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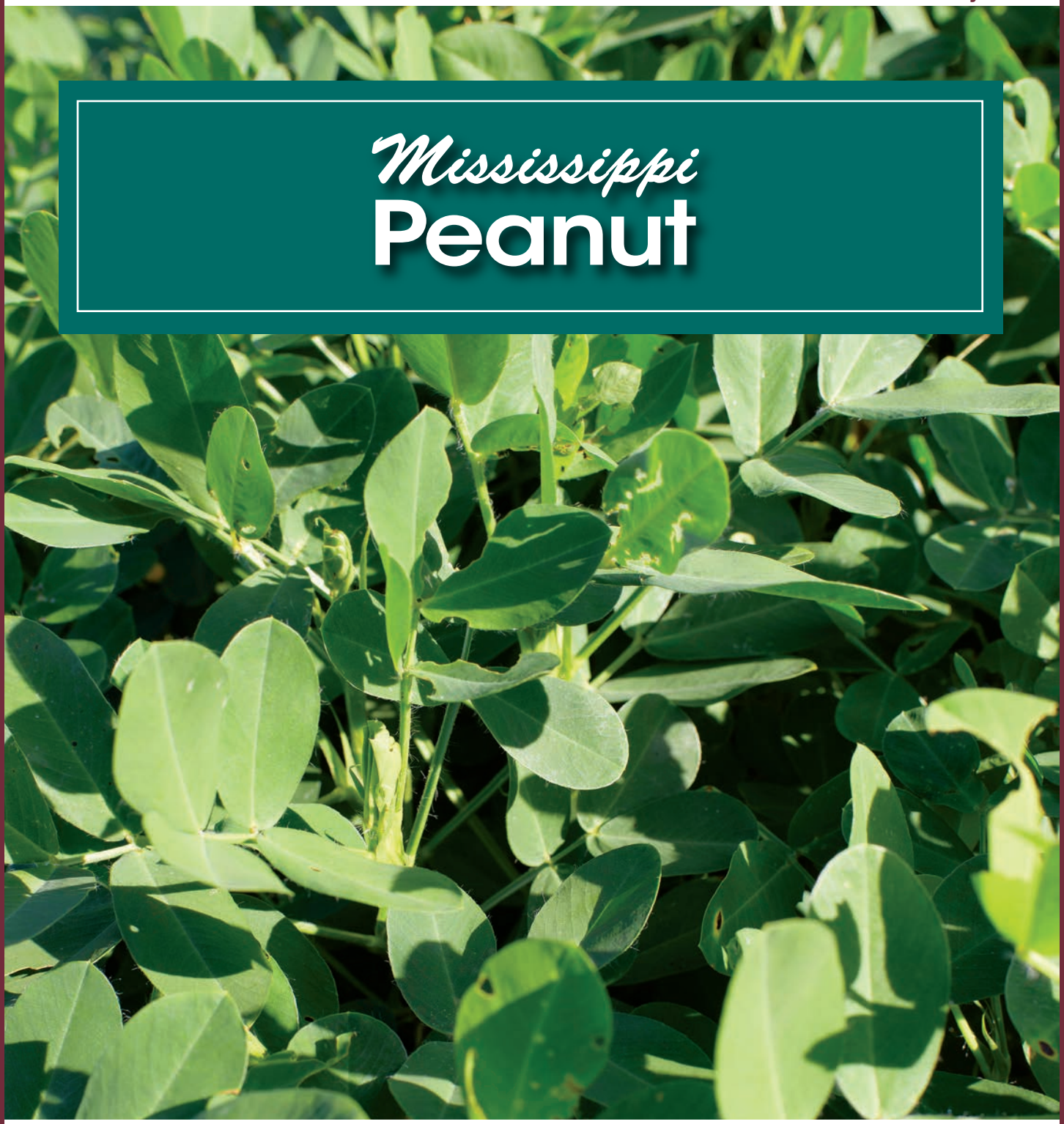

Mississippi Peanut

VARIETY TRIALS, 2016

MISSISSIPPI'S OFFICIAL VARIETY TRIALS

MISSISSIPPI STATE UNIVERSITY™
MS AGRICULTURAL AND
FORESTRY EXPERIMENT STATION

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This Mississippi Agricultural and Forestry Experiment Station information bulletin is a summary of research conducted at locations shown on the map on the second page. It is intended for colleagues, cooperators, and sponsors. The interpretation of data presented in this report may change after additional experimentation. Information included is not to be construed as a recommendation for use or as an endorsement of a specific product by Mississippi State University or the Mississippi Agricultural and Forestry Experiment Station.

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, 2016

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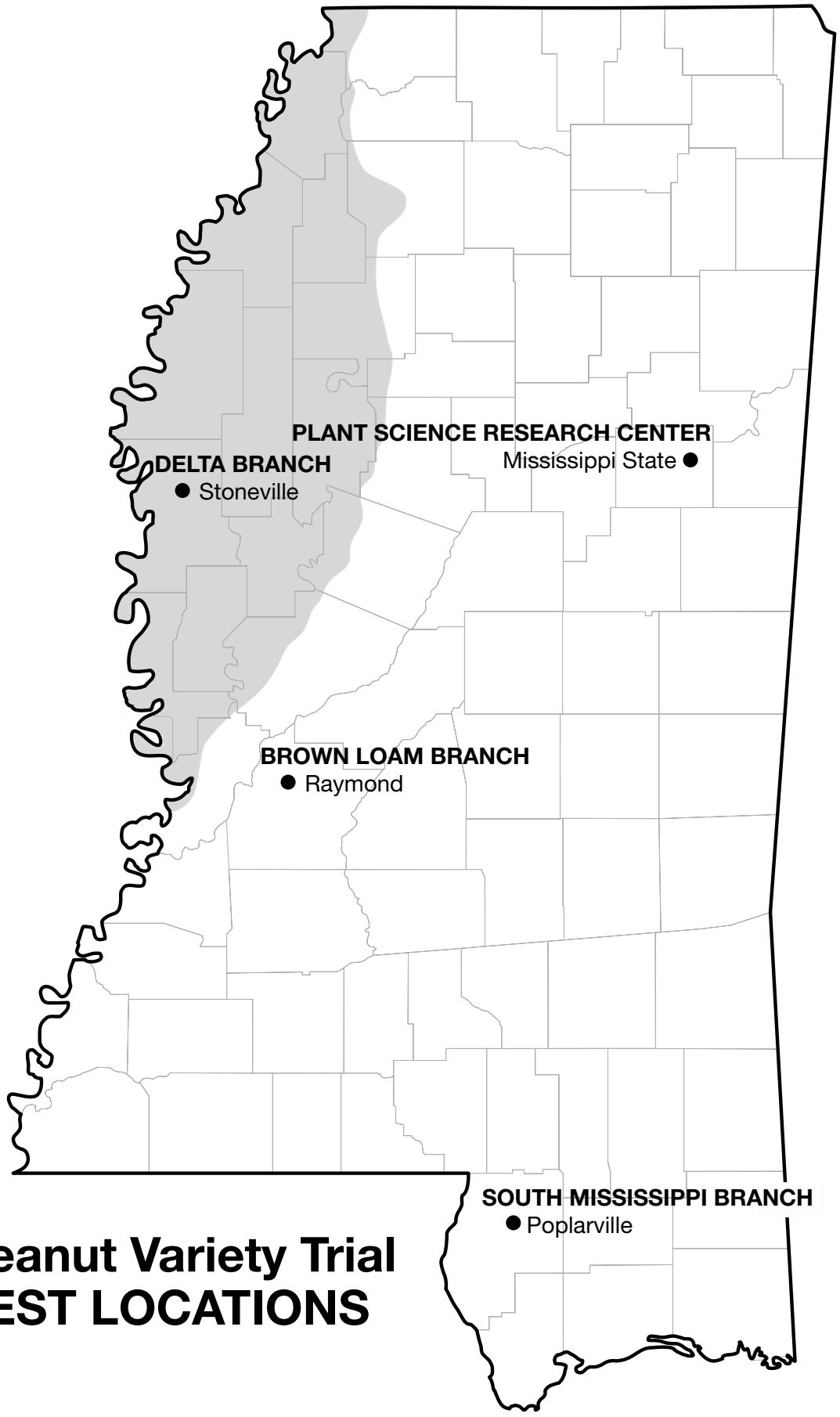
Find variety trial information online at ***mafes.msstate.edu/variety-trials***.



Peanut Variety Trial
TEST LOCATIONS

Mississippi Peanut Variety Trials, 2016

PROCEDURES

Peanut variety trials were conducted at four locations in Mississippi in 2016. 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. Yield summary of 2016 peanut variety trials in Mississippi.

Variety	Starkville	Poplarville	Raymond	Stoneville	Overall average
	lb/A	*lb/A*	*lb/A*	*lb/A*	*lb/A*
Georgia-06G	4795	5603	4890	5158	5112
Georgia-12Y	3979	5365	5050	4329	4681
Georgia-13M	4708	4562	4620	4182	4518
Georgia-14N	3279	4385	4485	4230	4095
TufRunner™ '511'	4630	4866	5170	4795	4865
TufRunner™ '727'	4850	5081	4981	5148	5015
FloRun™ '107'	4553	4966	4604	4517	4660
TufRunner™ '297'	5008	5170	5385	5012	5143
Algrano QR14	4927	4379	4677	4635	4655
'Florida-07'	4105	4359	4658	4776	4474
Georgia-09B	4784	5285	4824	4209	4775
FloRun™ '157'	4920	5147	4729	5160	4989
Mean	4545	4931	4839	4679	4748
LSD	1311	726	692	1306	496
CV	20.16	10.27	9.99	18.26	14.78
R^2	0.27	0.46	0.27	0.18	0.16

Table 2. 2016 Mississippi peanut grades (% TSMK).

Variety	Starkville	Poplarville	Raymond	Stoneville	Overall average
	%	%	%	%	%
Georgia-06G	76.7	78.0	74.5	74.4	75.9
Georgia-12Y	73.5	74.6	72.1	74.6	73.7
Georgia-13M	75.7	78.0	75.1	74.1	75.7
Georgia-14N	76.2	77.7	76.8	76.3	76.8
TufRunner™ '511'	76.5	77.0	74.4	72.6	75.1
TufRunner™ '727'	75.3	76.9	74.4	75.5	75.5
FloRun™ '107'	75.3	76.0	74.3	75.4	75.2
TufRunner™ '297'	75.2	77.1	75.7	74.7	75.7
Algrano QR14	75.3	76.9	72.9	74.8	75.0
'Florida-07'	74.8	74.8	69.9	74.3	73.4
Georgia-09B	74.8	75.6	72.7	74.1	74.3
FloRun™ '157'	75.4	77.6	74.7	73.3	75.2
Mean	75.4	76.7	74.0	74.5	75.1

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

Variety	Starkville	Poplarville	Raymond	Stoneville	Overall average
	lb/A	*lb/A*	*lb/A*	*lb/A*	*lb/A*
Algrano QR14	4345	3708	3350	4192	3899
'Florida-07'	3743	4075	3665	4490	3993
FloRun™ '107'	3925	4003	3503	4564	3999
Georgia-06G	4028	4290	3334	4942	4149
Georgia-09B	4116	3745	3543	4181	3896
Georgia-12Y	3762	4452	3834	4747	4199
Georgia-13M	4009	4314	3526	4479	4082
Georgia-14N	3147	3732	3457	4032	3592
TufRunner™ '297'	4319	4564	4089	4830	4451
TufRunner™ '511'	4020	3783	4203	4849	4214
TufRunner™ '727'	4127	4098	3763	4735	4180
Overall mean	3958	4070	3661	4549	4059

Table 4. Three-year (2014, 2015, and 2016) yield summary of peanut variety trials in Mississippi.

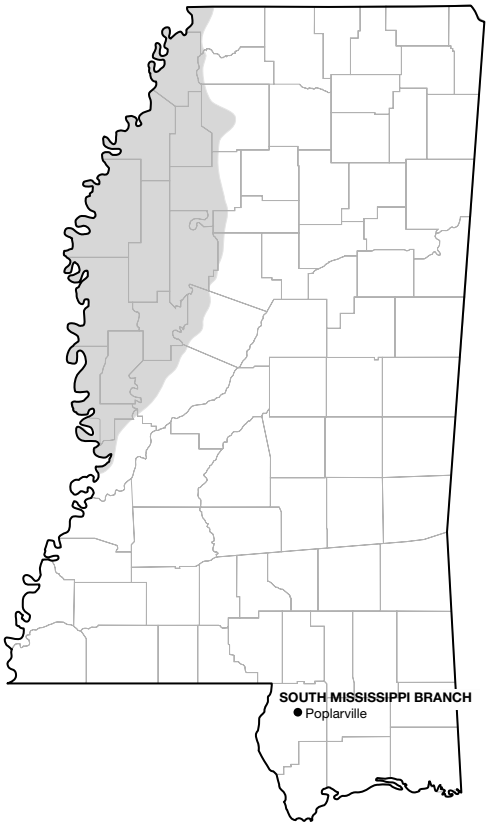
Variety	Starkville	Raymond	Stoneville	Overall avg.
	lb/A	*lb/A*	*lb/A*	*lb/A*
'Florida-07'	3559	4482	4828	4290
FloRun™ '107'	3425	3901	4715	4013
Georgia-06G	3731	3967	4901	4200
Georgia-09B	3600	3931	4686	4072
Georgia-12Y	3341	4402	5107	4284
Georgia-13M	3346	4237	4920	4167
TufRunner™ '511'	4041	4971	5293	4768
Overall mean	3578	4270	4921	4256

MAFES SOUTH MISSISSIPPI BRANCH, POPLARVILLE

Crop Summary

The peanut trial was planted into a well-prepared seedbed. There was sufficient soil moisture at planting for germination. All plots emerged to a stand. Yellow nutsedge was heavy early in the season but was controlled to a satisfactory level with Cadre. Leaf spot became a minor problem late in the season. All plots were dug and harvested in a timely manner.

Soil type . . . . . **Ruston fine sandy loam**
Soil pH **6.4**
Soil fertility . . . . . **P=M, K=M**
Planting date . . . . . **May 12**
Digging date . . . . . **September 26**
Harvest date . . . . . **October 4**
Herbicide applications . . . **Preemergence — Dual II Magnum @ 16 oz/A, Valor @ 3 oz/A, and Strongarm @ 0.45 oz/A on May 12**
Postemergence — Cadre @ 4 oz/A on June 3; 2,4-DB @ 16 oz/A and Select Max @ 24 oz/A on July 12
Fungicide applications . . . **Elatus @ 8 oz/A on June 27; Provost @ 8 oz/A on July 19; Elatus @ 8 oz/A on August 8**
Fertilizer added . . . . . **Boron @ 0.25 lb/A on June 27**
Previous crop . . . . . **Fallow**



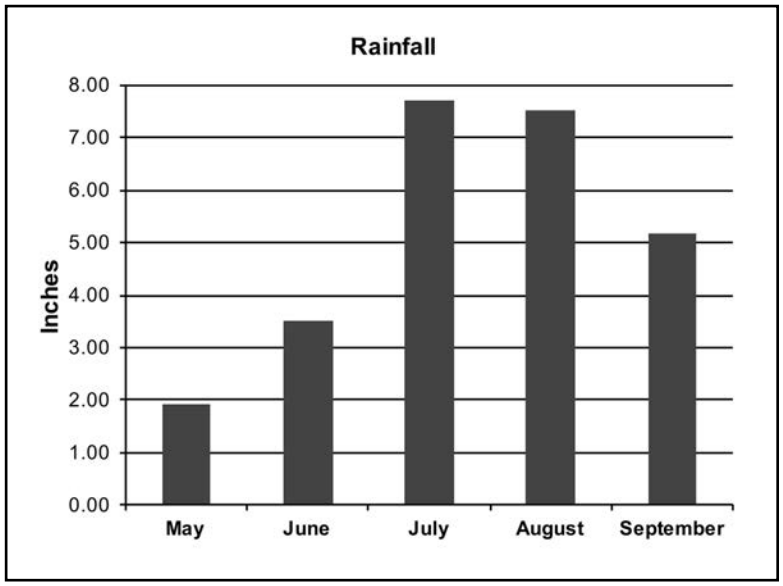


Table 5. Yield, average size, and grade of peanut varieties at the MAFES South Mississippi Branch, Poplarville.

Variety	2016 yield	2-year avg.	3-year avg.[1]	Seed avg.	TSMK
	lb/A	*lb/A*	*lb/A*	*no./lb*	*%*
Georgia-06G	5603	4290	—	600	78
Georgia-12Y	5365	4452	—	780	75
Georgia-09B	5285	3745	—	690	76
TufRunner™ '297'	5170	4564	—	590	77
FloRun™ '157'	5147	—	—	730	78
TufRunner™ '727'	5081	4098	—	610	77
FloRun™ '107'	4966	4003	—	720	76
TufRunner™ '511'	4866	3783	—	660	77
Georgia-13M	4562	4314	—	790	78
Georgia-14N	4385	3732	—	800	78
Algrano QR14	4379	3708	—	720	77
'Florida-07'	4359	4075	—	670	75
Mean	4931	4070	—	697	77
LSD	726				
CV	10.27				
R^2	0.46				

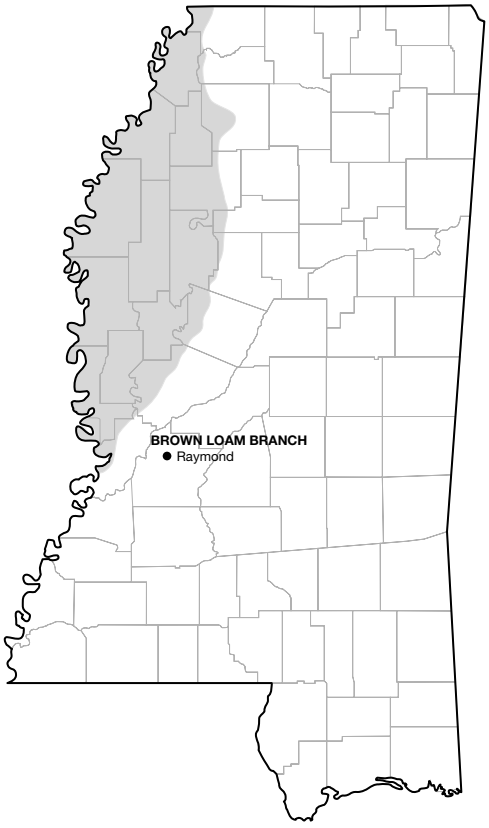
[1]No 3-year averages.

MAFES BROWN LOAM BRANCH, RAYMOND

Crop Summary

The peanut plots were planted no-till into an undisturbed seedbed from the previous year. Soil moisture at planting was adequate for germination. All plots emerged to a stand. Overall, the growing season was warm and dry. However, the plots received a few timely rains that allowed for respectable yields. The harvest season was extremely favorable due to the dry fall. Digging and harvest were completed in a timely manner.

Soil type . . . . . **Loring silt loam**
Soil pH **6.1**
Soil fertility . . . . . **P=M, K=M**
Planting date . . . . . **May 11**
Digging date . . . . . **September 29**
Harvest date . . . . . **October 5**
Herbicide applications . . . **Preemergence — Roundup PowerMax @ 32 oz/A, Dual II Magnum @ 32 oz/A, and Valor @ 3 oz/A on May 11**
Postemergence — Select @ 12 oz/A and Ultra Blazer @ 16 oz/A on June 22; Select @ 12 oz/A and Cadre @ 4 oz/A on July 13; Select @ 10 oz/A on August 19
Fungicide applications . . . **Headline @ 12 oz/A on June 22 and August 19; Abound @ 14 oz/A on July 13 and August 2**
Insecticide application . . . **Karate @ 1.9 oz/A on August 2**
Fertilizer added . . . . . **Preplant — 0-20-20 @ 160 lb/A**
Post — Solubor @ 8 oz/A on June 22 and July 13



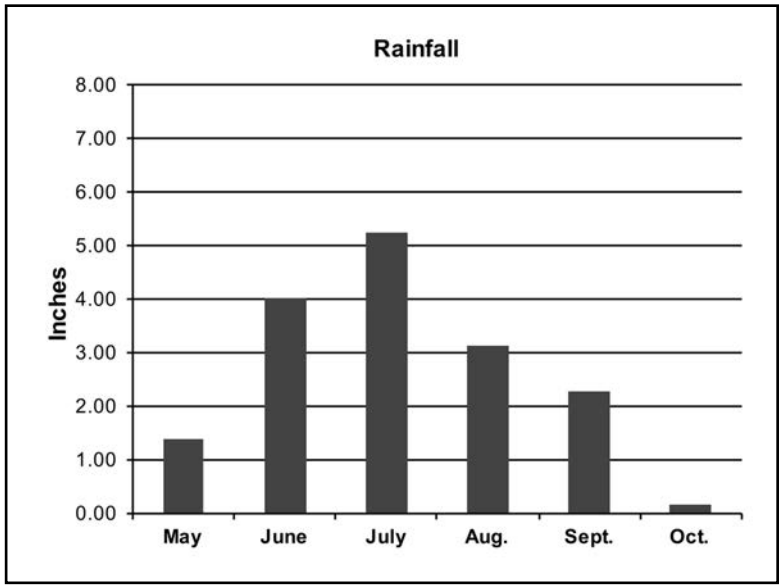


Table 6. Yield, average size, and grade of peanut varieties at the MAFES Brown Loam Branch, Raymond.

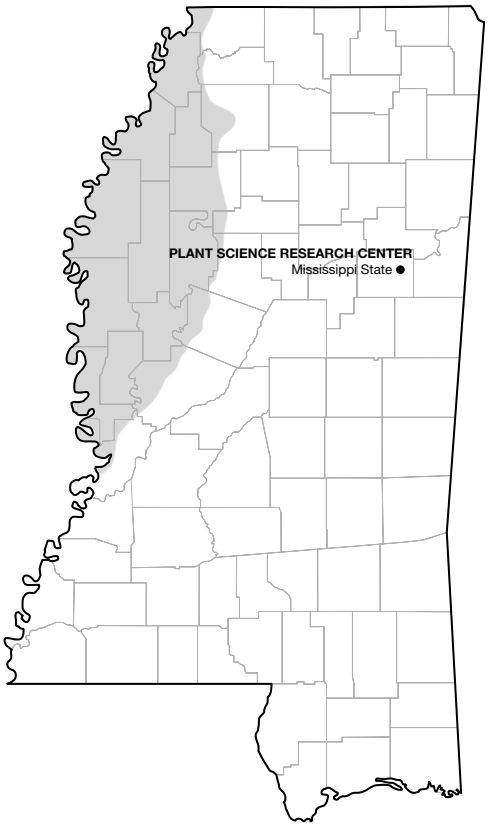
Variety	2016 yield	2-year avg.	3-year avg.	Seed avg.	TSMK
	lb/A	*lb/A*	*lb/A*	*no./lb*	*%*
TufRunner™ '297'	5385	4089	—	790	76
TufRunner™ '511'	5170	4203	4971	824	74
Georgia-12Y	5050	3834	4402	574	72
TufRunner™ '727'	4981	3763	—	709	74
Georgia-06G	4890	3334	3967	654	74
Georgia-09B	4824	3543	3931	698	73
FloRun™ '157'	4729	—	—	752	75
Algrano QR14	4677	3350	—	850	73
'Florida-07'	4658	3665	4482	854	70
Georgia-13M	4620	3526	4237	906	75
FloRun™ '107'	4604	3503	3901	664	74
Georgia-14N	4485	3457	—	584	77
Mean	4839				
LSD	692				
CV	9.99				
R^2	0.27				

MAFES PLANT SCIENCE RESEARCH CENTER, STARKVILLE

Crop Summary

The peanut plots were planted in mid-May into a seedbed that had been bedded up earlier that spring. There was good soil moisture at planting. All plots emerged to a good stand. Timely rainfall and supplemental irrigation provided ample moisture throughout the growing season. Extremely dry weather conditions were observed during the fall. Digging and harvest were completed in a timely manner.

Soil type . . . . . **Catalpa silty clay loam**
Soil pH **7.2**
Soil fertility . . . . . **P=M, K=H**
Planting date . . . . . **May 13**
Digging date . . . . . **Early varieties — September 21; Late varieties — September 29**
Harvest date . . . . . **Early varieties — September 26; Late varieties — October 6**
Herbicide applications . . . **Preemergence — Dual II Magnum @ 16 oz/A and Valor @ 3 oz/A on May 13**
Postemergence — Volunteer @ 10 oz/A + COC on June 24 and July 18
Fungicide applications . . . **Provost @ 8 oz/A on July 26; Elatus @ 8 oz/A on August 16; Provost @ 8 oz/A on August 22; Provost @ 8 oz/A on September 14**
Insecticide application . . . **Prevathon @ 20 oz/A on August 22**
Irrigation . . . . . **Furrow irrigated as needed**
Previous crop . . . . . **Cotton**



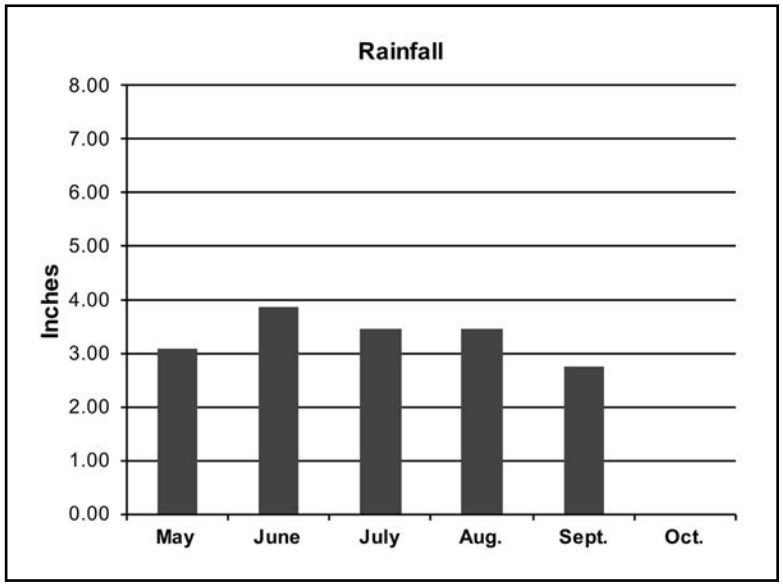


Table 7. Yield, average size, and grade of peanut varieties at the MAFES Plant Science Research Center, Starkville.

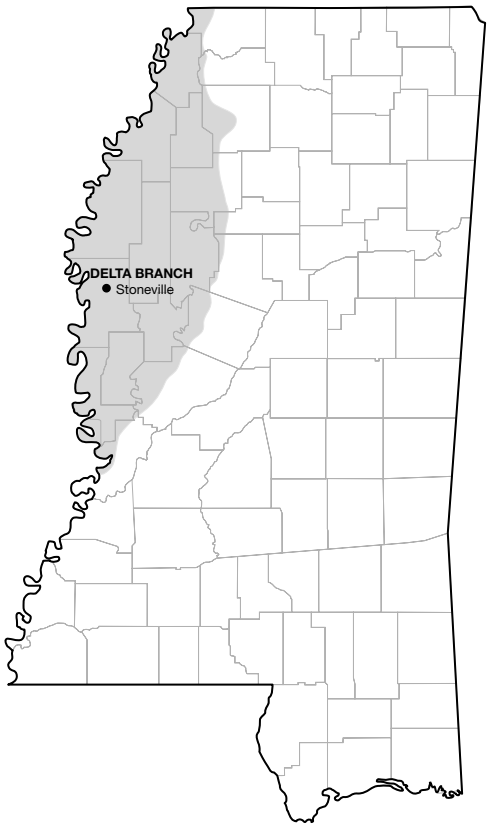
Variety	2016 yield	2-year avg.	3-year avg.	Seed avg.	TSMK
	lb/A	*lb/A*	*lb/A*	*no./lb*	*%*
TufRunner™ '297'	5008	4319	—	670	75
Algrano QR14	4927	4345	—	910	75
FloRun™ '157'	4920	—	—	840	75
TufRunner™ '727'	4850	4127	—	820	75
Georgia-06G	4795	4028	3731	730	77
Georgia-09B	4784	4116	3600	770	75
Georgia-13M	4708	4009	3346	890	76
TufRunner™ '511'	4630	4020	4041	650	76
FloRun™ '107'	4553	3925	3425	790	75
'Florida-07'	4105	3743	3559	760	75
Georgia-12Y	3979	3762	3341	780	74
Georgia-14N	3279	3147	—	902	76
Mean	4545	3958	3578	793	75
LSD	1311				
CV	20.16				
R^2	0.27				

MAFES DELTA BRANCH, STONEVILLE

Crop Summary

The plots were planted into a well-prepared, flat seedbed that had been disked and do-alled just before planting. Soil moisture at planting was optimal for germination and emergence. The plots quickly emerged to a stand. Timely rainfall at this location supplied adequate soil moisture throughout the growing season. Very dry weather during the fall and harvest season resulted in a timely harvest.

Soil type . . . . . **Bosket very fine sandy loam**
Soil pH **6.9**
Soil fertility . . . . . **P=H, K=H+**
Planting date . . . . . **May 11**
Digging date . . . . . **September 28**
Harvest date . . . . . **October 5**
Previous crop . . . . . **Cotton**
Herbicide applications . . . **Preemergence — Strongarm @ 0.45 oz/A and Dual II Magnum @ 1.33 pt/A on May 11**
Postemergence — Gramoxone @ 16 oz/A on May 27; Select Max @ 12 oz/A on June 17
Fungicide applications . . . **Headline @ 7 oz/A on June 28; Fontelis @ 24 oz/A on July 20; Provost @ 10 oz/A on August 11; Fontelis @ 24 oz/A on August 24**
Irrigation . . . . . **Furrow irrigated July 1**



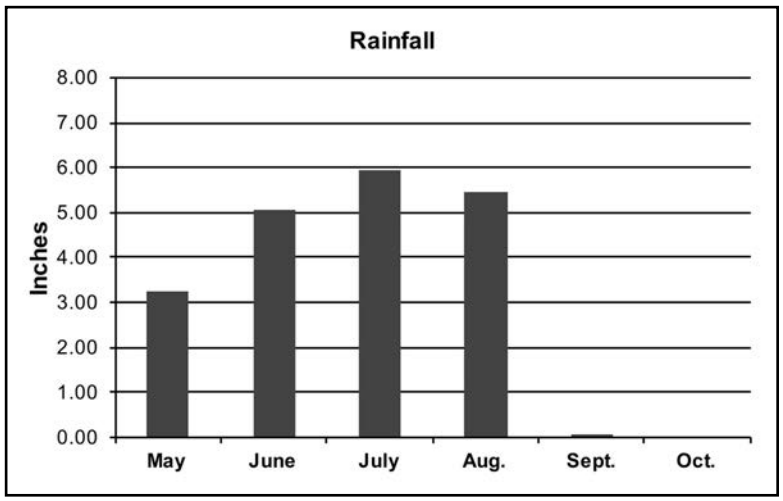


Table 8. Yield, average size, and grade of peanut varieties at the MAFES Delta Branch, Stoneville.

Variety	2016 yield	2-year avg.	3-year avg.[1]	Seed avg.	TSMK
	lb/A	*lb/A*	*lb/A*	*no./lb*	*%*
FloRun™ '157'	5160	—	—	—	73
Georgia-06G	5158	4942	4901	—	74
TufRunner™ '727'	5148	4735	—	—	76
TufRunner™ '297'	5012	4830	—	—	75
TufRunner™ '511'	4795	4849	5293	—	73
'Florida-07'	4776	4490	4828	—	74
Algrano QR14	4635	4192	—	—	75
FloRun™ '107'	4517	4564	4715	—	75
Georgia-12Y	4329	4747	5107	—	75
Georgia-14N	4230	4032	—	—	76
Georgia-09B	4209	4181	4686	—	74
Georgia-13M	4182	4479	4920	—	74
Mean	4679				
LSD	1306				
CV	18.26				
R^2	0.18				

MS AGRICULTURAL AND
FORESTRY EXPERIMENT STATION

The mission of the Mississippi Agricultural and Forestry Experiment Station and the College of Agriculture and Life Sciences is to advance agriculture and natural resources through teaching and learning, research and discovery, service and engagement which will enhance economic prosperity and environmental stewardship, to build stronger communities and improve the health and well-being of families, and to serve people of the state, the region and the world.

George M. Hopper, Director

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