

MISSISSIPPI PEANUT

VARIETY TRIALS, 2021

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MISSISSIPPI'S OFFICIAL VARIETY TRIALS



MISSISSIPPI STATE UNIVERSITY™
MS AGRICULTURAL AND
FORESTRY EXPERIMENT STATION

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Mississippi Peanut Variety Trials, 2021

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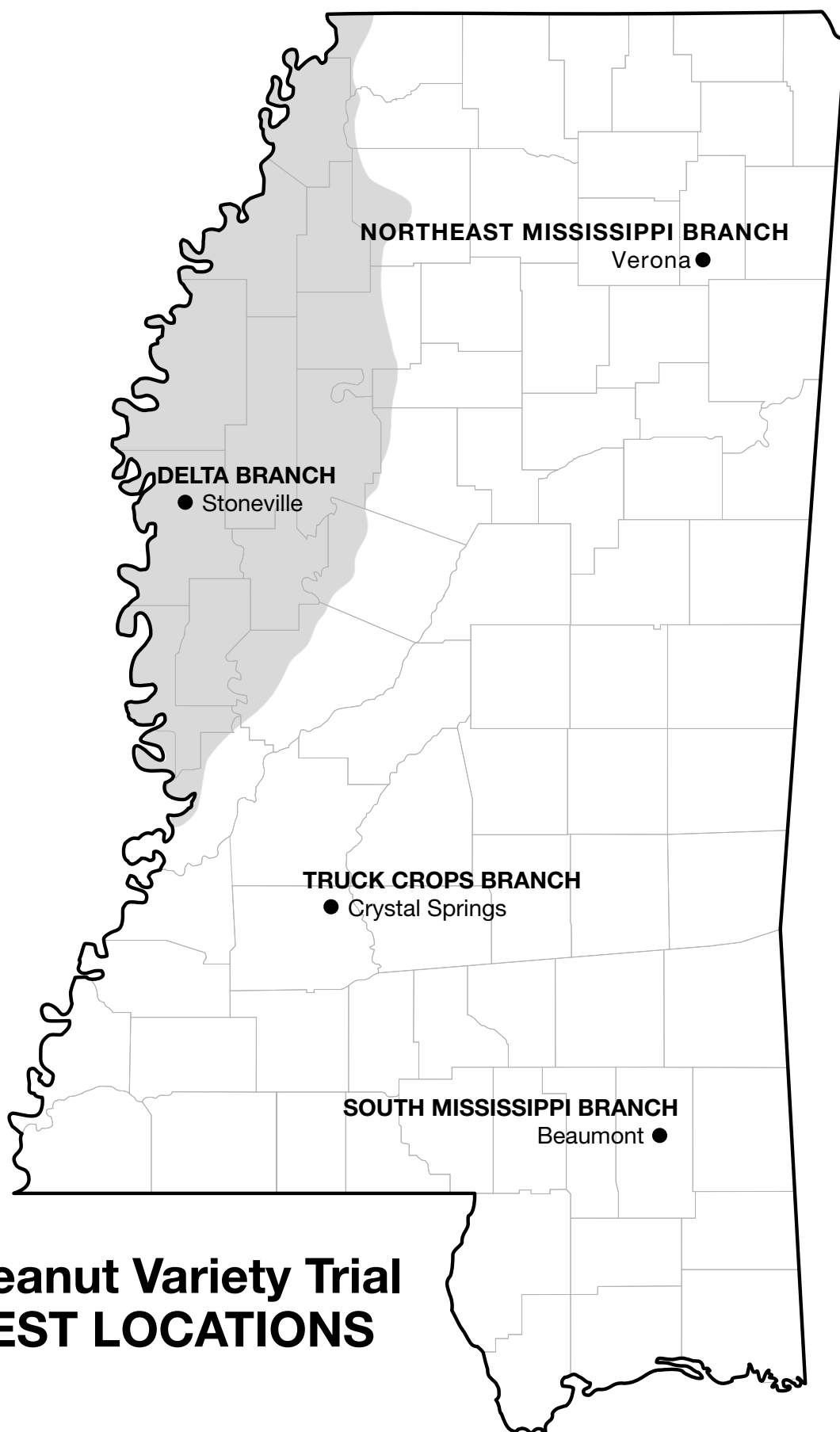
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Find variety trial information online at mafes.msstate.edu/variety-trials.



Peanut Variety Trial TEST LOCATIONS

Mississippi Peanut Variety Trials, 2021

PROCEDURES

Peanut variety trials were conducted at four locations in Mississippi in 2021. 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 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 thorough 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. 2021 peanut variety trial location summary.

Location	Soil type	Planting date	Digging date	Harvest date	Row spacing
Beaumont, Coastal R&E Center	McLaurin sandy loam	5/17	10/15	10/25	38" twin drill
Crystal Springs, Central MS R&E Center	Providence silt loam	5/20	10/15	10/26	38" twin drill
Stoneville, Delta R&E Center	Bosket very fine sandy loam	5/14	10/15	10/26	38" twin drill
Verona, North MS R&E Center	Leeper fine sandy loam	5/7	10/13	10/22	38" twin drill

Table 2. 2021 Mississippi Peanut Official Variety Trial yield and grade summary.

Variety	Beaumont		Crystal Springs		Stoneville		Verona		Overall average	
	Yield	TSMK	Yield	TSMK	Yield	TSMK	Yield	TSMK	Yield	TSMK
	<i>lb/A</i>	%	<i>lb/A</i>	%	<i>lb/A</i>	%	<i>lb/A</i>	%	<i>lb/A</i>	%
AU-NPL-17	6897.6	68.3	8508.4	71.0	7196.3	72.7	7051.0	71.4	7413.4	70.8
FloRun™ '331'	8578.5	68.3	7708.2	68.5	7930.6	70.7	6804.3	72.6	7755.4	70.0
Georgia 06G	7249.1	71.1	7370.1	71.6	8110.5	73.5	6547.9	72.0	7319.4	72.0
Georgia-09B	7336.3	66.6	6809.9	70.8	8384.7	73.5	5957.1	70.5	7122.0	70.4
Georgia-12Y	8057.6	68.0	7590.2	72.1	7769.8	71.6	5637.4	71.6	7263.8	70.8
Georgia-14N	7618.6	68.8	4831.3	71.9	7861.7	72.0	4345.2	74.2	6164.2	71.7
Georgia-16HO	7251.9	73.9	8496.9	67.5	7760.1	70.4	6521.5	74.4	7507.6	71.5
Georgia-18RU	6520.8	73.1	8281.1	69.9	8217.8	71.6	6603.9	76.5	7405.9	72.8
Georgia-20VHO	6829.5	69.6	7129.7	71.7	7706.6	72.9	4277.6	76.2	6485.8	72.6
IPG 914	6428.4	68.5	5919.5	66.7	7666.8	68.5	3971.6	68.1	5996.5	68.0
TIFNV-High O/L	6943.9	69.2	7846.3	71.6	7022.3	73.2	6354.6	73.8	7041.8	71.9
TUFRunner™ '297'	7010.0	70.6	8415.9	69.9	7666.6	74.4	7181.4	75.1	7568.5	72.5
TUFRunner™ '511'	6817.8	67.6	7569.9	70.2	7392.1	73.1	7355.3	73.4	7283.8	71.1
UF-11X23	7609.4	71.9	7211.8	72.1	8050.2	71.3	6808.9	74.7	7420.1	72.5
Mean	7225.0	69.7	7406.4	70.4	7766.9	72.1	6101.3	73.2	7102.7	71.4
CV	15.6		15.2		9.6		24.7			
LSD	NS		1607		NS		2153			
R ²	25		50.9		23		40			
Error DF	42		42		42		42			

Table 3. Two-year (2020 and 2021) yield summary of peanut variety trials in Mississippi.

Variety	Beaumont	Crystal Springs	Stoneville	Verona	Overall avg.
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>
AU-NPL-17	6816.7	7010.2	6912.0	3938.2	6169.3
FloRun™ '331'	7463.9	7212.5	7770.9	4044.2	6622.9
Georgia 06G	6520.4	5998.6	7398.8	3864.6	5945.6
Georgia-09B	6530.3	5217.9	8030.5	3572.1	5837.7
Georgia-12Y	7179.1	6749.1	7391.0	3525.8	6211.3
Georgia-14N	6525.0	4225.5	6556.8	2757.5	5016.2
Georgia-16HO	7201.3	7168.6	7820.7	4044.9	6558.9
Georgia-18RU	6032.3	6776.3	7774.9	3937.3	6130.2
IPG 914	5810.4	5276.5	6961.6	2650.1	5174.6
TIFNV-High O/L	6607.5	6548.3	6658.0	3573.0	5846.7
TUFRunner™ '297'	6665.1	7111.3	7387.2	4183.4	6336.7
TUFRunner™ '511'	6506.0	6834.7	7244.4	4094.6	6169.9
Overall Mean	6654.8	6344.1	7325.6	3682.1	6001.7

Table 4. Three-year (2019, 2020, and 2021) yield summary of peanut variety trials in Mississippi.

Variety	Beaumont	Crystal Springs	Stoneville	Verona	Overall avg.
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>
AU-NPL-17	6610.2	5688.5	5397.8	5570.5	5816.7
FloRun™ '331'	6811.5	5986.0	6090.1	6073.0	6240.1
Georgia 06G	6232.9	5130.2	6122.2	5752.7	5809.5
Georgia-09B	6223.7	4466.4	5899.5	5458.8	5512.1
Georgia-12Y	6918.8	5643.2	6228.3	5413.9	6051.1
Georgia-14N	6041.4	3720.9	4970.0	4457.3	4797.4
Georgia-16HO	6888.1	6071.6	5741.8	6155.1	6214.1
Georgia-18RU	5920.2	5701.0	5640.7	6051.8	5828.4
IPG 914	5457.2	4385.0	6072.5	4569.0	5120.9
TIFNV-High O/L	6294.1	5534.5	5180.1	5571.8	5645.1
TUFRunner™ '297'	6603.7	5994.8	5572.4	6135.0	6076.5
Overall Mean	6363.8	5302.0	5719.6	5564.4	5737.5

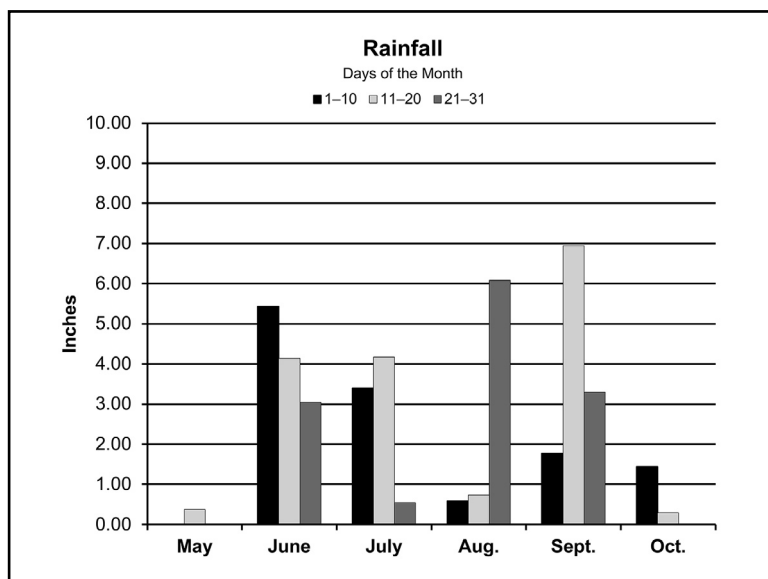
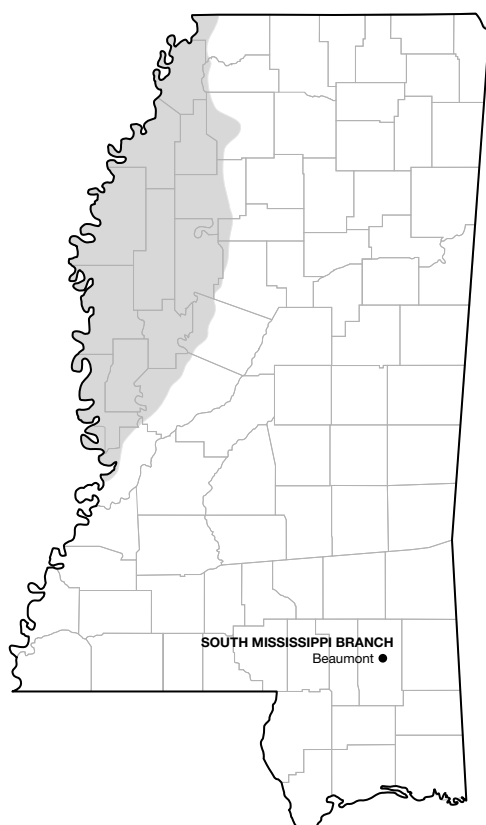
MAFES SOUTH MISSISSIPPI BRANCH, BEAUMONT

Crop Summary

The peanut plots were planted into a seedbed that had been hipped earlier in the spring. The rows were drug down with a harrow just prior to planting. Good soil moisture was present at planting for germination. All plots quickly emerged to a stand.

Timely rainfall throughout the season allowed for good soil moisture throughout. Digging and harvest of the plots was completed in a timely manner without weather delays. Good yields were recorded at this location.

Planting dateMay 14
Digging dateOctober 15
Harvest dateOctober 25
Soil typeLucedale fine sandy loam
Soil pH6.2
Soil fertilityP=M, K=M
Previous cropWheat
FertilizerPreplant — 13-13-13 @ 200 lb/A
HerbicidePreemergence — Dual II Magnum @ 24 oz, Valor @ 2 oz/A, and Gramoxone @ 32 oz/A on May 14
Postemergence — Select Max @ 16 oz/A and Cadre @ 5 oz/A on June 14;
SelectMax @ 16 oz/A on July 15
Fungicide/Insecticide ...Convoy @ 32 oz on June 14; Manzinga @ 32 oz/A on July 15; Manzinga @ 32 oz/A on July 31; Manzinga @ 32 oz/A on August 14; Muscle @ 32 oz and Miravis @ 3.4 oz on August 28



Rainfall Summary

	Inches
May	0.37
June	12.62
July	8.11
August	7.39
September.....	12.02
October	1.73
Total.....	42.24

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

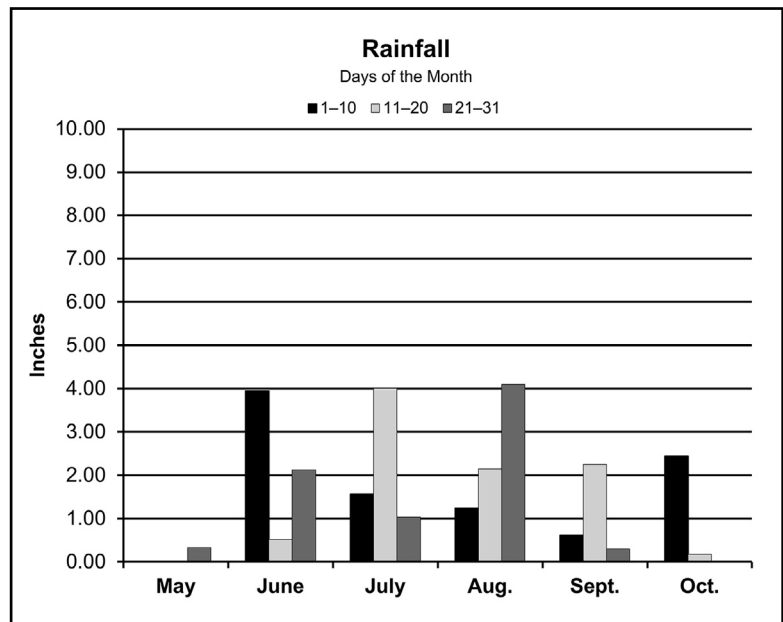
Variety	2021 yield	2-year avg.	3-year avg.	TSMK	Seed avg.
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>%</i>	<i>no./lb</i>
FloRunTM '331'	8578.5	7463.9	6811.5	68.3	750
Georgia-12Y	8057.6	7179.1	6918.8	68.0	790
Georgia-14N	7618.6	6525.0	6041.4	68.8	910
UF-11X23	7609.4	—	—	71.9	710
Georgia-09B	7336.3	6530.3	6223.7	66.6	680
Georgia-16HO	7251.9	7201.3	6888.1	73.9	640
Georgia 06G	7249.1	6520.4	6232.9	71.1	720
TUFRunnerTM '297'	7010.0	6665.1	6603.7	70.6	630
TIFNV-High O/L	6943.9	6607.5	6294.1	69.2	780
AU-NPL-17	6897.6	6816.7	6610.2	68.3	690
Georgia-20VHO	6829.5	—	—	69.6	770
TUFRunnerTM '511'	6817.8	6506.0	—	67.6	640
Georgia-18RU	6520.8	6032.3	5920.2	73.1	750
IPG 914	6428.4	5810.4	5457.2	68.5	830
Mean	7225.0				
CV	15.6				
LSD	NS				
R ²	25				
Error DF	42				

Crop Summary

stand. Timely rains fell throughout the season to allow for good soil moisture. The digging and harvest process were completed in a timely manner with difficulties.

TRUCK CROPS BRANCH

- Crystal Springs



Rainfall Summary

	Inches
May	0.33
June	6.59
July	6.59
August	7.49
September.....	3.16
October	2.62
Total.....	26.78

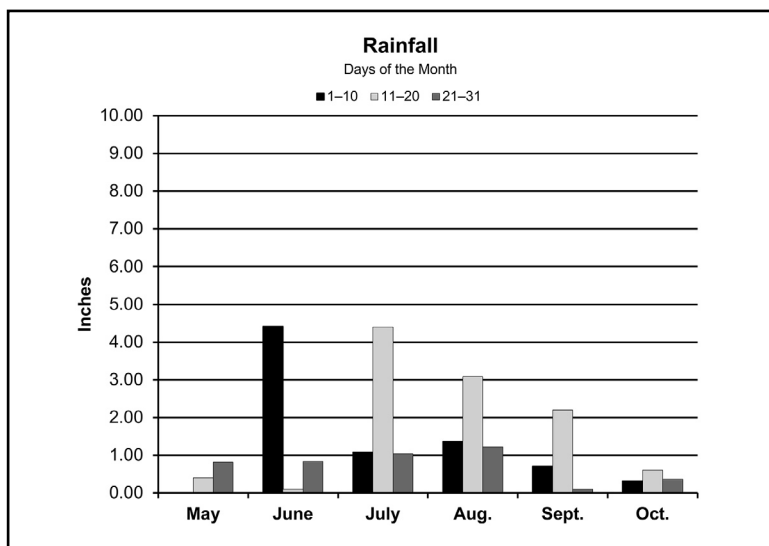
Table 6. Yield, average size, and grade of peanut varieties at the MAFES Truck Crops Branch, Crystal Springs.

Variety	2021 yield	2-year avg.	3-year avg.	TSMK	Seed avg.
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>%</i>	<i>no./lb</i>
AU-NPL-17	8508.4	7010.2	5688.5	71.0	700
Georgia-16HO	8496.9	7168.6	6071.6	67.5	780
TUFRunner™ '297'	8415.9	7111.3	5994.8	69.9	680
Georgia-18RU	8281.1	6776.3	5701.0	69.9	750
TIFNV-High O/L	7846.3	6548.3	5534.5	71.6	730
FloRun™ '331'	7708.2	7212.5	5986.0	68.5	790
Georgia-12Y	7590.2	6749.1	5643.2	72.1	780
TUFRunner™ '511'	7569.9	6834.7	—	70.2	720
Georgia 06G	7370.1	5998.6	5130.2	71.6	730
UF-11X23	7211.8	—	—	72.1	770
Georgia-20VHO	7129.7	—	—	71.7	780
Georgia-09B	6809.9	5217.9	4466.4	70.8	740
IPG 914	5919.5	5276.5	4385.0	66.7	760
Georgia-14N	4831.3	4225.5	3720.9	71.9	920
Mean	7406.4				
CV	15.2				
LSD	1607				
R ²	50.9				
Error DF	42				

Crop Summary

out the growing season. The plots were dug in mid-October. Harvest was completed approximately 2 weeks after digging in late October. Weather was very favorable during harvest season, and good yields were observed at this location.

A map of the Delta Branch watershed in Illinois. The watershed area is shaded in light gray and is located in the western part of the state, along the Mississippi River. The map shows county boundaries and the location of Stoneville, marked with a black dot. The text "DELTA BRANCH" and "Stoneville" are printed on the map.



Rainfall Summary

	Inches
May	1.22
June	5.35
July	6.52
August	5.67
September.....	3.01
October	1.28
Total.....	23.05

Table 7. Yield, average seed size, and grade of peanut varieties at the MAFES Delta Branch, Stoneville.

Variety	2021 yield	2-year avg.	3-year avg.	TSMK	Seed avg.
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>%</i>	<i>no./lb</i>
Georgia-09B	8384.7	8030.5	5899.5	73.5	840
Georgia-18RU	8217.8	7774.9	5640.7	71.6	920
Georgia 06G	8110.5	7398.8	6122.2	73.5	810
UF-11X23	8050.2	—	—	71.3	820
FloRun™ '331'	7930.6	7770.9	6090.1	70.7	800
Georgia-14N	7861.7	6556.8	4970.0	72.0	1020
Georgia-12Y	7769.8	7391.0	6228.3	71.6	870
Georgia-16HO	7760.1	7820.7	5741.8	70.4	820
Georgia-20VHO	7706.6	—	—	72.9	740
IPG 914	7666.8	6961.6	6072.5	68.5	900
TUFRunner™ '297'	7666.6	7387.2	5572.4	74.4	700
TUFRunner™ '511'	7392.1	7244.4	—	73.1	770
AU-NPL-17	7196.3	6912.0	5397.8	72.7	780
TIFNV-High O/L	7022.3	6658.0	5180.1	73.2	800
Mean	7766.9				
CV	9.6				
LSD	NS				
R ²	23				
Error DF	42				

Table 8. Yield, average seed size, and grade of peanut varieties at the MAFES Northeast Mississippi Branch, Verona.

Variety	2021 yield	2-year avg.	3-year avg.	TSMK	Seed avg.
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>%</i>	<i>no./lb</i>
TUFRunner™ '511'	7355.3	6141.9	—	73.4	600
TUFRunner™ '297'	7181.4	6275.1	6135.0	75.1	580
AU-NPL-17	7051.0	5907.3	5570.5	71.4	710
UF-11X23	6808.9	—	—	74.7	600
FloRun™ '331'	6804.3	6066.3	6073.0	72.6	690
Georgia-18RU	6603.9	5905.9	6051.8	76.5	700
Georgia 06G	6547.9	5797.0	5752.7	72.0	690
Georgia-16HO	6521.5	6067.3	6155.1	74.4	630
TIFNV-High O/L	6354.6	5359.5	5571.8	73.8	670
Georgia-09B	5957.1	5358.2	5458.8	70.5	730
Georgia-12Y	5637.4	5288.7	5413.9	71.6	740
Georgia-14N	4345.2	4136.2	4457.3	74.2	820
Georgia-20VHO	4277.6	—	—	76.2	730
IPG 914	3971.6	3975.1	4569.0	68.1	800
Mean	6101.3				
CV	24.7				
LSD	2153				
R ²	40				
Error DF	42				



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Keith Coble, Interim Director

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