

Field performance of eleven runner-type peanut cultivars in 2020 in Mississippi County, Arkansas

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An on-farm trial was conducted to assess the field performance of eleven runner-type peanut cultivars in Mississippi county, Arkansas. The cultivars (Table 1) were planted on May 21 at a seeding rate of 6 seed/ft of row. Plots consisted of two, 20-ft-long rows spaced 38-in apart separated by an 8-ft fallow alley. Seed was provided by Foundation seed in Alabama, Georgia, Florida, and Oklahoma. The experimental design was a RCBD with four replications per cultivar. Field plots were furrow irrigated and managed as per farmers production practice. Southern blight was assessed on Aug 29 as percent of plot infected. Digger loss was estimated after digging based on number of peanuts in a 1 sq ft transects systemically placed at beginning and middle of plots. Weights for 100 pods for each cultivar was used to estimate digger loss. Peanut plots were dug on Oct 24 (156 DAP) and thrashed with a mobile plot thrasher on Nov 5. A green weight was taken for replications 1, 3, and 4, while a dry weight was determined for block 4. The difference in green weight and dry weight were used to determine yield of green weights. A 3-lb sub sample was graded at Birdsong Buying Point in Portia, AR. Yield are reported at 6% moisture. Data was subject to AOV using ARM.

Southern blight developed later than normal during the 2020 cropping season

Though conditions at planting were favorable of seedling emergence a few cultivars had fewer than four seed per foot of row. Seedling emergence was a common concern among farmers in the area, thus it was assumed that environmental issues contribute to the poor stand establishment. Southern blight (caused by *Althelia rolfsii*; *Sclerotium rolfsii*; anamorph) was the only disease observed in the field. This disease is often observed near July 1 but was not observed in the 2020 cropping season until late August. Georgia 06G, Gorgia 12Y, Lariat, Georgia 16HO, and FloRun 331 has lower disease incidence than Georgia 09B. Georgia 09B is known to be susceptible to southern blight. No significant difference among cultivars to digger loss, which may have been due to the cooler than normal September, which slowed pod maturity. An estimated fewer 200 heat units (DD_{56}) were recorded in September 2020 compare to 2019. The runner-type peanut cultivars with the greatest ($P = 0.05$) yield averaged consisted of Georgia 06G compared to Georgia 09B (Table 2). Of the high oleic cultivars, Georgia 07W had a numerically greater yield than all other cultivars. Grades ranged from 71 to 78 with Georgia 06G having the highest and Georgia 12Y having the lowest. Value per acre followed that of the yield except for Lariat and TUFRunner 297 that hat better grades thus higher value per acre. Both cultivars had the greatest value per acre in 2019.

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Table 1. Stand, southern blight severity and digger loss of eleven peanut cultivars from a 2020 on-farm trial near Manila, Arkansas.

Cultivar ^a	Stand (plant/row ft) (Jun 1)	Southern blight (% incidence) (Aug. 29)	Digger Loss (lb/A)
Georgia 06G	3.6 bcd ^b	0.7 b	152.7
Georgia 07W	4.3 ab	1.6 ab	176.0
Georgia 18RU	3.4 b-e	0.9 ab	267.3
Georgia 12Y	4.3 ab	0.7 b	125.5
TUFRunner 297	2.7 cde	2.1 ab	149.9
Lariat	4.9 a	0.2 b	224.2
AU-NPL 17	2.6 de	1.3 ab	136.4
TUFRunner 511	3.3 b-e	1.6 ab	179.0
Georgia 16HO	4.2 ab	0.2 b	251.6
FloRun 331	2.5 e	0.2 b	187.9
Georgia 09B	3.7 bc	7.5 a	281.4
<i>P</i> > <i>F</i>	0.001	0.017	0.09
^a All cultivars are runner-type peanut. All are high oleic except Georgia 06G and Georgia 18RU.			
^b Means in each column followed by the same letter are not significantly different at <i>P</i> = 0.05 according Tukey's honest significant difference test.			

Table 2. Grade, yield, and value of eleven cultivars from a 2020 on-farm trial near Manila, Arkansas.

Cultivar ^a	Grade ^b (Total SMK)	%SS	Value/T ^c	Yield (lb/A)	Value/A
Georgia 06G	78	7	\$374.18	7,313 a ^d	\$1,368.19
Georgia 07W	73	7	\$350.13	6,818 ab	\$1,193.59
Georgia 18RU	76	7	\$364.56	6,596 ab	\$1,202.32
Georgia 12Y	71	3	\$342.91	6,348 ab	\$1,088.40
TUFRunner 297	74	5	\$356.54	6,200 ab	\$1,105.27
Lariat	77	5	\$370.47	6,137 ab	\$1,136.79
AU-NPL 17	72	5	\$346.96	6,037 ab	\$1,047.30
TUFRunner 511	73	9	\$348.53	5,988 ab	\$1,043.50
Georgia 16HO	76	4	\$366.96	5,982 ab	\$1,097.58
FloRun 331	73	6	\$350.93	5,881 ab	\$1,031.91
Georgia 09B	74	5	\$356.54	5,495 b	\$979.59
<i>P</i> > <i>F</i>	0.019	...
^a All cultivars are runner-type peanut. All are high oleic except Georgia 06G and Georgia 18RU.					
^b Grade was conducted at Birdsong Buying Point in Portia, AR.					
^c USDA Price Table for 2016 (each SS% >4% docked \$0.80/%).					
^d Means in each column followed by the same letter are not significantly different at <i>P</i> = 0.05 according Tukey's honest significant difference test.					