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Vegetable Variety Trials, 1982¹

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VEGETABLE VARIETY and breeding line trials were conducted during 1982 at the Gulf Coast Substation, Fairhope, Chilton Area Horticulture Substation, Clanton, North Alabama Horticulture Substation, Cullman, Sand Mountain Substation, Crossville, and E.V. Smith Research Center, Shorter. All trials were conducted in randomized complete block designs with four replications. Non-replicated observational plantings were also made of selected varieties and lines of tomato. Recommended weed control practices and fertilizer applications were used for each crop and location. Recommended insect and disease control measures were applied on a regular schedule throughout the growing

¹Data presented in this report represent an unbiased evaluation of each entry. Variety, company, and chemical names are used for identification and do not imply endorsement of one over the other. Seed of breeding lines are not available for planting until named and released.

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season. Sprinkler irrigation was applied at the Gulf Coast Substation to potatoes and tomatoes, at Chilton Area Horticulture Substation to tomatoes and sweet potatoes, and at the E.V. Smith Research Center to sweet potatoes. Trickle irrigation was applied to tomatoes at the North Alabama Horticulture Substation. Irrigation was applied only when needed.

RESULTS

Potatoes

FAIRHOPE. Seed potatoes were obtained from Frito-Lay Company (Baldwin County, Alabama); V&G Vasek, E. Grand Forks, Minnesota; Capp Farms, Walhalla, North Dakota; J&P Lysengen, St. Thomas, North Dakota; Starks Farms, Rhinelander, Wisconsin; University of Wisconsin Potato Research Farm, Rhinelander, Wisconsin; and the USDA, Beltsville, Maryland, for the 1982 trials.

Seedpieces were cut by hand to approximately 1½ ounces each and treated with Orthocide 10 dust at the rate of 1 pound to 100 pounds of cut seed. Seedpieces were stored above 50°F for approximately 10-12 days, planted February 23 in 38-inch rows, and harvested June 3. Red La Soda from

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Capp Farms was the highest yielding entry and also produced the highest yield of size A potatoes, table 1. Frito-Lay 1455 was the highest yielding entry from Frito-Lay. Frito-Lay 1291 and 1152 also produced good yields of size A potatoes. University of Wisconsin line 760 has produced good yields of high solids potatoes for the past 3 years. Atlantic, from two sources, produced good yields and high solids. Atlantic may produce internal browning when soil temperatures at maturity exceed 90°F. This variety may be used in the fresh market trade and for chip processing. Early digging of Atlantic in some years may reduce the yield but will ensure high quality potatoes for the grower. Belchip and Chipbelle yields were lower this year than in 1981. However, both of these are good yielding varieties and with high total solids. Bel Rus, a new russet variety from the USDA, produced 133 cwt. of very attractive potatoes with high solids, however, this variety does not size properly under dry growing conditions. Bel Rus produced the lowest percent of size A potatoes. Russet Sebago and Superior were the two lowest yielding varieties. Superior produces a very weak plant that will succumb under hot conditions.

Atlantic was rated excellent (5.0) for eye appeal and had the highest rating for eye appeal of the white varieties tested, table 2. Bel Rus, a russet skin type, was also rated excellent (5.0) for eye appeal. Red La Soda, the only red variety in the trial, was rated 4.5 for eye appeal. Bel Rus has a long shape and small eye size and depth.

CROSSVILLE. Frito-Lay 1455, 1291, and 657 produced the highest yields of total marketable, size A, and percent size A potatoes, table 3. Red La Soda, from two sources, produced 184 and 174 cwt. per acre of total marketable potatoes. La Chipper, Belchip, and Atlantic produced only fair yields of size A potatoes. Norchip, Kennebec, and Superior produced low yields of marketable potatoes. All varieties produced high yields of size B potatoes. Inadequate rainfall during May and June perhaps accounts for the reduced overall yields and the higher yields of B size. Bel Rus produced 50 percent size B potatoes of the total yield. This variety does not produce high yields or size A potatoes under drought stress conditions. Wisconsin 760 produced the highest specific gravity of all the entries. Frito-Lay 1455 was second highest for specific gravity. All varieties had specific gravity readings that were only fair to poor this year. All varieties had above 80 percent stand counts at harvest, except Superior and Bel Rus.

Sweet Potatoes

SHORTER. Plants for the variety trials were produced at the E.V. Smith Research Center, Shorter, Alabama. Seed potatoes were soaked for 1 minute in a solution containing 8 ounces of Mertect 340 F and ½ pound of Botran 75 WP in 7½ gallons of water, before bedding in an electrically heated bed. Transplants were harvested as they became ready and lined out in the field. Varieties were transplanted on May 20 and harvested October 19 at Shorter, a total of 153 growing days. Centennial and Jewel were used as check varieties for evaluating the other entries. Red Jewel and Centennial produced the highest yields of total marketable roots, 680 and 679 bushels per acre, respectively, table 4. Resisto, a new release from the USDA Vegetable Laboratory, Charleston, South Carolina, produced 658 bushels of total market-

able roots. This variety has good resistance to several soil insects and stem rot, and it produces a good yield of sprouts. The skin is slightly rough. Resisto has good canning and baking qualities. NC 172 produced a good yield of total marketable and U.S. No. 1 roots. This line is in the Alabama Sweet Potato Foundation Seed Improvement program and will be released by the Department of Horticulture, North Carolina State University, as a named variety in cooperation with Auburn University. Eureka, a new release from the LSU Sweet Potato program, has a high level of soil rot resistance. This variety performs well at Shorter, but produces high yields of canning size roots. Travis produced slightly lower yields than Eureka this year. It has a higher level of soil rot resistance than Eureka and appears to be better suited for Alabama sweet potato areas. Travis will produce high yields of jumbo roots, however, this problem may be controlled somewhat by early harvesting or closer plant spacing in the row. In 1982, Porto Rico produced the highest yield that has been recorded for this variety. This selection of Porto Rico is highly susceptible to stem rot. Pope, a new release from the North Carolina State Sweet Potato program, has not yielded as well as Jewel, but Pope does have the ability to tolerate wet soils in September and October better than Jewel. Eureka produced the highest yield of canner size roots, and Jewel produced the highest yield of jumbo roots. Resisto produced the highest percentage of U.S. No. 1 roots. Cull yields were low for most entries.

CLANTON. Centennial and Jewel were the two highest yielding entries, producing 475 and 441 bushels, respectively, of total marketable roots, table 4. Travis produced well also and this variety is highly resistant to soil rot. Porto Rico produced the lowest yield of all entries. Jewel produced the highest yield of U.S. No. 1 roots, Centennial produced the highest yield of canner size roots, and Red Jewel produced the highest yield of jumbo size roots. Eureka produced the highest percentage of U.S. No. 1 roots. Cull yields were low at Clanton.

Jewel is the most widely adapted variety for the Alabama sweet potato producing area. Jewel has a high level of resistance to root knot nematode, stem rot, and internal cork. Jewel has a low level of tolerance for wet soils late in the growing season. Jewel, also, is susceptible to surface fusarium disease. This disorder can be managed with good curing and storage techniques. NC 172 is well adapted to all of the Alabama sweet potato producing areas. This line has excellent skin color, storage, and handling qualities and remains very attractive on the shelf for 3-4 weeks in most markets. The flesh color of NC 172 is lighter orange than Jewel.

Tomatoes

FAIRHOPE. Seed were planted in the greenhouse at Auburn University February 25 and transplanted April 6 at a 15-inch spacing in 5-foot rows. Eleven harvests were made beginning June 8 and ending July 13. Duke was the highest yielding entry, producing 560 cwt. of marketable fruit per acre, table 5. Duke is jointless and is resistant to race 2 fusarium wilt disease. Hayslip, a new variety from the University of Florida, was second highest yielding, producing 529 cwt. per acre. It is jointless and has race 2 fusarium wilt resistance. Sunny, a new release from Asgrow,

was the third highest yielding variety. Big Set, Four Way Hybrid, and Flora-Dade produced above 500 cwt. per acre of marketable fruits. Early Cascade is a small fruited variety, however, at Fairhope it will produce some 5 x 6 and 6 x 6 size fruits. It is very productive and well adapted to the Baldwin County area. Burgis, a new variety from the University of Florida, produced a good yield of total marketable and 5 x 6 size fruits. It is jointless and has resistance to race 2 fusarium wilt. Other new Florida releases, 1A, 1B, 1C, and 2432 are very determinate in growth habit, and do not produce enough foliage to prevent sunscald. Florida line 2432 is not uniform for plant type. These four varieties are not jointless, but are resistant to race 2 fusarium wilt. Observational entry PSR 38179 produced the highest yield of the observational entries, 596 cwt. per acre of total marketable fruits. Champion VFNT is a new release from Petoseed and has resistance to tobacco mosaic virus. It produced a good yield of marketable fruits.

Duke produced the highest yield of 5 x 6 fruits in the replicated trial. Auburn 76 FMN produced the highest yield of 6 x 6 size fruits. Early Cascade produced the highest yield of 6 x 7 size fruits of all the entries. Cull yields were highest for Winner, Better Boy VFN, Duke, and Florida 2432 in the replicated trial. Catfacing accounted for a large part of the cull yields. Early Cascade produced the highest percent of blossom end-rot (BER) culls in the replicated trial and PSR 20878 in the observational selections.

Bigset, Early Cascade, Florida 1C, 1A, and 2432, and PSR 20878 produced the earliest harvest, table 6. Duke produced the earliest peak harvest on June 18 and was harvested for the remainder of the harvest season. Winner produced the latest peak harvest over four peak harvests beginning June 25 and ending July 6. Several other varieties had more than one peak harvest. Fourteen varieties produced one or more peak harvests on June 29. All the entries were harvested until July 13. Early Cascade and Better Boy VFN produced the tallest plants, table 7. Burgis produced the shortest plants. All varieties produced red fruits except for Early Cascade which produced some pink fruits. Bigset, Bonnie Nematode Resistant, and Florida 2432 produced fruits that were globe shape, whereas all other entries were either deep globe or oblate. Twelve varieties produced very firm fruits. Ten varieties were rated smooth for eye appeal. Seven varieties were rated as commercial shipping types and others were rated for home garden or roadside and other direct marketing.

CLANTON. Seed were planted in the greenhouse at Auburn University March 8 and transplanted April 13 at a 15-inch spacing in 8-foot rows. Nine harvests were made beginning June 25 and ending August 19. Four Way Hybrid produced the highest yield of marketable fruits, 739 cwt. per acre, table 8. Flora-Dade produced the second highest marketable yield, 720 cwt. per acre. Count, Monte Carlo, Pole King Hybrid, and Sunny produced above 600 cwt. of marketable fruits. The new Florida varieties performed well at Clanton, however, Florida 1A was the lowest yielding variety in the trial. Four Way Hybrid produced the highest yield of 5 x 6 fruits, Count produced the highest yield of 6 x 6 fruits, and Bonnie Nematode Resistant produced the highest yield of 6 x 7 fruits. Bonnie Nematode Resistant produced the highest yield of culls and Flora-Dade produced

the lowest yield of culls. Culls were mainly from catfacing and blossom end-rot. Florida 1A, 1B, and 1C produced the lowest yields of BER fruits. These lines may have some tolerance to this disorder. All but two varieties were harvested at the first picking on June 25, table 9. Champion VFNT produced the first peak harvest on June 30. All varieties had more than one peak harvest and three varieties had peak harvest on the last harvest date.

Pole King Hybrid produced the tallest plant, table 10. Hayslip, Burgis, Florida 2432, and Florida 1C produced fruits of mixed shape. Nine varieties produced very firm fruit and 10 varieties were rated smooth for eye appeal. Twelve varieties were rated as commercial shipping types. However, careful study should be given to all varieties before they are planted for commercial shipping. Plant types are very important for producing high quality shipping tomatoes.

CULLMAN. Seed were planted in the greenhouse at Auburn University on March 25, and transplanted on May 5, at a 15-inch spacing in 5-foot rows. Thirteen harvests were made beginning July 8 and ending August 19. Early Cascade produced the highest yield of marketable fruits in the replicated trial, table 11. This variety is small fruited and produced only a limited yield large enough for standard marketable sizes. Of the large fruited varieties, Sunny (Asgrow XPH 674) produced the highest yield of the replicated entries. Big Girl and Better Boy VFN were the next highest yielding. Four Way Hybrid, Flora-Dade, Floramerica, Tempo, and Hayslip produced above 600 cwt. per acre of marketable fruits. Of the Florida entries, Flora-Dade produced the highest yield, Hayslip and Burgis were next highest, and Florida 2432 was the lowest yielding. In the observational trial, Early Bush 76 produced the highest yield of all the entries this year, 837 cwt. per acre, and Pole King Hybrid was a close second for total marketable yield. President and Champion VFNT, new varieties from Petoseed, produced good yields of marketable fruits. PSR 121275 produced the lowest yield in the observational trial. In the replicated test, Floramerica produced the highest yield of 5 x 6 fruits, Flora-Dade produced the highest yield of 6 x 6 fruits, and AU 76 FMN produced the highest yield of 6 x 7 size fruits. In the observational trial, Early Bush 76 produced 528 cwt. of 5 x 6 fruits, Pole King Hybrid produced 465 cwt. of 6 x 6 fruits, and Vista Hybrid produced 90 cwt. of 6 x 7 fruits. Cull yields were unusual this year in that no cracks or BER fruits were produced by the replicated entries. The bulk of the cull production was from small fruits that would not fit into the standard size arrangements.

Florida 2432, Early Bush 76, Champion VFNT, PSR 38179, and PSR 121275 were the earliest maturing varieties, table 12. AU 76 FMN and Early Cascade were the latest maturing varieties. Early Cascade produced only five harvests this year and had a peak and final harvest on August 2. The short season for this variety is unusual. Sunny, Four Way Hybrid, and Hayslip produced the latest peak harvests, August 9. The number of peak harvests were variable for all the entries with some having four peak harvests and others having only one. PSR 20878 finished producing on August 9. Pole King Hybrid, AU 76 FMN, and Early Cascade produced the tallest plants and Florida 2432 and Florida 1A produced the shortest plants, table 13. Florida 1A, 1B, 1C,

and 2432 did not produce adequate foliage for good fruit cover. Florida 2432 developed a poor plant type that was variable in height. Flora-Dade, Hayslip, Burgis, and Florida 1A produced fruits that were mixed for shape. Nine varieties in the replicated trial were rated very firm. None of the observational entries was rated very firm. Nine selections in the replicated and four in the observational trials were rated smooth for eye appeal. Seven varieties were rated as commercial shipping types in the replicated trial and none in the observational trial. While Florida 2432, 1A, 1B, Burgis, and Hayslip were rated as commercial shipping types, careful consideration should be given toward these varieties before commercial plantings are made. Their best asset for shipping is firmness. While Flora-Dade was somewhat rough this year, it remains one of the best commercial shipping varieties for Alabama. Walter Villemaire was rated very good as a shipping tomato.

In all trial locations, those varieties designated "3" would have potential for all three suggested uses, tables 7, 10, 13. However, entries rated home garden and roadside use ("1" and "2") should be studied carefully before any plantings are made for commercial shipping.

TABLE 1. YIELD, SPECIFIC GRAVITY, AND STAND COUNT FOR POTATO VARIETY TRIAL, FAIRHOPE, 1982¹

Variety and seed source	Marketable yield/acre			Size A of total	Specific gravity	Stand at harvest
	Total	Size A ²	Size B			
	Cwt.	Cwt.	Cwt.	Pct.	Pct.	
Red La Soda (Capp Farms, Walhalla, N. Dak.)	270	257	13	95	1.058	75
FL 1455 (Frito-Lay)	260	253	7	97	1.076	93
FL 1291 (Frito-Lay)	254	239	15	94	1.065	89
FL 1152 (Frito-Lay)	251	236	15	94	1.060	91
W 760 (U. Wisconsin, Rhinelander)	233	222	11	95	1.077	77
Atlantic (Starks Farms)	214	205	9	96	1.072	85
Atlantic (USDA)	203	193	10	95	1.079	79
Red La Soda (J&P Lysengen, St. Thomas, N. Dak.)	195	182	13	93	1.058	92
Belchip (USDA)	183	174	9	95	1.062	81
Chipbelle (USDA)	181	166	15	92	1.077	89
Belchip (Starks Farms)	171	163	8	95	1.066	70
Norchip (A&G Vasek, E. Grand Forks, Minn.)	161	152	9	94	1.066	78
Bel Rus (Starks Farms)	133	118	15	89	1.076	93
Russet Sebago (Starks Farms)	119	110	9	92	1.058	72
Superior (Starks Farms)	115	105	10	91	1.069	72

¹Soil test: P = 100(M); K = 110(H); pH = 6.1. Mean soil temperatures for growing season (F): February, high 62, low 52; March, high 76, low 57; April, high 79, low 67; May, high 90, low 74; June 1-3, high 92, low 78. Rainfall data for growing season (inches): February 9.58; March 7.84; April 2.90; May 1.64; June 1-3, 1.15.

²Size A = potatoes with 1 1/8 inches diameter and larger; size B = potatoes with 1 1/2 to 1 3/8 inches diameter.

TABLE 2. CHARACTERISTICS OF POTATO VARIETIES, FAIRHOPE, 1982¹

Variety and seed source	Shape	Skin color ²	Eye size ³	Eye depth ⁴	Eye appeal ⁵
Red La Soda (Capp Farms, Walhalla, N. Dak.)	Round	Red	L	M	4.5
FL 1455 (Frito-Lay)	R-flat	Wh	S	S	3.5
FL 1291 (Frito-Lay)	Round	Wh	S	S	3.0
FL 1152 (Frito-Lay)	Round	Wh	M	M	3.0
W 760 (U. Wisconsin, Rhinelander)	Round	Wh/SR	S	S	3.5
Atlantic (Starks Farms)	Round	Wh/SR	S	S	5.0
Atlantic (USDA)	Round	Wh/SR	S	S	5.0
Red La Soda (J&P Lysengen, St. Thomas, N. Dak.)	Round	Red	L	M	4.5
Belchip (USDA)	R-flat	Wh	M	M	3.5
Chipbelle (USDA)	R-long	Wh	S	S	3.5
Belchip (Starks Farms)	R-flat	Wh	M	M	3.5
Norchip (A&G Vasek, E. Grand Forks, Minn.)	Round	Wh	S	S	3.5
Bel Rus (Starks Farms)	Long	Russet	S	S	5.0
Russet Sebago (Starks Farms)	Round	Wh	S	S	3.0
Superior (Starks Farms)	Round	Wh	S	S	3.0

¹Soil test: p = 100(M); k = 110(H); pH = 6.1. Rainfall data for growing season (inches): February 9.58; March 7.84; April 2.90; May 1.64; June 1-3, 1.15. Mean soil temperatures for growing season (F): February, high 62, low 52; March, high 76, low 57; April, high 79, low 67; May, high 90, low 74; June 1-3, high 92, low 78.

²Skin color: Wh = white; SR = some russet.

³Eye size: S = small; M = medium; L = large.

⁴Eye depth: S = shallow; M = medium; D = deep.

⁵Eye appeal: 5 = excellent; 4 = good; 3 = poor; 2 = fair; 1 = very poor.

TABLE 3. YIELD, SPECIFIC GRAVITY, AND STAND COUNT FOR POTATO VARIETY TRIAL, CROSSVILLE, 1982¹

Variety and seed source	Marketable yield/acre			Size A of total	Specific gravity	Stand at harvest
	Total	Size A ²	Size B			
	Cwt.	Cwt.	Cwt.	Pct.	Pct.	
FL 1455 (Frito-Lay)	205	193	12	94	1.073	98
FL 1291 (Frito-Lay)	198	180	18	91	1.059	98
FL 657 (Frito-Lay)	195	182	13	93	1.053	97
W 760 (U. Wisconsin, Rhinelander)	186	158	28	85	1.074	96
Red La Soda (J&P Lysengen, St. Thomas, N. Dak.)	184	149	35	81	1.051	94
Red La Soda (Capp Farms, Walhalla, N. Dak.)	174	147	27	84	1.054	95
La Chipper	146	123	23	84	1.058	82
Belchip (Starks Farms)	142	121	21	85	1.055	93
Atlantic (Starks Farms)	140	107	33	76	1.067	81
Norchip (A&G Vasek, E. Grand Forks, Minn.)	123	100	23	81	1.063	89
Kennebec	119	105	14	88	1.053	83
Superior (Starks Farms)	101	79	22	78	1.059	79
Russet Sebago (Starks Farms)	76	62	14	82	1.050	81
Bel Rus (Starks Farms)	40	20	20	50	--	76

¹Soil test: P = 230(VH); K = 180(H); pH = 5.5. Rainfall data for growing season (inches): March 2.94; April 9.26; May 2.13; June 3.85; July 1-13, 1.10. Mean soil temperatures for growing season (F): March, high 58, low 45; April, high 63, low 52; May, high 81, low 65; June, high 86, low 71; July 1-13, high 90, low 76.

²Size A = potatoes with 1 1/8 inches diameter and larger; size B = potatoes with 1 1/2 to 1 3/8 inches diameter.

TABLE 4. YIELD AND SKIN COLOR FOR SWEET POTATO VARIETY TRIALS, SHORTER, CLANTON, 1982¹

Variety and seed source	Marketable yield/acre				No. 1's	Culls	Cracks	Skin color
	Total	No. 1's ²	Canners	Jumbos				
	Bu. ³	Bu.	Bu.	Bu.				
Shorter								
Red Jewel (Auburn)	680	439	65	176	65	27	31	Red
Centennial (LSU Chase)	679	429	86	164	63	9	26	Copper
Resisto (USDA)	658	523	92	43	79	34	53	Dark copper
Jewel (NCSU)	631	365	61	205	58	50	30	Copper
NC 172 (Auburn)	622	407	81	134	65	69	39	Light rose
Eureka (LSU Chase)	604	321	193	90	53	5	93	Light rose
Travis (LSU Chase)	582	354	45	183	61	25	52	Copper
Porto Rico (LSU Chase)	522	289	96	137	55	52	45	Light tan
Pope (NCSU)	480	327	138	15	68	0	15	Light tan
Clanton								
Centennial (LSU Chase)	475	276	113	86	58	5	49	-
Jewel (NCSU)	441	295	67	79	67	0	7	--
Travis (LSU Chase)	401	228	83	90	57	17	21	--
Red Jewel (Auburn)	392	235	48	109	60	19	11	--
Eureka (LSU Chase)	297	207	78	12	70	2	50	--
NC 172 (Auburn)	273	157	68	48	58	38	68	--
Pope (NCSU)	254	165	56	33	65	0	0	--
Porto Rico (LSU Chase)	156	90	60	6	58	55	65	--

¹Soil test: P = 140 (H); K = 160 (H); pH = 5.3. One ton limestone applied per acre.

²U.S. No. 1 - roots 2 to 3½ inches in diameter, length 3 to 9 inches, well-shaped and free of defects.

Canners - roots 1 to 2 inches in diameter, 2 to 7 inches in length.

Jumbos or oversize - roots that exceed the diameter, length, and weight requirements of the above two grades, but are of marketable quality.

Culls - roots 1 inch or larger in diameter and so misshapen or unattractive they could not fit as marketable root in any of the above three grades.

³Bushel = 50 pounds.

TABLE 5. YIELDS FOR STAKED FRESH MARKET TOMATO TRIAL, FAIRHOPE, 1982¹

Variety and seed source	Marketable yield/acre ²				Culls					
	Total ³	5 x 6 ⁴	6 x 6	6 x 7	Total	Total yield	Cracks	Cat-face	Blossom end-rot	Others ⁵
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Pct.	Pct.	Pct.	Pct.	Pct.
Replicated										
Duke (Petoseed)	560	520	34	6	130	19	20	62	6	12
Hayslip (U. Florida)	529	455	69	5	63	11	21	41	5	33
Sunny (Asgrow)	527	477	44	6	60	10	12	42	14	32
Bigset (Petoseed)	515	466	42	7	61	11	47	28	12	13
Four Way Hybrid (Four Way Farms)	514	469	43	2	54	10	27	30	6	37
Flora-Dade (Asgrow)	509	437	62	10	43	8	29	34	9	28
AU 76 FMN (Auburn U.)	492	344	124	24	38	7	39	32	8	21
Calypso (Petoseed)	482	400	66	16	71	13	28	50	6	16
Early Cascade (Petoseed)	466	109	123	234	20	4	13	24	30	33
Burgis (U. Florida)	465	405	55	5	58	12	27	45	11	17
Better Boy VFN (Petoseed)	457	426	30	1	137	30	45	43	6	6
Tempo (Asgrow)	453	388	52	13	85	16	29	45	8	18
Florida 1B (U. Florida)	440	408	25	7	33	7	29	46	6	19
Bonnie Nematode Resistant (Bonnie Farms)	415	333	62	20	40	9	17	28	21	34
Winner (Asgrow)	385	336	44	5	155	29	57	21	8	14
Florida 1C (U. Florida)	385	359	21	5	74	16	20	64	7	9
Florida 1A (U. Florida)	382	336	37	9	34	8	25	39	20	16
Florida 2432 (U. Florida)	361	320	37	4	106	23	8	63	22	7
Observational										
PSR 38179 (Petoseed)	506	471	28	7	174	26	36	50	9	5
Champion VFNT (Petoseed)	481	453	24	4	101	17	39	38	12	11
Pole King Hybrid (Twilley)	477	442	33	2	159	25	30	54	7	9
PSR 20878 (Petoseed)	434	418	14	2	112	21	20	26	52	2
PSR 121275 (Petoseed)	381	364	12	5	119	24	31	61	3	5
Vista Hybrid (Asgrow)	363	334	24	5	161	31	45	27	20	8

¹Soil test: P = 330 (VH); K = 160 (H); pH = 5.0. Two and one-half tons limestone applied per acre.

²Size yields reported here are in accordance with the size standards established by the USDA for the Los Angeles type lug arrangements.

5 x 6 arrangement: minimum diameter 2 1/16 inches, maximum diameter 3 3/16 inches.

6 x 6 arrangement: minimum diameter 2 5/16 inches, maximum diameter 2 1/4 inches.

6 x 7 arrangement: minimum diameter 2 1/16 inches, maximum diameter 2 1/2 inches.

³While fruits were graded as carefully as possible under field conditions, no rigid effort was made to grade for a strict U.S. No. 1 grade. Fruits were separated for cull conditions as reported here.

⁴Some fruits in this size arrangement were larger than standard sizes.

⁵Others were mostly tomatoes too small to be marketed in the above sizes. Some were culled because of rots, insect damage, mechanical damage, and misshapen fruits.

TABLE 6. HARVEST DATES FOR STAKED FRESH MARKET TOMATO TRIAL, FAIRHOPE, 1982

Variety and seed source	Harvest dates ¹										
	6/8	6/11	6/16	6/18	6/22	6/25	6/29	7/2	7/6	7/9	7/13
Replicated											
Duke (Petoseed)			X								
Hayslip (U. Florida)							X				
Sunny (Asgrow)						X	X				
Bigset (Petoseed)					X	X					
Four Way Hybrid (Four Way Farms)								X			
Flora-Dade (Asgrow)							X				
AU 76 FMN (Auburn U.)							X				
Calypso (Petoseed)					X	X	X				
Early Cascade (Petoseed)					X						
Burgis (U. Florida)							X				
Better Boy VFN (Petoseed)							X				
Tempo (Asgrow)						X					
Florida 1B (U. Florida)					X						
Bonnie Nematode Resistant (Bonnie Farms)					X	X					
Winner (Asgrow)						X	X	X	X		
Florida 1C (U. Florida)							X				
Florida 1A (U. Florida)					X	X	X				
Florida 2432 (U. Florida)						X					
Observational											
PSR 38179 (Petoseed)						X					
Champion VFNT (Petoseed)							X				
Pole King Hybrid (Twilley)							X				
PSR 20878 (Petoseed)					X						
PSR 121275 (Petoseed)					X						
Vista Hybrid (Asgrow)							X				

¹X indicates peak harvest date, the date at which the highest yield occurred. In some varieties, highest yield was approximately the same for two or more harvest dates.

TABLE 7. PLANT HEIGHT AND FRUIT CHARACTERISTICS OF TOMATO VARIETIES, FAIRHOPE, 1982

Variety and seed source	Plant height	Fruit characteristic			Eye appeal ³	Suggested use ⁴
		Color	Shape ¹	Firmness ²		
<i>In.</i>						
Replicated						
Duke (Petoseed)	26	Red	3	1	2	3
Hayslip (U. Florida)	36	Red	2	1	2	3
Sunny (Asgrow)	25	Red	3	1	2	3
Bigset (Petoseed)	28	Red	1	2	1	1,2
Four Way Hybrid (Four Way Farms)	41	Red	3	1	2	1,2
Flora-Dade (Asgrow)	29	Red	2	1	1	3
AU 76 FMN (Auburn U.)	43	Red	2	2	1	1,2
Calypso (Petoseed)	29	Red	2	1	1	3
Early Cascade (Petoseed)	48	Red & Pink	2	3	1	1,2
Burgis (U. Florida)	24	Red	2	1	1	3
Better Boy VFN (Petoseed)	48	Red	3	3	2	1,2
Tempo (Asgrow)	26	Red	2	2	2	1,2
Florida 1B (U. Florida)	28	Red	3	1	2	1,2
Bonnie Nematode Resistant (Bonnie Farms)	29	Red	1	2	2	1,2
Winner (Asgrow)	28	Red	3	3	2	1,2
Florida 1C (U. Florida)	28	Red	3	1	2	1,2
Florida 1A (U. Florida)	26	Red	3	1	2	1,2
Florida 2432 (U. Florida)	28	Red	1	1	2	1
Observational						
PSR 38179 (Petoseed)	34	Red	2	2	1	1,2
Champion VFNT (Petoseed)	47	Red	2	3	1	1
Pole King Hybrid (Twilley)	46	Red	2	3	1	1
PSR 20878 (Petoseed)	33	Red	3	2	2	1,2
PSR 121275 (Petoseed)	26	Red	3	3	2	1
Vista Hybrid (Asgrow)	39	Red	2	1	1	3

¹Shape rating: 1 = globe, 2 = deep globe, 3 = oblate, 4 = deep oblate, 5 = mixed.

²Firmness rating: 1 = very firm, 2 = firm, 3 = soft.

³Appearance rating: 1 = smooth, 2 = slightly rough, 3 = rough.

⁴Use rating: 1 = home garden, 2 = roadside and other direct marketing, 3 = commercial shipping.

TABLE 8. YIELDS FOR STAKED FRESH MARKET TOMATO TRIAL, CLANTON, 1982¹

Variety and seed source	Marketable yield/acre ²				Culls					
	Total ³	5 x 6 ⁴	6 x 6	6 x 7	Total	Total yield	Cracks	Cat-face	Blossom end-rot	Others ⁵
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Pct.	Pct.	Pct.	Pct.	Pct.
Four Way Hybrid (Four Way Farms)	739	565	120	54	142	16	27	25	44	4
Flora-Dade (U. Florida)	720	510	161	49	84	10	7	33	50	10
Count (Petoseed)	697	447	188	62	110	14	7	32	50	11
Monte Carlo (Petoseed)	671	478	126	67	197	23	17	37	42	4
Pole King Hybrid (Twilley)	661	540	76	45	164	20	25	26	43	6
Sunny (Asgrow)	649	527	88	34	135	17	10	38	46	6
Hayslip (U. Florida)	599	449	117	33	116	16	16	35	44	5
Champion VFNT (Petoseed)	581	441	88	52	200	26	40	25	29	6
Bonnie Nematode Resistant (Bonnie Farms)	555	362	122	71	214	28	16	29	44	11
Burgis (U. Florida)	501	353	102	46	112	18	19	27	46	8
Duke (Petoseed)	488	382	74	32	158	17	37	25	34	4
Vista (Asgrow)	487	355	89	43	139	24	16	46	31	7
Florida 2432 (U. Florida)	432	251	131	50	140	24	5	61	24	10
Florida 1C (U. Florida)	424	353	50	21	161	28	14	70	8	8
Florida 1B (U. Florida)	403	347	45	11	128	24	11	64	9	16
Florida 1A (U. Florida)	376	306	52	18	155	29	4	75	6	15

¹Soil test: P = 250 (VH); K = 150 (H); pH = 5.9. One ton limestone applied per acre.

²Size yields reported here are in accordance with the size standards established by the USDA for the Los Angeles type lug arrangements.

5 x 6 arrangement: minimum diameter 2 1/16 inches, maximum 3 3/16 inches.

6 x 6 arrangement: minimum diameter 2 3/16 inches, maximum 2 1/2 inches.

6 x 7 arrangement: minimum diameter 2 1/2 inches, maximum 2 19/16 inches.

³While fruits were graded as carefully as possible under field conditions, no rigid effort was made to grade for a U.S. No. 1 grade. Fruits were separated for cull conditions as reported here.

⁴Some fruits in this size arrangement were larger than standard sizes.

⁵Others were mostly tomatoes too small to be marketed in the above sizes. Some were culled because of rots, insect damage, mechanical damage, and misshapen fruits.

TABLE 9. HARVEST DATES FOR STAKED FRESH MARKET TOMATO TRIAL, CLANTON, 1982

Variety and seed source	Harvest Dates ¹									
	6/25	6/30	7/7	7/13	7/19	7/26	8/3	8/9	8/19	
Four Way Hybrid (Four Way Farms)				X	X	X	X			X
Flora-Dade (U. Florida)			X	X	X	X				
Count (Petoseed)			X	X	X	X				
Monte Carlo (Petoseed)			X	X	X	X				X
Pole King Hybrid (Twilley)				X	X	X				X
Sunny (Asgrow)			X	X	X	X				
Hayslip (U. Florida)			X	X	X	X				
Champion VFNT (Petoseed)		X	X	X						
Bonnie Nematode Resistant (Bonnie Farms)			X	X	X					
Burgis (U. Florida)			X	X	X					
Duke (Petoseed)			X	X	X					
Vista (Asgrow)				X	X					
Florida 2432 (U. Florida)			X	X	X					
Florida 1C (U. Florida)				X	X	X				
Florida 1B (U. Florida)			X	X		X				
Florida 1A (U. Florida)			X	X						

¹X indicates peak harvest date, the date at which the highest yield occurred. In some varieties, highest yield was approximately the same for two or more harvest dates.

TABLE 10. PLANT HEIGHT AND FRUIT CHARACTERISTICS OF TOMATO VARIETIES, CLANTON, 1982

Variety and seed source	Plant height	Fruit characteristics			Eye appeal ³	Suggested use ⁴
		Color	Shape ¹	Firmness ²		
	<i>In.</i>					
Four Way Hybrid (Four Way Farms)	48	Red	2	2	1	3
Flora-Dade (U. Florida)	30	Red	2	1	1	3
Count (Petoseed)	35	Red	2	1	1	3
Monte Carlo (Petoseed)	50	Red	2	3	2	1,2
Pole King Hybrid (Twilley)	51	Red	2	2	1	1,2
Sunny (Asgrow)	30	Red	2	2	1	3
Hayslip (U. Florida)	40	Red	5	1	1	3
Champion VFNT (Petoseed)	46	Red	3	3	2	1,2
Bonnie Nematode Resistant (Bonnie Farms)	30	Red	2	3	1	1,2
Burgis (U. Florida)	30	Red	5	1	1	3
Duke (Petoseed)	30	Red	2	3	1	3
Vista (Asgrow)	42	Red	2	1	1	3
Florida 2432 (U. Florida)	28	Red	5	1	2	3
Florida 1C (U. Florida)	30	Red	5	1	2	3
Florida 1B (U. Florida)	27	Red	3	1	2	3
Florida 1A (U. Florida)	25	Red	3	1	2	3

¹Shape rating: 1 = globe, 2 = deep globe, 3 = oblate, 4 = deep oblate, 5 = mixed.

²Firmness rating: 1 = very firm, 2 = firm, 3 = soft.

³Appearance rating: 1 = smooth, 2 = slightly rough, 3 = rough.

⁴Use rating: 1 = home garden, 2 = roadside and other direct marketing, 3 = commercial shipping.

TABLE 11. YIELDS FOR STAKED FRESH MARKET TOMATO TRIAL, CULLMAN, 1982¹

Variety and seed source	Marketable yield/acre ²				Culls					
	Total ³	5 x 6 ⁴	6 x 6	6 x 7	Total	Total yield	Cracks	Cat-face	Blossom end-rot	Others ⁵
	<i>Cwt.</i>	<i>Cwt.</i>	<i>Cwt.</i>	<i>Cwt.</i>	<i>Cwt.</i>	<i>Pct.</i>	<i>Pct.</i>	<i>Pct.</i>	<i>Pct.</i>	<i>Pct.</i>
Replicated										
Sunny (Asgrow)	726	167	471	88	139	16	0	25	0	75
Big Girl (Burpee)	714	294	400	20	86	11	0	40	0	60
Better Boy VFN (Petoseed)	710	205	458	47	91	11	0	18	0	82
Four Way Hybrid (Four Way Farms)	686	180	461	45	76	10	0	21	0	79
Flora-Dade (U. Florida)	629	60	478	91	160	20	0	10	0	90
Floramerica (Twilley)	627	318	287	22	138	18	0	20	0	80
Tempo (Asgrow)	613	134	397	82	208	25	0	23	0	77
Hayslip (U. Florida)	609	152	395	62	113	16	0	13	0	87
Burgis (U. Florida)	591	121	397	73	161	21	0	9	0	91
Bonnie Nematode Resistant (Bonnie Farms)	576	104	384	88	216	27	0	9	0	91
Florida 1B (U. Florida)	534	257	260	17	105	16	0	25	0	75
Florida 1C (U. Florida)	525	210	266	49	166	24	0	25	0	75
Duke (Petoseed)	512	138	310	64	163	24	0	20	0	80
Walter Villemaire (Petoseed)	505	70	335	100	249	33	0	10	0	90
AU 76 FMN (Auburn U.)	490	31	328	131	213	30	0	10	0	90
Florida 1A (U. Florida)	439	192	218	29	118	21	0	31	0	69
Florida 2432 (U. Florida)	413	62	284	68	145	26	0	28	0	72
Early Cascade (Petoseed)	810 ⁶	33	46	47	--	--	--	--	--	--
Observational										
Early Bush 76 (Petoseed)	837	528	282	27	106	11	1	32	0	67
Pole King Hybrid (Twilley)	830	345	465	20	63	7	0	25	0	75
Vista Hybrid (Asgrow)	686	177	419	90	201	23	0	19	0	81
President (Petoseed)	681	259	381	42	190	22	0	30	0	70
Champion VFNT (Petoseed)	649	274	317	59	128	16	8	31	1	60
PSR 38179 (Petoseed)	546	159	310	77	134	20	0	9	0	91
PSR 20878 (Petoseed)	462	117	275	71	154	25	0	28	0	72
PSR 121275 (Petoseed)	421	160	212	49	99	19	0	23	0	77

¹Soil test: P = 330 (VH); K = 160 (H); pH = 5.0. Two and one-half tons limestone applied per acre.

²Size yields reported here are in accordance with the size standards established by the USDA for the Los Angeles type lug arrangements.

5 x 6 arrangement: minimum diameter 2 $\frac{1}{16}$ inches, maximum diameter 3 $\frac{3}{16}$ inches.

6 x 6 arrangement: minimum diameter 2 $\frac{3}{16}$ inches, maximum diameter 2 $\frac{1}{2}$ inches.

6 x 7 arrangement: minimum diameter 2 $\frac{1}{16}$ inches, maximum diameter 2 $\frac{1}{16}$ inches.

³While fruits were graded as carefully as possible under field conditions, no rigid effort was made to grade for a strict U.S. No. 1 grade. Fruits were separated for cull conditions as reported here.

⁴Some fruits in this size arrangement were larger than standard sizes.

⁵Others were mostly tomatoes too small to be marketed in the above sizes. Some were culled because of rots, insect damage, mechanical damage, and misshapen fruits.

⁶Fruits of this variety averaged between 1 and 2 inches in diameter. A limited yield of marketable size fruits was harvested.

TABLE 12. HARVEST DATES FOR STAKED FRESH MARKET TOMATO TRIAL, CULLMAN, 1982

Variety and seed source	Harvest dates ¹												
	7/8	7/12	7/15	7/19	7/21	7/26	7/29	8/2	8/5	8/9	8/12	8/16	8/19
Replicated													
Sunny (Asgrow)							X	X	X	X			
Big Girl (Burpee)						X	X	X					
Better Boy VFN (Petoseed)							X	X	X				
Four Way Hybrid (Four Way Farms)							X	X		X			
Flora-Dade (U. Florida)							X	X					
Floramerica (Twilley)							X	X					
Tempo (Asgrow)						X	X	X					
Hayslip (U. Florida)								X		X			
Burgis (U. Florida)							X	X					
Bonnie Nematode Resistant (Bonnie Farms)													
Florida 1B (U. Florida)						X	X	X					
Florida 1C (U. Florida)								X					
Duke (Petoseed)							X	X					
Walter Villemaire (Petoseed)							X	X					
AU 76 FMN (Auburn U.)						X							
Florida 1A (U. Florida)								X					
Florida 2432 (U. Florida)						X							
Early Cascade (Petoseed)								X					
Observational													
Early Bush 76 (Petoseed)							X	X					
Pole King Hybrid (Twilley)							X		X				
Vista Hybrid (Asgrow)							X	X	X				
President (Petoseed)						X	X	X					
Champion VFNT (Petoseed)						X		X					
PS 38179 (Petoseed)						X	X	X					
PSR 20878 (Petoseed)						X	X						
PSR 121275 (Petoseed)						X							

¹X indicates peak harvest date, the date at which the highest yield occurred. In some varieties, highest yield was approximately the same for two or more harvest dates.

TABLE 13. PLANT HEIGHT AND FRUIT CHARACTERISTICS OF TOMATO VARIETIES, CULLMAN, 1982

Variety and seed source	Plant height In.	Fruit characteristics			Eye appeal ³	Suggested use ⁴
		Color	Shape ¹	Firmness ²		
Replicated						
Sunny (Asgrow)	37	Red	2	1	1	2
Big Girl (Burpee)	38	Red	2	3	2	1
Better Boy VFN (Petoseed)	46	Red	3	3	2	1
Four Way Hybrid (Four Way Farms)	52	Red	2	1	2	3
Flora-Dade (U. Florida)	36	Red	5	1	2	2
Floramerica (Twilley)	28	Red	2	2	2	2
Tempo (Asgrow)	32	Red	2	2	1	2
Hayslip (U. Florida)	41	Red	5	1	1	3
Burgis (U. Florida)	28	Red	5	2	1	3
Bonnie Nematode Resistant (Bonnie Farms)	42	Red	3	3	3	1
Florida 1B (U. Florida)	24	Red	3	1	1	3
Florida 1C (U. Florida)	30	Red	3	2	2	2
Duke (Petoseed)	24	Red	2	2	2	2
Walter Villemaire (Petoseed)	24	Red	2	1	1	3
AU 76 FMN (Auburn U.)	57	Red	2	3	1	1
Florida 1A (U. Florida)	18	Red	5	1	2	3
Florida 2432 (U. Florida)	17	Red	2	1	1	3
Early Cascade (Petoseed)	54	Red	2	1	1	1,2
Observational						
Early Bush 76 (Petoseed)	38	Red	3	2	1	2
Pole King Hybrid (Twilley)	60	Red	2	2	1	2
Vista Hybrid (Asgrow)	36	Red	1	3	1	1
President (Petoseed)	33	Red	3	3	2	1
Champion VFNT (Petoseed)	49	Red	3	3	2	1
PSR 38179 (Petoseed)	33	Red	3	2	2	2
PSR 20878 (Petoseed)	28	Red	3	2	2	2
PSR 121275 (Petoseed)	28	Red	1	3	1	1

¹Shape rating: 1 = globe, 2 = deep globe, 3 = oblate, 4 = deep oblate, 5 = mixed.

²Firmness rating: 1 = very firm, 2 = firm, 3 = soft.

³Appearance rating: 1 = smooth, 2 = slightly rough, 3 = rough.

⁴Use rating: 1 = home garden, 2 = roadside and other direct marketing, 3 = commercial shipping.

Information contained herein is available to all without regard to race, color, sex, or national origin.