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Peanut Variety Performance in Florida 2002-2005[1]

B. L. Tillman, D. W. Gorbet, H. C. Wood, M. W. Gomillion, J. McKinney[2]

Variety choice is a critical management decision for peanut production. There are several good peanut varieties to choose from today. We strongly recommend planting more than one variety on your farm, especially if you plant more than 100 acres of peanuts. Planting more than one variety can help to spread risk of losses from diseases and weather. For example, if you have fields with a history of white mold, there are varieties that have good resistance to that disease compared to some others. We recommend using the University of Georgia Disease Risk Index, or the University of Florida Plant Protection Pointers to evaluate variety resistance to diseases. Your county agent can help you find these resources. For convenience, we have included a summary table from the University of Georgia Disease Risk Index in this article (Table 5).

When you try a new variety for the first time, we recommend planting a relatively small "test" plot (20-50 acres) to make sure you see the differences first-hand. There are significant differences among varieties, so it is important to consider disease resistance, maturity, seed supply, and anticipated planting dates as well as the primary consideration of pod yields and grade.

The potentially devastating effects of tomato spotted wilt virus (TSWV) in the southeast makes variety choice very important. Compared to previous years, TSWV was more prevalent and severe in the 2005 growing season. All of the factors that create favorable conditions for TSWV are not known, but we do know that variety resistance is one of the most effective control measures. Among the tests grown in Florida, TSWV is most severe in Marianna, so variety performance in that location will give a good indication of the TSWV resistance of a given variety. Results often are very different between Marianna, Gainesville, and Jay, depending on TSWV and other disease pressure. The varieties that are most resistant to TSWV are AP-3, C-99R, Hull, Carver, ANorden, Andru II, Georgia Green, Virugard, Georgia 01R, Georgia 02C, Georgia 03L, VC-2 and Gregory, based on Florida data, and the University of Georgia TSWV Risk Index.

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2. B. L. Tillman, assistant professor, Agronomy Department, North Florida Research and Education Center--Marianna, FL; D. W. Gorbet, professor, Agronomy Department, North Florida Research and Education Center--Marianna, FL; H. C. Wood, OPS technical, Agronomy Department; M. W. Gomillion, biological scientist, North Florida Research and Education Center--Marianna, FL; J. McKinney, biological scientist; Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL 32611.

This report provides data from University of Florida trials conducted at Gainesville (Citra), Marianna, and Jay research centers from 2002-2005. Tests in Marianna and Gainesville were grown mostly with irrigation and the tests at Jay are not irrigated. All tests are managed for optimum production, including the use of pesticides to control various pests. In furrow insecticides (Temik or Thimet) were used in Gainesville and Jay, but not in Marianna.

2005 Results

Pod yields, TSMK (total sound mature kernels) percentage, maturity and TSWV ratings for tests at three locations in Florida in 2005 are reported in Table 1. Each entry was harvested (dug) at their apparent optimum maturity stage (i.e., E = 125-130 days after planting [DAP]; M = 133-139 DAP; L = 145-155 DAP). TSWV ratings were on a 1-10 scale, where 1 = no disease and 10 = all plants with severe damage or dying.

Only two early/medium early varieties are available for production, Andru II and Virugard. In our tests, Andru II has had the highest pod yield of those two. Averaged over all three locations, the medium maturing varieties Georgia 03L, AT3085A, AP-3, and AT3081B had higher pod yield than Georgia Green in 2005. All of these but AT3081B had less TSWV than Georgia Green as well. Among the late maturing varieties, Georgia 01R and C-99R had excellent pod yields and good grade in 2005. Both of these have very good resistance to TSWV and leafspot.

Four-year results

The performance of runner market-type varieties in Florida over the past four years (2002-2005) is shown in Table 2. Among the medium maturity cultivars tested over the past 4 years, AP-3 has demonstrated excellent pod yields, good TSMK percentage, and the best resistance to TSWV. In 2 years of testing, Georgia 03L has had very good pod yields, TSMK and good TSWV resistance. Both of these cultivars appear to have higher yield and better resistance to TSWV than Georgia Green. Yield, TSWV resistance and TSMK were similar among the late maturing cultivars Georgia 01R and C-99R.

The performance of Virginia market-type varieties in Florida over the past four years (2002-2005) is shown in Table 3. All of these varieties are more susceptible to TSWV and if they contract the disease, yield losses could be substantial. Pod yield of VAC92R, VC2, NCV-11, and Gregory were similar and more than the pod yield of NC-12C.

Location Results

The pod yield of peanut cultivars grown in three locations in Florida is shown in Table 4. In general, the highest yielding entries in one location also did well in the other locations. Yields are generally lower in Jay, Florida because the peanuts are not irrigated. Pod yields in Gainesville are generally higher because tomato spotted wilt virus is very mild. In Marianna, yields can be severely limited by tomato spotted wilt virus so usually the most resistant varieties have the highest yield. TSWV pressure was much greater in Marianna in 2005 compared to 2004.

What varieties have the best resistance to TSWV and other diseases?

Disease resistance is a very important factor in choosing a variety. The reaction of several peanut varieties to some diseases that are present in Florida is presented in Table 5. In order to optimize the benefit of these varieties, it is important to chose based on their disease resistance. From this table, it is relatively easy to find a variety with the right disease package for your situation. If white mold is a problem in some of your fields, AP-3, C-99R, or Georgia-01R would be good choices. Similarly, if you are interested in a late maturing variety, C-99R, Georgia 01R , and Tifrunner have good leafspot resistance and could allow a reduction in the frequency of fungicide sprays needed for leafspot compared to susceptible varieties.

Summary

Variety choice is a critical management decision for peanut production. There are many choices among varieties suitable for production in the Southeastern US with good to excellent resistance to TSWV. Several of these varieties also have

resistance to other diseases. Growing these varieties can reduce your risk and production cost. The varieties C-99R, DP-1, Hull, and Georgia 01R all have considerable resistance to leafspot allowing you to reduce fungicide sprays and therefore production costs. Some of the cultivars have good resistance to soil-borne diseases such as white mold (*S. rolfsii)* (C-99R, DP-1, Hull, & AP-3) and CBR (Georgia 01R, Georgia 02C, and Carver). Further information on these traits is available from the University of Florida Plant Protection Pointers web page (http://plantpath.ifas.ufl.edu/takextpub/ExtPubs/ppp1205.pdf) and the University of Georgia Disease Index (University of Georgia Cooperative Extension Service, 2005 Peanut Update, CSS-05-0118, pp. 41-57 or on the web at: http://www.ugapeanuts.com/).

In choosing a variety, it is our advice to evaluate your production and marketing situation and make arrangements for seed of the varieties that best fit your needs. Seed supplies for some of the new cultivars (AP-3, Carver, and Georgia-03L) will be very limited in 2006.

Table 1. Performance of peanut varieties in three locations in Florida in 2005. Varieties are sorted by market type, maturity and then yield in descending order.

Name	Market Type*	Maturity**	Pod Yield (lbs./A)				TSWV (1-10)†			TSMK (%)		
			MR‡	JY‡	GV‡	AVG.	MR	GV	AVG.	MR	GV	AVG.
Andru II††	R	ME	2239	1765	3285	2430	5.2	2.7	3.9	66.1	75.5	70.8
Virugard	R	E	2052	1236	3094	2127	5.8	2.7	4.3	74.8	68.5	71.6
Georgia-03L	R	M	3198	2943	5637	3926	5.5	2.0	3.8	74.0	75.1	74.5
AT3085A††	R	M	3298	2510	4020	3276	3.3	2.7	3.0	75.7	70.1	72.9
AP-3	R	M	3417	2639	3475	3177	2.8	3.7	3.3	72.2	71.1	71.6
AT3081B	R	M	2807	2388	3501	2899	5.5	3.3	4.4	71.8	67.6	69.7
ANorden††	R	M	2336	2410	2865	2537	5.8	4.3	5.1	73.0	65.7	69.3
Georgia Green	R	M	1736	2100	3333	2390	7.0	2.3	4.7	74.0	73.8	73.9
Carver	R	M	1997	1471	3491	2320	4.8	4.0	4.4	72.1	70.6	71.4
AT201††	R	M	1420	2175	3278	2291	8.3	2.7	5.5	73.7	71.2	72.4
Florunner	R	M	894	1342	2981	1739	7.8	6.0	6.9	71.0	72.3	71.6
SunOleic 97R††	R	M	1055	1126	2626	1603	8.2	5.0	6.6	68.7	68.9	68.8
C-99R	R	L	4046	3875	4401	4107	2.3	3.3	2.8	74.9	75.7	75.3
Georgia-01R††	R	L	3636	3162	5105	3968	3.8	2.7	3.3	75.2	78.6	76.9
Hull††	R	L	3359	2433	3611	3134	5.0	3.3	4.2	73.4	73.8	73.6
Georgia-02C††	R	L	2581	3078	3607	3089	5.0	3.0	4.0	76.4	75.6	76.0
VC2††	V	E	2285	1868	3859	2671	4.8	4.0	4.4	70.9	73.0	72.0
NCV11	V	E	2114	1717	3985	2605	5.8	4.3	5.1	69.7	67.6	68.7
VAC92R	V	E	2249	1707	3775	2577	5.3	4.3	4.8	70.1	68.4	69.2
Gregory	V	ME	2055	1568	3688	2437	5.0	3.7	4.3	67.4	72.2	69.8
NC12C	V	E	1739	1497	3252	2163	6.0	5.3	5.7	71.7	71.5	71.6
C.V			12	16	16	16	18.7	29.4	23.1	1.9	2.8	2.4
LSD			427	520	808	351	1.3	1.4	0.9	2.3	3.5	2.1

*Market Type: R=runner, V=virginia; **Maturity: E = early, M = medium, L = late; †Tomato Spotted Wilt Virus ratings (1-10, 1 = no disease); ††High oleic oil chemistry; ‡Locations: MR=Marianna, JY=Jay, GV=Gainesville (Planting Dates: MR=5/11, JY=5/14, GV=4/15)

Table 2. Performance of runner market-type peanut varieties in two or three Florida locations over the past four years (2002-2005). Entries are sorted by maturity and the four year average yield (in descending order).

Name	Maturity*	YIELD lbs./acre				TSMK %				TSWV*** 1-10			
		2005	2-YR†	3-YR††	4-YR†††	2005	2-YR	3-YR	4-YR	2005	2-YR	3-YR	4-YR
Andru II**	ME	2430	3124	3264	3358	70.8	71.5	71.7	72.9	3.9	3.0	2.8	2.9
Virugard	E	2127	2734	2849	2935	71.6	74.3	75.5	75.9	4.3	3.3	3.3	3.3
AP-3	M	3177	3950	4094	4162	71.6	72.5	73.0	73.9	3.3	2.4	2.1	2.2
Carver	M	2320	3272	3519	3595	71.4	73.6	73.6	74.2	4.4	3.2	3.0	3.1
Georgia Green	M	2390	3263	3407	3450	73.9	75.4	76.5	77.0	4.7	3.7	3.4	3.4
ANorden**	M	2537	3165	3350	3428	69.3	71.6	72.5	73.0	5.1	3.9	3.5	3.4
AT201**	M	2291	2973	3070	3103	72.4	75.0	75.7	76.3	5.5	4.3	4.5	4.5
Florunner	M	1739	2357	2461	2569	71.6	72.9	74.1	72.9	6.9	5.4	5.1	4.8
SunOleic 97R**	M	1603	2260	2340	2450	68.8	71.0	73.0	73.9	6.6	5.6	5.5	5.2
Georgia-03L	M	3926	4255			74.5	74.8			3.8	3.1		
AT3085A**	M	3276				72.9				3.0			
AT3081B	M	2899				69.7				4.4			
Georgia-01R	L	3968	4426	4600	4631	76.9	78.2	78.7	79.6	3.3	2.3	2.1	2.1
C-99R	L	4107	4478	4458	4349	75.3	76.1	76.5	77.2	2.8	2.2	2.2	2.2
DP-1	L	3320	3875	3983	3953	73.6	74.7	74.7	75.3	2.7	2.0	1.9	2.0
Hull**	L	3134	3678	3780	3579	73.6	74.7	74.9	75.6	4.2	3.1	2.9	2.8
Southern Runner	L	2706	3280	3452	3436	72.9	74.4	75.1	75.2	5.0	3.6	3.3	3.2
Georgia-02C**	L	3089	3660	3647		76.0	77.4	77.4		4.0	2.9	2.6	
C.V.		16	13	13	13	2.4	1.9	1.8	1.9	23.1	22.3	22.4	20.7
LSD		351	276	239	209	2.1	1.2	0.9	0.8	0.9	0.5	0.4	0.3

*Maturity: E = early, M = medium, L = late; **High oleic oil chemistry. †2 YR= average of 2004 and 2005, ††3 YR= average of 2003, 2004 and 2005; †††4 YR= average of 2002, 2003, 2004 and 2005. ***Tomato Spotted Wilt Virus ratings (1-10, 1 = no disease)

Table 3. Performance of Virginia market-type peanut varieties in two or three Florida locations over the past four years (2002-2005). Entries are sorted by maturity and the four year average yield (in descending order).

Name	Maturity*	YIELD (lbs./acre)				TSMK (%)				TSWV (1-10)***			
		2005	2-YR†	3-YR††	4-YR†††	2005	2-YR	3-YR	4-YR	2005	2-YR	3-YR	4-YR
NCV11	E	2605	3193	3397	3497	68.7	70.8	71.5	72.1	5.1	4.4	4.1	4.0
VAC92R	E	2577	3406	3517	3520	69.2	72.0	72.7	73.1	4.8	3.8	3.6	3.7
NC12C	E	2163	2811	2899	3016	71.6	73.6	74.2	75.0	5.7	4.4	4.2	4.0
Gregory	ME	2437	3189	3399	3465	69.8	70.7	71.5	72.4	4.3	3.7	3.6	3.5
VC2**	E	2671	3317	3418	3508	72.0	72.4	73.1	73.8	4.4	3.8	3.4	3.5
C.V.		16	13	13	13	2.4	1.9	1.8	1.9	23.1	22.3	22.4	20.7
LSD		351	276	239	209	2.1	1.2	0.9	0.8	0.9	0.5	0.4	0.3

*Maturity: E = early, M = medium, L = late; **High oleic oil chemistry. †2 YR= average of 2004 and 2005, ††3 YR= average of 2003, 2004 and 2005; †††4 YR= average of 2002, 2003, 2004 and 2005. ***Tomato Spotted Wilt Virus ratings (1-10, 1 = no disease)

Table 4. Pod yield of peanut varieties in three Florida locations. Entries are sorted by market type, maturity and the average yield in Marianna in descending order.

Name	Maturity*	Market-type***	Pod Yield (lbs./acre)												
			Marianna (MR)					Jay (JY)			Gainesville (GV)				
			2002	2003	2004	2005	MR Average	2004	2005	JY Average	2002	2003	2004	2005	GV Average
Andru II**	ME	R	2396	2869	4569	2239	3018	1529	1765	1647	5070	4501	5356	3285	4553
Virugard	E	R	1839	2103	3863	2052	2464	1462	1236	1349	4719	4284	4695	3094	4198
AP-3	M	R	3884	3957	5953	3417	4303	2455	2639	2547	4985	5094	5760	3475	4829
Carver	M	R	2178	3201	4863	1997	3060	2097	1471	1784	5627	5317	5711	3491	5037
ANorden**	M	R	2360	2890	4392	2336	2994	1923	2410	2167	5118	4919	5066	2865	4492
Georgia Green	M	R	1561	2525	4904	1736	2682	1888	2100	1994	5687	5154	5614	3333	4947
AT201	M	R	1307	2104	4411	1420	2311	1584	2175	1880	5167	4614	4969	3278	4507
SunOleic 97R**	M	R	1380	1400	3246	1055	1770	1374	1126	1250	4404	3760	4130	2626	3730
Florunner	M	R	1016	1650	2807	894	1592	1387	1342	1365	4985	3896	4727	2981	4147
Georgia-03L	M	R			5576	3198	4387	2936	2943	2940			5243	5637	5440
AT3085A**	M	R				3298	3298		2510	2510				4020	4020

Table 4. Pod yield of peanut varieties in three Florida locations. Entries are sorted by market type, maturity and the average yield in Marianna in descending order.

Name	Maturity*	Market-type***	Pod Yield (lbs./acre)												
			Marianna (MR)					Jay (JY)			Gainesville (GV)				
			2002	2003	2004	2005	MR Average	2004	2005	JY Average	2002	2003	2004	2005	GV Average
AT3081B	M	R				2807	2807		2388	2388				3501	3501
Georgia-01R	L	R	3255	4400	5766	3636	4264	3275	3162	3219	6256	5841	5615	5105	5704
C99-R	L	R	2456	3620	5679	4046	3950	3507	3875	3691	5373	5178	5356	4401	5077
DP-1	L	R	2831	3294	5766	3378	3817	2681	2882	2782	4828	5325	4840	3701	4674
Hull**	L	R	2420	3645	5130	3359	3639	2262	2433	2347	3134	4525	5276	3611	4136
Southern Runner	L	R	1610	2893	4711	2223	2859	2381	2753	2567	5130	5046	4469	3143	4447
Georgia-02C**	L	R		2983	5105	2581	3556	2520	3078	2799		4234	5066	3607	4302
VAC92R	E	V	2159	2982	4904	2249	3073	1558	1707	1633	4913	4712	6244	3775	4911
VC2**	E	V	2522	2962	4459	2285	3057	1930	1868	1899	5215	4477	5502	3859	4763
Gregory	ME	V	2262	3084	4214	2055	2904	1959	1568	1764	5203	4974	5647	3688	4878
NCV11	E	V	2218	2888	3769	2114	2747	1817	1717	1767	5578	5128	5760	3985	5113
NC12C	E	V	2070	2431	3721	1739	2490	1752	1497	1625	4901	3896	4904	3252	4238

*E = early, M = medium, L = late; **High oleic oil chemistry; *** R=runner, V=virginia market type

Table 5. Disease resistance of major peanut varieties in the southeastern U.S. Fewer points = better resistance.

Variety [1]	Spotted Wilt Points	Leaf Spot Points	White mold points
SunOleic 97R [2]	50	30	30
Flavorunner 458 [2]	50	not rated	not rated
NC-V 11	35	30	25
NC12C	35	not rated	not rated
AT-201 [2]	35	30	20
Georgia Green	30	20	20
Virugard	30	25	20
Gregory	30	30	20
VC2	30	not rated	not rated
Anorden [2]	25	25	25
Andru II [2]	25	30	20
C-99R [4]	20	15	15
Hull [2]	20	10	15
Carver [3]	20	30	20
GA03L	15	15	10
GA02C [2,3]	15	20	10
GA01R [3]	10	10	15
DP1 [4]	10	5	10
AP3 [4]	10	25	10
Tifrunner	10	15	25

Adapted from the 2006 University of Georgia Disease Risk Index.

1-Adequate research data is not available for all varieties with regards to all diseases. Additional varieties will be included as data to support the assignment of an index value are available.

2-High oleic variety.

3-Varieties Carver, GA-02C, and GA-01R have increased resistance to Cylindrocladium black rot (CBR) than do other varieties commonly planted in Georgia.

4-Varieties AP3, DP1, and C-99R are less resistant to CBR and are not recommended for fields where this disease is a problem.