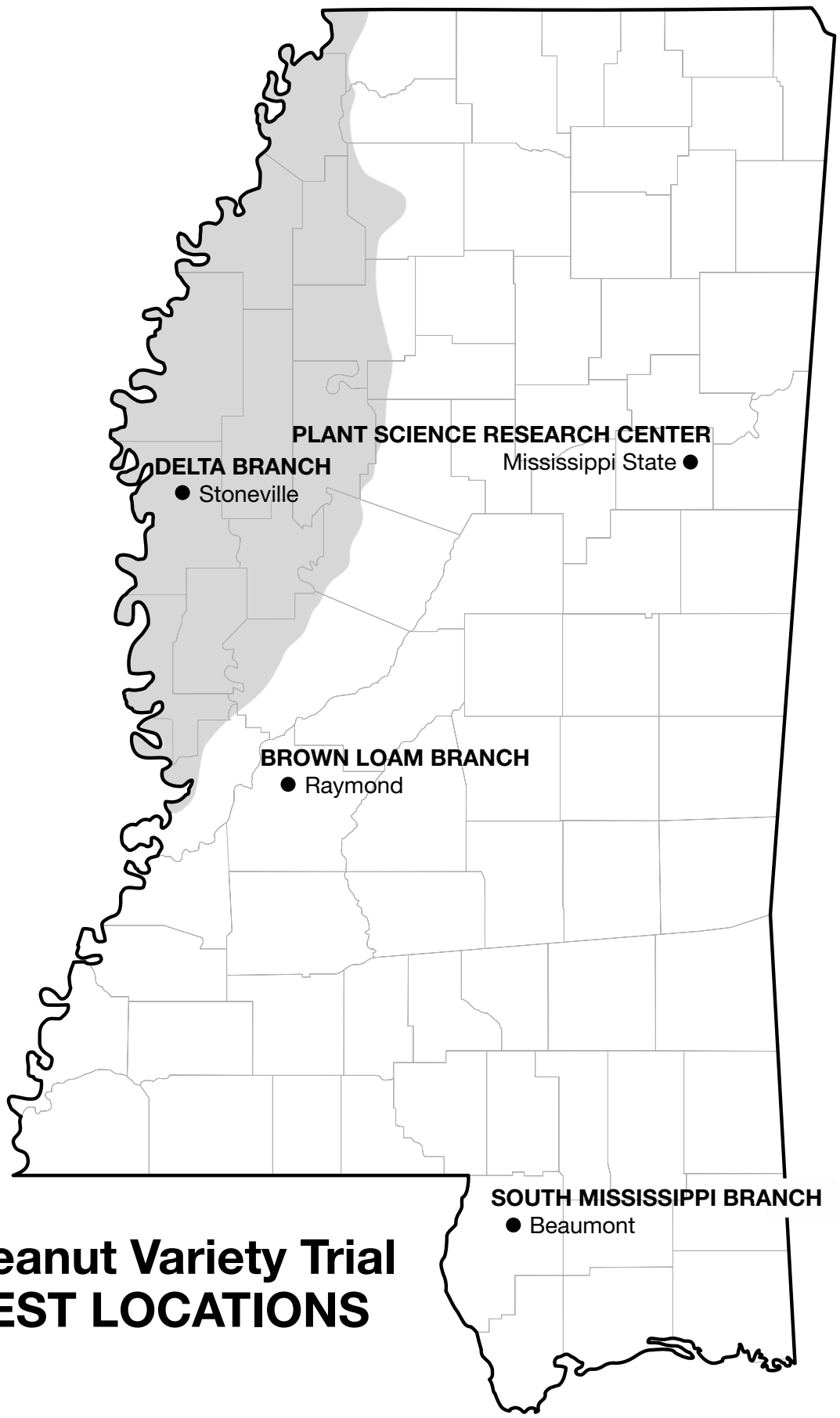
Find variety trial information online at ***mafes.msstate.edu/variety-trials***.



Peanut Variety Trial
TEST LOCATIONS

Mississippi Peanut Variety Trials, 2017

PROCEDURES

Peanut variety trials were conducted at four locations in Mississippi in 2017. Trials were conducted on Experiment Station land to attempt to represent the different geographic regions of the state in which peanuts are grown. The same commercially available varieties of peanuts were tested at all four locations.

Plots consisted of two 38-inch-wide, 30-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 four replications at each location.

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

The plots were dug with a KMC two-row peanut digger. After proper drying, the total plot area was harvested with a KMC 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. All plots weights were adjusted to a standard moisture of 13%.

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 pounds 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 generally 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, 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, whole, 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 ¾-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 thorough a 15/64 x 1-inch slotted screen or 16/64 x ¾-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. 2017 Peanut Official Variety Trial yield and grade summary table.

Variety	Starkville		Stoneville		Raymond		Overall average	
	Yield	Grade	Yield	Grade	Yield	Grade	Yield	Grade
	lb/A	*%*	*lb/A*	*%*	*lb/A*	*%*	*lb/A*	*%*
Algrano 0752	4842	68	6158	72	5942	73	5647	71
Algrano 0914	4642	66	6249	74	6739	74	5877	71
Algrano QR14	4648	69	6551	74	7422	76	6207	73
AU-NPL 17	6337	69	5935	74	7262	75	6511	73
'Florida 07'	6530	69	6641	73	6831	69	6667	70
FloRun™ '107'	6440	68	6574	75	7414	72	6809	72
FloRun™ '157'	6085	70	6908	75	6759	77	6584	74
FloRun™ '331'	7066	71	7072	75	7666	75	7268	73
GA-16HO	7207	76	7490	75	7676	75	7458	75
Georgia-06G	7200	71	6517	76	7214	75	6977	74
Georgia-09B	6081	73	6691	75	7892	75	6888	74
Georgia-12Y	6202	69	6633	72	7049	75	6628	72
Georgia-13M	5135	69	6864	76	6796	77	6265	74
Georgia-14N	5543	73	4755	76	6155	78	5484	76
Tifguard	5644	71	5849	76	6929	76	6141	74
TifNV-HI O/L	5682	71	5974	74	6969	75	6208	73
TufRunner™ '297'	6509	71	6790	75	7910	76	7070	74
TufRunner™ '511'	6960	69	6502	74	7165	76	6876	73
Mean	6042	70	6453	75	7099	75	6583	73
LSD	904		731		914			
CV	10.45		7.99		9.08			
R^2	0.69		0.63		0.47			

Table 2. Two-year (2016 and 2017) yield summary of peanut variety trials in Mississippi.

Variety	Starkville	Stoneville	Raymond	Overall avg.
	lb/A	*lb/A*	*lb/A*	*lb/A*
Algrano QR14	4788	5593	6050	5477
'Florida 07'	5317	5708	5744	5590
FloRun™ '107'	5496	5545	6009	5684
Georgia-06G	5997	5838	6052	5962
Georgia-09B	5432	5450	6358	5747
Georgia-12Y	5091	5481	6049	5540
Georgia-13M	4921	5523	5708	5384
Georgia-14N	4411	4492	5320	4741
TufRunner™ '297'	5758	5901	6647	6102
TufRunner™ '511'	5795	5648	6168	5870
Mean	5301	5518	6011	5610

Table 3. Three-year (2015, 2016, and 2017) yield summary of peanut variety trials in Mississippi.

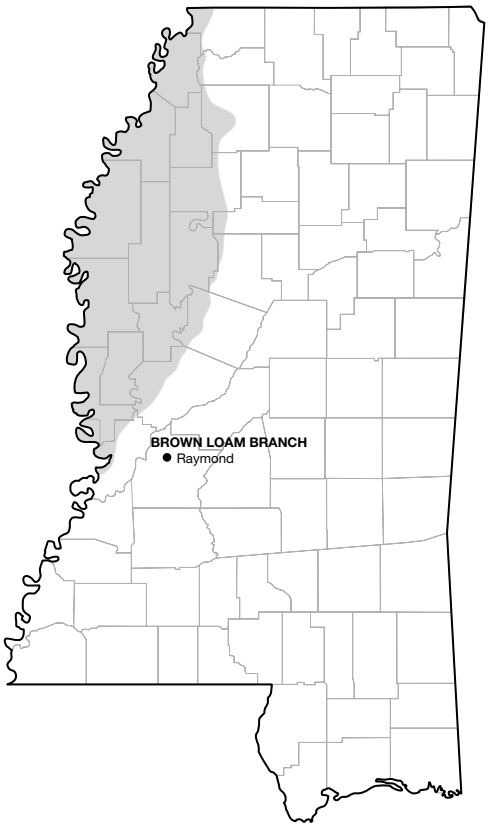
Variety	Starkville	Stoneville	Raymond	Overall avg.
	lb/A	*lb/A*	*lb/A*	*lb/A*
Algrano QR14	4446	4978	4707	4710
'Florida 07'	4672	5207	4721	4866
FloRun™ '107'	4763	5234	4807	4935
Georgia-06G	5085	5467	4627	5060
Georgia-09B	4771	5017	4993	4927
Georgia-12Y	4575	5376	4906	4952
Georgia-13M	4385	5274	4616	4758
Georgia-14N	3946	4273	4357	4192
TufRunner™ '297'	5049	5484	5363	5298
TufRunner™ '511'	5000	5400	5190	5197
Mean	4669	5171	4829	4890

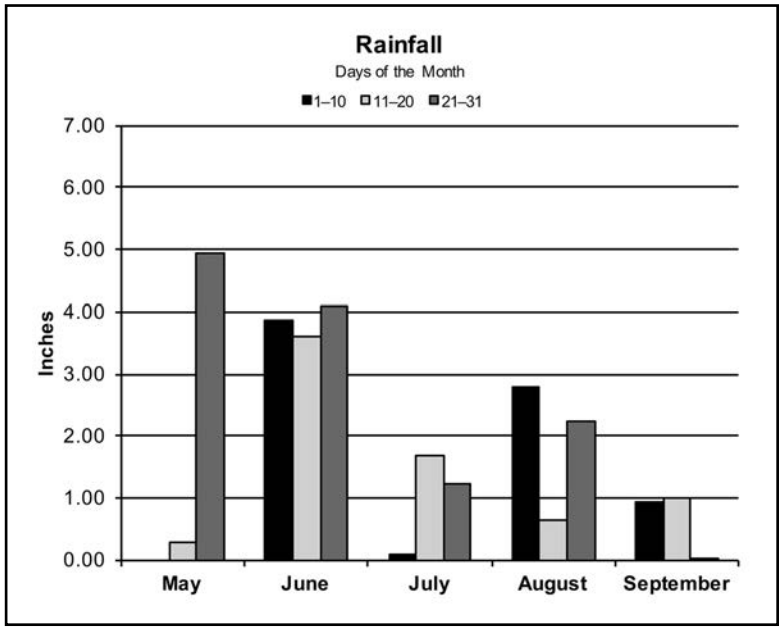
MAFES BROWN LOAM BRANCH, RAYMOND

Crop Summary

Peanut plots were planted into a stale seedbed that had been prepared the previous fall. Soil moisture at planting was optimum for germination and seeding emergence. All plots quickly emerged to a good stand. Abundant rainfall and cooler weather throughout the season allowed for excellent growing conditions. Fall weather was favorable for both digging and harvest. This location was combined a little earlier than normal to help prevent any yield reductions due to deer feeding. Harvest was completed without difficulties, and good yields were observed at this location.

Soil type . . . . . .Loring silt loam
Soil pH 5.7
Soil fertility . . . . .P=H, K=H
Planting date . . .May 9
Digging date . . . .September 26
Harvest date . . . .September 29
Herbicides . . . . . .Preemergence — Gramoxone @ 32 oz/A, Dual II Magnum @ 24 oz/A, and Valor @ 3 oz/A on May 9
Postemergence — Pursuit @ 4 oz/A and Section (clethodim) @ 12 oz/A on July 6; Section (clethodim) @ 10 oz/A and Cadre @ 4 oz/A on July 20; and Section (clethodim) @ 10 oz/A on August 4
Fungicides . . . . .Abound @ 12 oz/A on July 6, Bravo weatherstik @ 12 oz/A on July 20, Headline @ 14 oz/A + Bifenthrin @ 5 oz/A on August 4, and Bravo weatherstik @ 12 oz/A on August 21
Fertilizer . . . . . .Preplant — 0-20-20 @ 100 lb/A
Previous crop . . .Fallow





Rainfall Summary

	Inches
May	5.21
June	11.58
July	3.02
August	5.68
September	1.98
Total	27.47

Table 4. Yield, average size, and grade of peanut varieties at the MAFES Brown Loam Branch, Raymond.

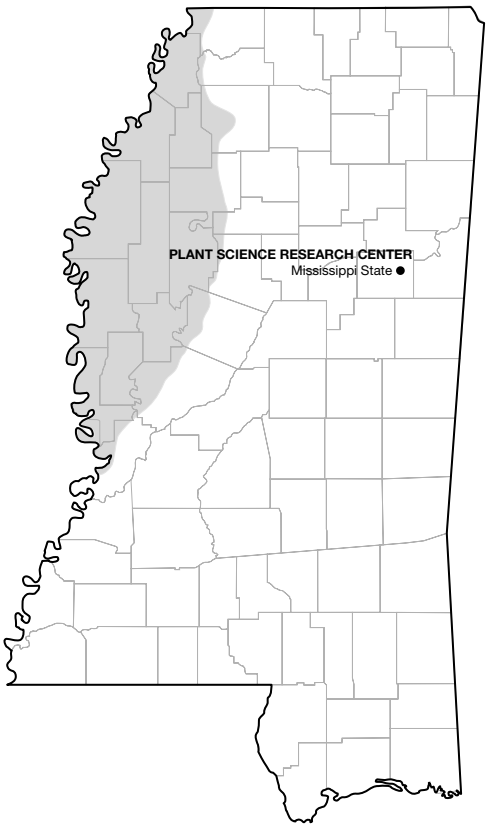
Variety	2017 yield	2-year avg.	3-year avg.	TSMK	Seed avg.
	lb/A	*lb/A*	*lb/A*	*%*	*no./lb*
TufRunner™ '297'	7910	6647	5363	76	504
Georgia-09B	7892	6358	4993	75	620
GA-16HO	7676	—	—	75	616
FloRun™ '331'	7666	—	—	75	592
Algrano QR14	7422	6050	4707	76	668
FloRun™ '107'	7414	6009	4807	72	688
AU-NPL 17	7262	—	—	75	600
Georgia-06G	7214	6052	4627	75	568
TufRunner™ '511'	7165	6168	5190	76	552
Georgia-12Y	7049	6049	4906	75	696
TifNV-HI O/L	6969	—	—	75	568
Tifguard	6929	—	—	76	584
'Florida 07'	6831	5744	4721	69	628
Georgia-13M	6796	5708	4616	77	756
FloRun™ '157'	6759	—	—	77	632
Algrano 0914	6739	—	—	74	588
Georgia-14N	6155	5320	4357	78	792
Algrano 0752	5942	—	—	73	640
Mean	7099			75	627
LSD	914				
CV	9.1				
R^2	0.47				

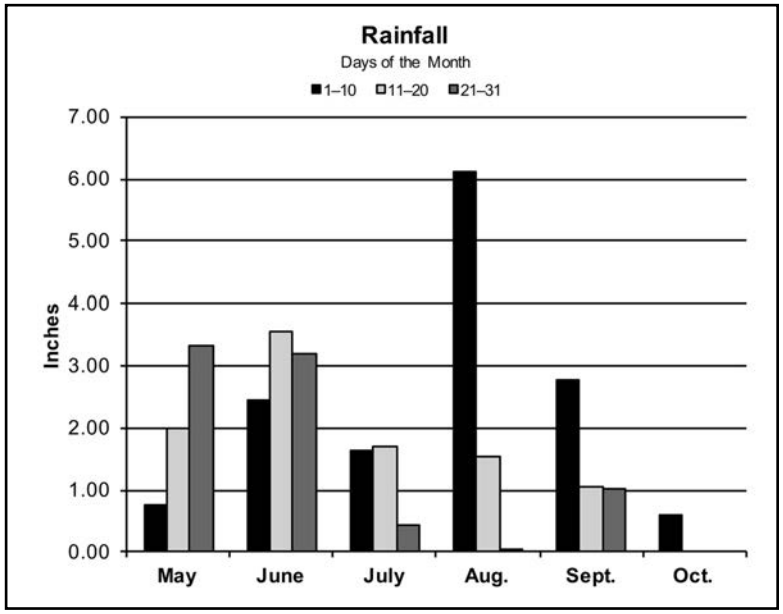
MAFES PLANT SCIENCE RESEARCH CENTER, STARKVILLE

Crop Summary

Peanut plots were planted in early May into a recently bedded seedbed. Soil moisture at planting was adequate. Weather conditions during the season were ideal, with timely rainfall and near-average temperatures. Ample soil moisture was available at harvest, and, as a result, plots were harvested in a timely manner.

Soil type .....Catalpa silty clay loam
Soil pH 6.8
Soil fertility .....P=H, K=H
Planting date .....May 9
Digging date .....QR14, 914, 752 — September 18; All others — October 3
Harvest date .....QR14, 914, 752 — September 27; All others — October 10
Herbicides .....Preemergence — Valor @ 3 oz/A and Dual @ 16 oz/A
Postemergence — Volunteer @ 10 oz/A and COC @ 32 oz/A on June 22
Fungicides .....Provost @ 8 oz/A + Baron @ 32 oz/A on June 22; Provost @ 8 oz/A on July 10 and July 24; and Tebuconazole @ 7.2 oz/A on August 16
Previous crop ....Corn





Rainfall Summary

	Inches
May	6.07
June	9.18
July	3.78
August	7.70
September	4.85
October	0.59
Total	32.17

Table 5. Yield, average size, and grade of peanut varieties at the MAFES Plant Science Research Center, Starkville.

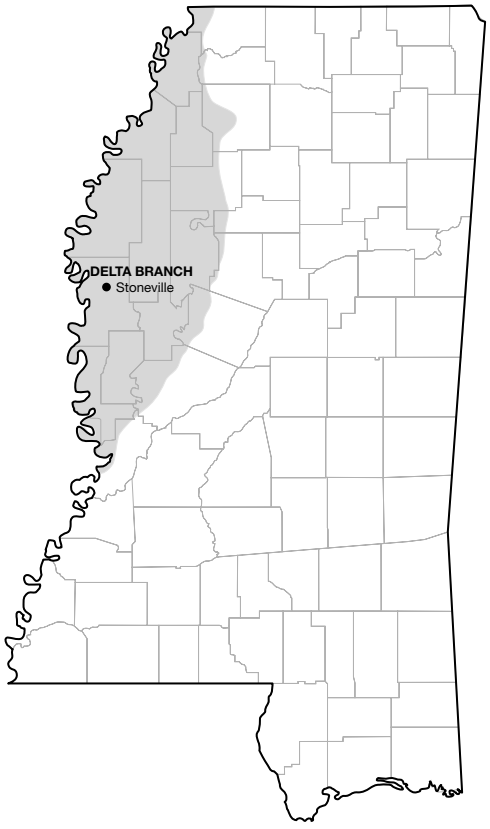
Variety	2017 yield	2-year avg.	3-year avg.	Seed avg.	TSMK
	lb/A	*lb/A*	*lb/A*	*no./lb*	*%*
GA-16HO	7207	—	—	701	76
Georgia-06G	7200	5997	5085	728	71
FloRun™ '331'	7066	—	—	816	71
TufRunner™ '511'	6960	5795	5000	636	69
'Florida 07'	6530	5317	4672	618	69
TufRunner™ '297'	6509	5758	5049	664	71
FloRun™ '107'	6440	5496	4763	828	68
AU-NPL 17	6337	—	—	736	69
Georgia-12Y	6202	5091	4575	868	69
FloRun™ '157'	6085	—	—	824	70
Georgia-09B	6081	5432	4771	698	73
TifNV-HI O/L	5682	—	—	676	71
Tifguard	5644	—	—	740	71
Georgia-14N	5543	4411	3946	1017	73
Georgia-13M	5135	4921	4385	988	69
Algrano 0752	4842	—	—	724	68
Algrano QR14	4648	4788	4446	884	69
Algrano 0914	4642	—	—	772	66
Mean	6042			777	70
LSD	904				
CV	10.5				
R^2	0.69				

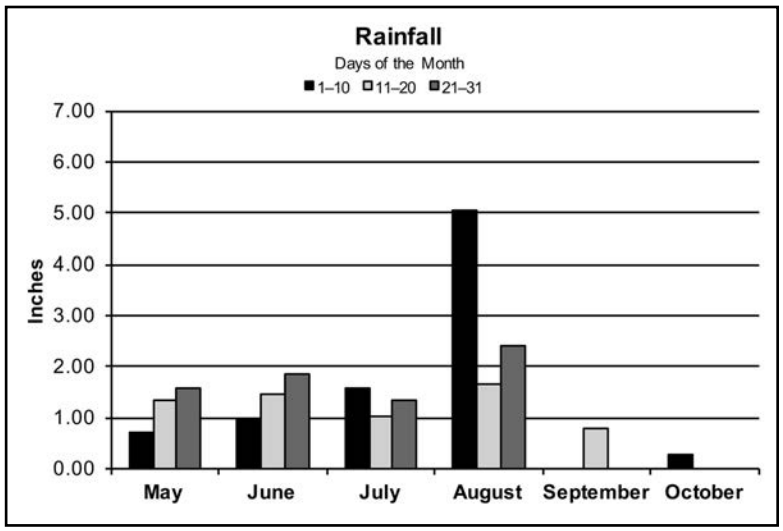
MAFES DELTA BRANCH, STONEVILLE

Crop Summary

Peanut plots were planted into a well-prepared seedbed that had just been do-alled before planting. Soil moisture at planting was adequate for germination. All plots quickly emerged to a good stand. The growing season was favorable, with adequate rainfall and milder-than-average summer temperatures. Fall weather conditions were favorable for both digging and harvest of these plots. Harvest was completed in a timely manner without difficulties.

Soil type . . . . . .Bosket and Beulah very fine sandy loam
Soil pH 6.3
Soil fertility . . . . . .P=H, K=H
Planting date . . . . . .May 9
Digging date . . . . . .September 26
Harvest date . . . . . .October 4
Previous crop . . . . . .Cotton
Herbicides . . . . . .Preemergence — Strongarm @ 0.47 oz/A and Prowl 3 pt/A on May 10
Postemergence — Select Max @ 12 oz/A + 1% COC on June 28; and Select Max @ 12 oz/A + 1% COC on August 18
Plant Growth Regulator . . .Apogee @ 7.25 oz/A
Fungicides . . . . . .Convoy @ 32 oz/A + Headline @ 15 oz/A on July 7; Convoy @ 32 oz/A + Headline @ 15 oz/A on August 2; and Convoy @ 20 oz/A + Abound 22 oz/A on August 29
Irrigation . . . . . .Furrow irrigated August 4





Rainfall Summary

	Inches
May	3.60
June	4.33
July	3.91
August	9.08
September	0.79
October	0.29
Total	22.00

Table 6. Yield, average size, and grade of peanut varieties at the MAFES Delta Branch, Stoneville.

Variety	2017 yield	2-year avg.	3-year avg.	TSMK	Seed avg.
	lb/A	*lb/A*	*lb/A*	*%*	*no./lb*
GA-16HO	7490	—	—	75	688
FloRun™ '331'	7072	—	—	75	728
FloRun™ '157'	6908	—	—	75	724
Georgia-13M	6864	5523	5274	76	792
TufRunner™ '297'	6790	5901	5484	75	636
Georgia-09B	6691	5450	5017	75	732
'Florida 07'	6641	5708	5207	73	708
Georgia-12Y	6633	5481	5376	72	752
FloRun™ '107'	6574	5545	5234	75	784
Algrano QR14	6551	5593	4978	74	808
Georgia-06G	6517	5838	5467	76	680
TufRunner™ '511'	6502	5648	5400	74	724
Algrano 0914	6249	—	—	74	676
Algrano 0752	6158	—	—	72	728
TifNV-HI O/L	5974	—	—	74	700
AU-NPL 17	5935	—	—	74	684
Tifguard	5849	—	—	76	668
Georgia-14N	4755	4492	4273	76	908
Mean	6453			75	
LSD	731				
CV	8.0				
R^2	0.63				

BEAUMONT

Data not reported due to extensive weathering and animal foraging

Peanut harvest data and variety yield performance are not published from the trial that was conducted at the Beaumont location due to damage caused by prolonged weathering and animal feeding. This location experienced frequent and heavy rainfall in the weeks after digging of the plots. These rains weathered the plants and pods to the point that harvest efficiency was diminished, not allowing for each variety's true yield potential to be expressed. Also, since these plots endured an extended time in the field, there was significant animal foraging within them, which further reduced the yield potential of certain varieties. These factors at the end of the growing season resulted in substantial variability within the trial and extremely poor yields, well below the average for this location.

MS AGRICULTURAL AND
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George M. Hopper, Director **www.mafes.msstate.edu**