

PEANUT VARIETY TESTS, 1955

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This circular reports the results of seven cooperative variety tests conducted in 1955. It should be emphasized that this is an annual progress report and that one year's data should not form the basis for selecting the best variety. Varieties included in these cooperative trials had been screened in preliminary tests carried on at the main stations at Perkins and Stratford. The average performance of varieties over a period of years is reported in Mimeograph Circular M-275.

Experimental Methods and Conditions

The soils testing laboratory at Oklahoma A. & M. College tested soil samples obtained at four locations. Results are shown in Table 2. Uniform soils were selected for the test areas.

The rows of the test plots were arranged to match those of the cooperators. Each test contained four replications. All experimental variety tests were planted with a V-belt hand planter at the rate of 3 to 5 viable seed per foot. In the irrigated test at Lookeba, water was applied by sprinkler irrigation at the discretion of the cooperator. Cooperators cultivated the plots in the same manner as they did their own peanut.

The plots located at Atwood, Bokchita, and Lookeba were dug and the plants counted as they were turned by hand. After curing, the plants were threshed using a Lilliston peanut picker modified for plot work. After hay and nut weights were recorded, approximately one-half pound samples were placed in moisture cans for further study. The remaining nuts were composited and left with the growers. All yields were adjusted to clean, air-dried, unshelled peanuts per plot.

The peanuts in the plots at Achille, Heavener, and Stidham were dug, allowed to wilt, then bundled and transported to Stillwater, where they were allowed to dry and subsequently were threshed. After threshing, the nuts were cleaned and weighed. The total weight of the nuts was subtracted from the total weight to obtain the yield of hay. Acre yields were calculated by dividing the plot yield by the fraction of an acre occupied by each plot.

The stands at each location were good to excellent, with the exception of Achille where poor stands resulted for each variety except Spantex and Spanish 18-38. At locations other than Achille the stands for Argentine and Spanish 18-38 were slightly less, hence the yields for Argentine and Spanish 18-38 are probably conservative.

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TABLE 1--Summary of Cooperators and Details of Peanut Tests, 1955

Cooperator	County and Nearest Town	Rows per Plot	Size of Plot*		Date Planted
			Row Length (feet)	Row Width (inches)	
J. H. Cox, grower John Stogner, Co. Ag.	Bryan Achille	2	19	36	6-4-55
Bill Worthy, grower L. R. Prentice, Voc. Ag.	Bryan Bokchito	2	19	36	5-4-55
C. H. Black, grower Jesse Barbre, Co. Ag. Jim Steed, Assoc. Co. Ag.	Hughes Atwood	2	50	40	6-3-55
Carrol Smith, grower L. Tripp, Ass't Co. Ag.	Caddo Lookeba	2	50	38	5-31-55
Vernon Emmerson, Voc. Ag.	McIntosh Stidham	2	19	40	5-17-55
Minert Bohannon, Foreman Soil Improvement Station	LeFlore Heavener	2	19	42	5-17-55

* At harvest one foot or more was trimmed from the end of each row to eliminate end border effect.

TABLE 2--Results of Soil Tests on Samples from Test Plots
at Achille, Lookeba, and Stidham

Location	Acidity (pH)	Nitrogen (percent)	Available Phosphorus (pounds/acre)	Available Potassium (pounds/acre)
Achille	6.9 (neutral)	0.043	25 (medium)	168 (medium)
Lookeba (irrigated)	5.7 (mod. acid)	0.060	25 (medium)	520 (high)
Lookeba (non-irrig.)	6.1 (sl. acid)	0.035	17 (low)	248 (high)
Stidham	7.1 (neutral)	0.060	43 (medium)	80 (low)

Cercospora leaf spot disease was observed at each location but was most serious at Achille, Atwood, Bokchita, and Lookeba locations. All varieties at each location appeared to possess about the same degree of infection.

The varieties at each location appeared to show no difference in insect damage to the foliage. However, damage was most severe in the tests at Achille, Atwood, and Bokchita. Good insect control was obtained at Lookeba by spraying.

The Bokchita test was purposely planted about three weeks earlier than normal. The varieties in the test matured early, but because of heavy rainfall in late September the harvest was delayed and the yields of each variety were low as a result of sprout damage and of pods remaining in the soil.

An excessive amount of rainfall at Lookeba immediately before harvest caused considerable soil to cling to the pods in the irrigated test, which was on an area that had been deep plowed the previous year.

A detailed study of the nut samples from each plot indicated that each variety had approximately the same amount of soil clinging to the pods.

Yield of Nuts

The average yields of unshelled clean nuts per acre for each variety grown are shown in Table 3. Argentine yields averaged three percent higher than the average of two check varieties, Local Spanish and Stratford Spanish, even though the number of plants per foot was slightly lower for Argentine. During the growing season the Argentine plants tended to fill the spaces when competitive adjacent plants are not present.

Dixie Spanish yields averaged one percent higher than the average of the checks.

The yields for Spantex and Spanish 18-38 were 6 and 10 percent lower than the average of the check varieties.

The average yield of the eight varieties in the irrigated test at Lookeba was 42 percent higher than the yield of the same eight varieties in the non-irrigated test at that location.

Yield of Hay

The average yields of hay in tons per acre for each variety are summarized in Table 4. At six locations Argentine produced five percent more hay than the average of Local Spanish and Stratford Spanish. The average hay yields for Spantex, Dixie Spanish and Spanish 18-38 were slightly less the average of the checks.

At Lookeba, the hay yields for the irrigated test were 59 percent higher than in the non-irrigated test.

TABLE 3--Average Yield of Unshelled, Clean, Air-dried Nuts; Cooperative Peanut Variety Trials, 1955
(Pounds per Acre)

	Achille	Atwood	Bokchita	Heavner	Lookeba		Stidham	Average ^{1/} six locations	Percen- ^{2/} tage of checks
					Irrig.	Non-Irr.			
Argentine	1634	2776	1559	1447	3543	2647	809	2130	103
Spantex		2625	1575	1270	3515	2194	514	1948	94
Dixie Spanish ^{3/}		2714	1898	1418	3850	1925	805	2102	101
Spanish 18-38	1066	2458	1358	1182	3722	1924	551	1870	90
Local Spanish	1180	2789	1672	1449	3796	2014	798	2086	
Stratford Span.		2645	1699	1262	3958	2229	611	2067	
Av. Local & Strat. Sp.		2717	1686	1356	3877	2121	704	2076	100
Spanish 13-10	1259								
Spanish 205	1214	2722			3125	1954			
Imp. Span. 2-B	1452								
Texas 26	1392	2598			3918	2091			

^{1/} The yields at Achille were not included in the average because of erratic stand

^{2/} Seed of Local Spanish and Stratford Spanish were obtained from growers and are considered to be equivalent to seed planted by the better growers. The average yields for Local and Stratford Spanish were used as check varieties in the variety tests.

^{3/} A sister strain, Spanish 146-1-1-48-4, was used instead of Dixie Spanish at Bokchita, Heavener, and Stidham because of inadequate seed supplies.

Kernel Characteristics

The averages for six varieties with respect to size groups, uniformity, proportion of No. 1 kernels, shelling percentage, and number of seed per pound are summarized for the locations at Atwood, Bokchita, and Lookeba (non-irrigated) in Table 5.

Argentine and Dixie Spanish had 74.3 and 76.4 percent of their kernels riding the 18/64- and 20/64-inch slotted screens. Spantex, Spanish 18-38 and the two check varieties had between 67.3 and 69.8 percent of their kernels riding on the 16/64- and 18/64-inch slotted screens. A high proportion of kernels with a 4/64-inch spread indicates good uniformity.

Argentine and Dixie Spanish had slightly more No.1 kernels than Spantex, Spanish 18-38, or the check varieties.

The average shelling percentage of samples obtained from three locations was 5 percent less for Argentine than for Spanish 18-38 and the average of the check varieties. Dixie Spanish with 73.6 percent had the highest shelling percentage in these tests. Results of more extensive testing show the shelling percentage of Argentine compares more closely to that of Spantex than was the case in these tests.

The average number of seed per pound indicates the relative size of kernels, which is an important consideration when determining the rate of planting.

TABLE 4. --- Average Hay Yields; Cooperative Peanut Variety Trials, 1955.

(Tons per acre)

	Achille	Atwood	Bokchita	Heavner	Lookeba		Stidham	6 Average	^{1/} Locations
					Irrig.	Non-Irr.			
Argentine	4.0	2.7	1.3	1.8	3.2	1.2	1.2	2.2	
Spantex	2.2	2.6	1.2	2.1	3.0	1.2	1.2	1.9	
Dixie Spanish 146		2.5	1.7	1.8	3.1	1.2	1.3	1.9	
Spanish 18-38	1.8	2.6	1.7	2.1	2.8	1.2	1.4	1.8	
Local Spanish	3.4	2.8	1.5	2.0	3.5	1.5	1.1	2.3	
Stratford Spanish		2.7	1.5	2.1	3.2	1.5	1.3	2.0	
Av. Local & Strat. Span.		2.8	1.5	2.1	3.4	1.5	1.2	2.1	
Spanish 13-10	1.8								
Spanish 205	1.9	2.4			3.2	1.2			
Imp. Span. 2-B	1.9								
Texas 26	2.6	3.0			3.4	1.7			

^{1/} Hay yields at Achille were not included in the average because of erratic stand.

TABLE 5. --- Kernel Characteristics of Varieties (Summarized from Appendix Table 1).

	Kernel Size Groups					Pct. within 4/64	Pct. of no.1 kernels	Shelling Pct.	No. of seed per lb.
	20/64 in.	18/64 in.	16/64 in.	14/64 in.	Smaller than 14/64				
Argentine	53.3	21.0	16.0	6.7	1.8	74.3	98.2	68.7	1106
Spantex	21.5	31.7	35.7	8.3	2.8	67.3	97.2	71.1	1299
Dixie Spanish	50.7	25.7	17.2	4.6	2.1	76.4	97.9	73.6	1092
Spanish 18-38	17.4	28.6	39.3	11.8	3.1	67.9	96.9	72.1	1412
Local Spanish	12.9	29.0	42.7	11.8	3.3	71.7	96.7	72.0	1402
Stratford Spanish	14.0	27.9	40.5	15.8	3.0	68.4	97.0	71.9	1375
Av. Local & Strat. Span.						69.8	96.9	72.0	

1/ See footnote to Appendix Table 1.

APPENDIX TABLE 1. -- A Summary of Kernel Characteristics Determined from Samples Obtained from Each plot at Atwood, Bokchita, and Lookeba (non-irrigated); 1955.

LOCATION and VARIETY	Kernel Size Groups				Smaller than 14/64-	Pct. within 4/64-	Pct. of No. 1 kernels	Shell. Percen tage	No. seed per lb.
	20/64 in.	18/64 in.	16/64 in.	14/64 in.					
ATWOOD									
Argentine	42.3	13.1	21.5	21.8	1.0	55.4	99.0	62.0	1148
Spantex	17.1	34.9	37.3	8.1	2.5	72.2	97.5	73.9	1315
Dixie Spanish	56.4	22.1	15.3	4.5	2.1	78.5	97.9	75.0	1077
Spanish 18-38	16.8	27.8	41.1	11.3	3.1	68.9	96.9	74.0	1387
Local Spanish	11.6	30.1	43.6	11.5	3.0	73.7	97.0	76.1	1379
Stratford Spanish	13.4	27.1	43.3	12.5	3.8	70.4	96.2	73.8	1358
BOKCHITA									
Argentine	50.6	25.5	18.4	4.2	1.2	76.1	98.8	72.6	1114
Spantex	24.7	24.1	35.9	11.3	3.8	60.0	96.2	67.6	1342
Dixie Spanish	39.5	29.1	23.4	5.8	2.4	68.6	97.6	73.0	1126
Spanish 18-38	11.9	25.8	42.3	16.1	4.2	68.1	95.8	71.1	1580
Local Spanish	11.1	24.9	44.0	15.9	4.2	68.9	95.8	71.3	1512
Stratford Spanish	10.2	23.1	44.0	17.3	3.7	67.1	96.3	71.4	1482

APPENDIX TABLE 1. (continued)

LOCATION and VARIETY	Kernel Size Group				Smaller than 14/64	Pct. within 4/64	Pct. of No. 1 kernels	Shell. Percen tage	No. seed per lb.
	20/64 in.	18/64 in.	16/64 in.	14/64 in.					
LOOKEBA (Non-irrigated)									
Argentine	67.2	20.7	8.1	2.7	1.4	87.9	98.6	71.5	1055
Spantex	22.7	36.1	33.8	5.4	2.1	69.9	97.9	71.9	1239
Dixie Spanish	56.2	25.9	12.9	3.4	1.8	82.1	98.2	72.7	1075
Spanish 18-38	23.4	32.1	34.5	7.9	2.1	66.6	97.9	71.3	1267
Local Spanish	16.7	32.0	40.6	8.0	2.8	72.6	97.2	68.8	1315
Stratford Spanish	18.4	33.6	39.2	7.6	1.4	72.8	98.4	70.5	1281

^{1/} The kernel size groups represent the average proportion of kernels in four samples for each variety that remained on slotted screens with openings 20/64, 18/64, 16/64, and 14/64-inch in width by 3/4-inch long.