

'AP-4', a Medium Maturity, Large Seeded Peanut Variety with Resistance to Tomato Spotted Wilt¹

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The 'AP-4' peanut variety was developed by the University of Florida, Institute of Food and Agricultural Sciences, North Florida Research and Education Center near Marianna, Florida. This variety was released in 2007 based on its competitive pod yield and excellent seed grade—total sound mature kernel percentage (TSMK).

AP-4 has demonstrated very good pod yield potential in Florida tests. Over three locations and three years (2006, 2007 and 2008), pod yield of AP-4 was greater than for 'Georgia Green', 'Georgia-03L', and 'AP-3'. (See Table 1.) The TSMK percentage of AP-4 was greater than that of AP-3, but similar to Georgia-03L and Georgia Green, which is known for excellent grade potential. (See Table 1.)

Additionally, AP-4 has good resistance to tomato spotted wilt virus (TSWV). Disease ratings of TSWV in AP-4 were similar to those of AP-3, which is known to have good resistance to TSWV. However, disease ratings of TSWV in AP-4 were less than those for Georgia Green or for Georgia-03L.



Figure 1. In this 2007 photo, 'AP-4' is pictured growing on the Florida's Foundation Seed Producers' Farm near the University of Florida's North Florida Research and Education Center in Marianna, Fla. Credits: Tom Stadslev, FFSP/IFAS/UF

In regards to resistance to white mold, AP-4 has moderate resistant while AP-3 is known to have very good resistance to white mold. Georgia Green is less resistant to white mold than are either AP-4 or AP-3. In two years of testing in Marianna, Florida, AP-4 lost an average of 44 percent of its pod yield in plots inoculated with *S. rolfisii* compared to AP-4 pod yield in plots not inoculated. In these trials AP-4's pod-yield loss was intermediate compared to the

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losses experienced by AP-3 (34 percent loss) and Georgia Green (77 percent loss). However, AP-4's pod-yield loss was similar in these trials to losses in Georgia-03L (45 percent loss).

Plants of AP-4 have a prostrate growth habit with a semi-prominent main stem typical of runner cultivars. The testa of AP-4 seeds is tan in color. In Florida under irrigation, AP-4 requires approximately 135 days after planting to mature and is considered to have medium relative maturity.

The seed weight of AP-4 is larger than the historical runner market-type. The five-year average weight of 100 AP-4 seeds (70.3g) exceeds that of Georgia Green (56.9g) and AP-3 (63.5g), but is similar to Georgia-03L (71.5g), another large-seeded runner type. Large seed have implications for the proportion of various seed sizes from the grading process. Compared to the typical runner-type cultivar Georgia Green, AP-4 had fewer medium (37.9 percent vs. 46.1 percent) and more jumbo (29.6 percent vs. 18.3 percent) kernels in five years of testing.

Seed production of AP-4 is governed by the Plant Variety Protection Act (PVP); AP-4 seed can be produced and sold only as a class of certified seed and only by companies licensed by Florida Foundation Seed Producers, Inc. Birdsong Peanuts, Inc., Suffolk, Virginia, holds the exclusive license to produce and sell registered and certified classes of AP-4 seed.

Table 1. Performance of Runner Market-Type Peanut Varieties in Two or Three Florida Locations over the Three-Year Period -- 2006, 2007 and 2008. (Entries are sorted by maturity and the three-year average yield in descending order.)

Name	Maturity*	Pod Yield (lbs./A)			TSMK % (grade)			TSWV /(1-10)***		
		2008	2-YR [†]	3-YR ^{††}	2008	2-YR	3-YR	2008	2-YR	3-YR
Andru II**	ME	4265	4098	4076	73.5	74.2	74.7	2.1	3.6	3.4
Virugard	ME	3965	3579	3878	77.4	77.9	77.3	2.8	4.4	4.1
Florida-07**	M	5563	5061	5127	76.1	76.2	76.8	1.9	2.0	2.1
Georgia-03L	M	4980	4177	4287	74.8	76.2	76.5	1.6	2.7	3.0
AT3085A**	M	5087	4411	4489	75.7	75.6	75.7	1.2	2.9	2.9
AP-3	M	5023	4313	4336	74.6	74.9	74.5	1.4	2.4	2.4
McCloud**	M	5145	4274	4248	76.9	77.4	76.7	1.3	2.4	2.6
AT3081R	M	5354	4345	4220	75.4	75.5	75.2	1.4	3.0	3.3
Carver	M	5463	4447	4411	77.9	77.2	77.2	1.4	2.8	2.7
Georgia Green	M	4895	4228	4066	78.9	78.3	78.1	1.8	3.0	3.5
AP-4	M	5456	4907	4743	77.0	77.0	77.4	1.7	2.4	2.5
Georgia-06G	M	5832	4893		80.6	80.3		1.8	2.6	
Georgia Greener	M	5350	4862		79.3	79.7		1.9	2.4	
Georgia-07W	M	5781			78.3			1.4		
C-99R	L	4870	4434	4423	77.7	78.1	77.1	1.8	2.6	2.6
Georgia-01R	L	4296	4083	4383	78.9	79.1	79.0	1.3	1.8	1.9
York**	L	4679	4261	4348	75.3	75.0	74.9	1.3	1.8	1.9
Georgia-02C**	L	4626	4205	4316	80.7	80.6	80.8	1.7	2.2	2.2
C.V.		12	15	14	2.1	1.9	2.4	38.0	36.5	33.3
LSD		479	505	354	1.9	1.2	1.3	0.5	0.6	0.4

* E = early; M = medium, and L = late.

** High oleic oil chemistry.

*** Tomato Spotted Wilt Virus ratings (1-10, 1 = no disease).

[†] 2 YR = average of 2006 and 2007.

^{††} 3 YR = average of 2006, 2007 and 2008.