



Vegetable Variety Trials, 1984¹

J. L. Turner, H. M. Bryce, E. L. Carden, N. R. McDaniel, L. Wells,
F. E. Garrett, J. A. Pitts, K. C. Short, M. H. Hollingsworth,
J. T. Eason, M. E. Ruf, and W. H. Hearn²

VEGETABLE VARIETY and breeding line trials were conducted during the 1984 growing season 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. Herbicides and fertilizer applications were used for each crop and location in accordance with recommended production practices. Other pest controls were

also applied, using recommended chemicals on a regular schedule throughout the growing season. Irrigation was applied at the Gulf Coast Substation to potatoes, at the Chilton Area Horticulture Substation to sweet potatoes, and at the E. V. Smith Research Center to sweet potatoes. Trickle irrigation was applied to tomatoes at the Gulf Coast Substation, the Chilton Area Horticulture Substation, and the North Alabama Horticulture Substation.

RESULTS

Broccoli

FAIRHOPE. Seed were planted in the greenhouse at Auburn University July 9 and transplanted August 20 at a 15-inch spacing in 5-foot rows. Five harvests were made beginning October 8 and ending October 26. Green Duke and Gem were the two most uniform varieties for an early once-over harvest, table 1. Green Duke produced the most desirable bud with no leaves growing through the bud, while Gem

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 another. Seed of breeding lines are not available for planting until named and released.

²Respectively, Research Associate and Field Superintendent of Horticulture; Superintendent, Associate Superintendent, and Assistant Superintendent, Gulf Coast Substation; State Department of Agriculture and Industries (retired); Superintendent and Assistant Superintendent, Chilton Area Horticulture Substation; Superintendent, North Alabama Horticulture Substation; Superintendent and Associate Superintendent, Sand Mountain Substation; and Senior Systems Analyst, Research Data Analysis.



produced buds that had many leaves growing through the bud. Green Comet, Bravo, and Southern Comet were the earliest varieties with a large percentage of the buds maturing at the first harvest date. Premium Crop produced a few early buds but the bulk of the harvest was midseason. Futura, the latest maturing variety, and Orion were the two lowest yielding varieties. The poor yield of these two varieties was due mainly to their lateness and small bud size. Futura and Orion also produced many leaves in the bud. Of the varieties tested, Green Duke exhibited more desirable characteristics for market production. Bravo would be an ideal home garden variety that is early and productive.

Potatoes

Seed potatoes for the variety trials were obtained from producers in Minnesota, North Dakota, Wisconsin, and Canada.

FAIRHOPE. Seedpieces were cut by hand to approximately 1½ ounces each and treated with Orthocide 10 dust at the rate of 1 pound per 100 pounds of cut seed. Seedpieces were stored approximately 5-10 days at 50°F, planted March 12, and harvested June 12 (93 growing days). Red La Soda from the North Dakota source was the highest yielding entry, table 2. Atlantic, La Chipper, and W 946R produced similar total marketable yields. Atlantic has produced tubers with high dry matter content in the past, but in 1984 produced tubers with only 17.47 percent dry matter. A new red skin entry, L-18-119R, produced a good yield of tubers with good dry matter content. This line is from Louisiana State University and has promise for the Baldwin County potato producing area. Another line from LSU, L-01-38, is a white skin entry that has good dry matter content. Wisconsin 760 produced tubers with the highest dry matter of all the entries. This selection has produced high dry matter content at Fairhope for the past 3 years. Entries W 855, W 877, and W 870 produced tubers with above 20 percent dry matter content. Russet Sebago, Superior, and BelRus were the lowest yielding entries. To date, Russet skin varieties have generally been among the lowest yielding varieties at Fairhope. BelRus, in some years, will produce above 100 hundredweights per acre, however, this variety will also produce a high yield of size B potatoes. The russet skin of BelRus is attractive with an oblong shape similar to Russet Burbank.

CROSSVILLE. Seedpieces were cut March 20 and treated the same as those for Fairhope. Varieties were planted by hand April 12 and harvested July 20 (110 growing days). Red La Soda from the North Dakota seed source was the highest yielding entry, table 3. Atlantic and L-01-38 produced 196 hundredweights each, however Atlantic produced tubers with the highest dry matter content. L-01-38 is a new line from LSU that is showing promise for the Sand Mountain potato area. L-81-119R, a new red skin entry, produced 130 hundredweights whereas the lowest yielding Red La Soda entry produced 164 hundredweights. Red La Soda remains the best red skin potato for Alabama. Other red skin entries, W 946R and W949R, have produced erratic yields and have never out-yielded Red La Soda. W 949R does, however, have a higher dry matter percent than Red La Soda. Atlantic, Norchip, La

Chipper, and Kennebec remain the best white skin varieties for the Sand Mountain area. BelRus produced a poor yield. This is the most promising russet skin type potato to date for Alabama potato growing areas. Continued research is in progress to evaluate new russet releases and numbered selections for adaptation to Alabama.

Sweet Potatoes

Plants were produced at the E. V. Smith Research Center, Shorter, for each of the trial locations. Seed roots were soaked for 1 minute in a solution containing 8 ounces of Mertect 340 F and ½ pound of 75 WP Botran per 7½ gallons of solution. Mother roots were bedded in an electrically heated bed. Plants were harvested and lined out in the field as they were pulled from the bed.

SHORTER. Varieties were transplanted May 25 and harvested October 17 (146 growing days). Resisto, a new variety from the USDA Vegetable Laboratory, Charleston, South Carolina, produced the highest yield of total marketable roots, table 4. Resisto has a good level of root knot nematode resistance and is resistant to stem rot or fusarium wilt. The flesh color is dark orange and attractive as a baked potato. The dark copper skin of Resisto is somewhat rough to feel and tends to have a russet appearance in the storage house. Resisto also has a good level of resistance to some species of wireworms, flea beetles, and cucumber beetles. However, under no conditions should the use of approved chemicals for the control of nematodes and insects be omitted from the production procedures. Sumor, a white flesh variety, has good shape and yields have been good. Sumor will produce high yields of canners in some years; therefore, a long growing season should be provided for this variety. Centennial and Jewel are high quality sweet potatoes and have performed well over the years. Carolina Nugget is an excellent storage potato and has a very attractive rose skin and good shape. It has been in the foundation seed improvement program since 1981. Some progress has been made for selecting roots free of purple pigment and excessive white flesh. At present, three selections are under evaluation for improved flesh color.

CLANTON. Varieties were planted June 5 and harvested October 18 (136 growing days). Jewel was the highest yielding entry and also produced the highest yield of jumbo size roots. No explanation was found for this high yield of large size roots. Yields of most of the entries at Clanton were higher in canner and jumbo grades than at the other two locations. Three sources of plants of Jewel produced variable yield response. Jewel (Auburn plants) produced the highest yield of the three sources of plants. Carolina Nugget from two sources produced similar yields of total marketable roots, but the local source of plants produced higher yields of No. 1's than plants from the Auburn source. Also, Carolina Nugget (Auburn plants) produced the highest yield of culls but was followed closely by plants from the local source. Resisto produced the highest percent of U.S. No. 1 roots, while Jewel from Georgia and Auburn plants produced the lowest percent of No. 1 roots.

CROSSVILLE. Varieties were transplanted June 1 and harvested October 3 (125 growing days). Centennial produced

the highest yield of total marketable U.S. No. 1's and canners. Centennial also produced the lowest yield of culls. Cordner, a new variety from Texas, produced the second highest yield and equaled Jewel (Georgia plants) for the highest percent of No. 1 roots. Jewel (Auburn plants) produced 38 more marketable bushels than Jewel from Georgia plants. Auburn plants of Jewel produced higher marketable yields at each location when compared to other sources of plants for this variety. At Shorter, however, Auburn plants did not produce as well as any source of Jewel at Clanton or Crossville. Carolina Nugget produced a good yield and a higher percent of No. 1 roots. Porto Rico was the lowest yielding variety.

Tomatoes

FAIRHOPE. Seed were planted in the greenhouse at Auburn University February 26 and transplanted April 4 at a 15-inch spacing in 5-foot rows. Thirteen harvests were made beginning June 5 and ending July 17. Mountain Pride was the highest yielding variety in the replicated trial, table 5. Mountain Pride is a new variety with race 2 fusarium wilt resistance. Fruit size was about equally distributed for the three size arrangements. Also, Mountain Pride produced the lowest yield of culls of the large fruited varieties. Monte Carlo VFN was the second highest yielding entry at Fairhope. Monte Carlo fruit is slightly larger than Mountain Pride. Monte Carlo has race 1 fusarium resistance. Jefferson PS, Castlehy 1035, Castlehy 105, Burgis, Bonnie Nematode Resistant, and Bigset VFN produced above 700 hundredweights of marketable fruit per acre. Pole King Hybrid, Carmen, President, and Experimental Bonnie produced the highest yields of large size fruit (5 x 6). Carmen and President are root knot nematode resistant and have resistance to race 2 fusarium. Blossom-end rot accounted for a high percent of the culls for Early Cascade, Carmen, Conte Sa, and President. Observational line Castlehy 1065 and Pole Boy 83 were the highest yielding entries for the 1984 tests. Castlehy 1065 produced a high yield of medium size fruit (6 x 6), but only slightly higher than Pole Boy 83. Both varieties produced good yields of large size fruit. Auburn University hybrid ATH 22 produced a high yield of small (6 x 7) fruit and ATH produced a good yield of medium (6 x 6) size fruit. ATH 12 produced a good yield of large size fruits. These three hybrids show good potential. Castlehy 1065 and Freedom produced the highest yield of culls and all of the observational entries produced high yields of catface fruit. Burgis, Bigset VFN, Early Cascade, Conte Sa, President, and Experimental Bonnie were the earlier maturing varieties, table 6. Peak harvest dates were somewhat variable within many varieties and between varieties. In general, June 26 through July 3 was the peak period for most of the varieties. Pole Boy 83 produced the latest peak harvest of all the entries. Early Cascade and Pole Boy 83 produced the tallest plants, table 7. Freedom and Red King were the shortest growing plants. Castlehy 105, Burgis, Hayslip, Flora-Dade, Four Way Hybrid, and Sunny produced firm fruit. These varieties should be desirable for commercial shipping. All of the varieties were rated smooth or slightly rough, except Carmen was rated rough for general appearance.

CLANTON. Seed were planted in the greenhouse at Auburn University March 5 and transplanted April 15 at a 15-inch spacing in 5-foot rows. Monte Carlo VFN produced the highest yield of total marketable fruit and larger size fruit, table 8. President, Bonnie Nematode Resistant, Sunny, Mountain Pride, and Hayslip also produced good yields of total marketable and large size fruit. President and Bonnie Nematode Resistant have resistance to root knot nematode and President, Sunny, Mountain Pride, and Hayslip have race 2 fusarium resistance. While Monte Carlo VFN and Bonnie Nematode Resistant have only race 1 fusarium resistance, they are good home garden varieties; however, where race 2 fusarium is a problem, varieties that have this resistance will be more dependable and live longer. President and Carmen have resistance to tobacco mosaic virus. This is an added protection where this disease is a problem. Culls were above 100 hundredweights in several varieties, which is somewhat high. Harvesting schedules that were performed closer together would lower the cull yield in most years. Early Cascade is a good garden type or roadside market variety for small uniform tomatoes. This variety is not round in shape and would not be acceptable in the small round salad tomato markets.

Little separation occurred for earliness for all the varieties, table 9. A total of seven harvests was made for the season. Mountain Pride and Flora-Dade were a week later than the other varieties in the first harvest. Most of the varieties had one of their peak harvests on July 20, except for Four Way Hybrid, Pole King Hybrid, and Early Cascade. Pole King Hybrid produced the latest peak harvest of all the varieties. Bonnie Nematode Resistant, Experimental Bonnie, and Early Cascade produced the earliest peak harvest. Monte Carlo VFN produced the tallest plant and Experimental Bonnie and Burgis produced the shortest plants, table 10. All varieties produced globe to deep globe shape fruit, except for Burgis which produced some fruit that did not conform to its normal deep globe shape. Four varieties were rated very firm, 5 were rated firm, and 7 were rated as soft fruited. Eye appeal was good for all the entries.

CULLMAN. Seed were planted in the greenhouse at Auburn University on March 28 and transplanted May 3 at a 15-inch spacing in 5-foot rows. Experimental Bonnie produced the highest yield of total marketable fruit and Big Girl was a close second for total marketable yield. Big Girl produced the highest yield of large (5 x 6) size fruit. Sunny, Four Way Hybrid, and Castlehy 105 produced above 400 hundredweights of marketable fruit. Sunny produced a high yield of medium size fruit while Four Way Hybrid and Castlehy 105 produced about equal yields of large (5 x 6) size fruit. All varieties produced a high yield of medium size fruit (6 x 6) and somewhat low yields of small (6 x 7) fruit. Celebrity, a new variety, has resistance to race 2 fusarium, root knot nematode, and tobacco mosaic virus. Vista, a new variety, is resistant to race 1 fusarium and root knot nematode. Red King produced the lowest total yield, 235 hundredweights of marketable fruit, and the lowest yield of large (5 x 6) fruit. Observational ATH 12 produced the highest yield of total marketable fruit and the

highest yield of medium (6 x 6) size fruit. Other Auburn University hybrids, ATH 5 and ATH 8, produced good total marketable yields. ATH 8 is a medium (6 x 6) size fruit. Freedom was the lowest yielding observational entry, 256 hundredweights. Cull yields were somewhat high, mostly due to catface and small size fruit.

Eight harvests were made beginning July 17 and ending August 16, table 12. Earliness was not exhibited by any one variety, but 19 of the entries were harvested on the first harvest day. Red King produced a peak yield on July 24 and only had five harvests after this date. Most varieties produced a peak harvest on July 31. Jefferson PS and ATH 5 produced peak harvest on August 16, the last harvest date.

ATH 5 produced the tallest plant and Pik-Red produced the shortest plant, table 13. All the ATH hybrids produced tall plants. Most entries produced fruit of globe to deep globe shape. Big Girl produced fruit that were mixed in shape. Sunny, Four Way Hybrid, Hayslip, and Flora-Dade were rated very firm and would be suitable for commercial shipping. Eye appeal was good for most entries.

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

TABLE 1. BROCCOLI VARIETY TRIAL, FAIRHOPE, FALL 1984¹

Variety and seed source	Marketable yield/acre (center bud only)	Head size	Head dia.	Stem dia.	Leaf in bud, 1=none 5=many	Plant height	Date, no. of harvests, and percent of total					Days from transplant to harvest
							10-8	10-12	10-17	10-22	10-26	
	Lb.	Lb.	In.	In.	No.	In.	Pct.	Pct.	Pct.	Pct.	Pct.	Days
Green Duke (Twilley)	6388	0.88	7.1	1.4	1.0	18	0	84	16	0	0	54-59
Premium Crop (Twilley)	6171	.85	7.2	1.4	2.8	16	15	10	75	0	0	50-59
Green Comet (Agway)	5662	.78	7.0	1.3	1.3	14	53	37	5	0	5	50-68
Bravo (A&C)	5009	.69	6.8	1.3	1.5	19	50	10	40	0	0	50-59
Southern Comet (Agway)	4719	.65	6.9	1.3	1.3	17	50	10	40	0	0	50-59
Gem (Asgrow)	4501	.62	5.5	1.3	4.2	18	0	85	15	0	0	54-68
Green Valiant (Twilley)	4356	.60	5.1	1.4	1.3	16	0	0	16	79	5	59-68
Futura (Asgrow)	2613	.36	4.7	1.1	3.0	16	0	0	0	17	83	63-68
Orion (Asgrow)	2250	.31	3.9	1.0	4.0	14	0	0	18	82	0	59-64

¹Soil test results: P = 100 (M); K = 110 (H); pH = 6.1.
 Date seeded in greenhouse, Auburn: 7-9-84.
 Date transplanted in greenhouse, Auburn: 7-16-84.
 Date transplanted in field: 8-20-84.

TABLE 2. YIELD, DRY MATTER, AND STAND COUNT FOR POTATO VARIETY TRIAL, FAIRHOPE, 1984¹

Variety and seed source	Marketable yield/acre			Size A of total	Dry matter	Stand at harvest
	Total	Size A ²	Size B			
	Cwt.	Cwt.	Cwt.	Pct.	Pct.	Pct.
Red La Soda (Rudnik, North Dakota)	277	271	6	98	16.84	98
Atlantic (Zalewski Bros. Inc., Wisconsin)	263	254	9	97	17.47	95
La Chipper (Starks Farms)	257	253	4	98	17.68	86
W 946R (U. Wisconsin)	251	239	12	95	17.05	97
Red La Soda (Starks Farms)	247	241	6	98	16.63	95
L-81-119R (Starks Farms)	243	232	11	96	18.24	99
L-01-38 (Starks Farms)	225	222	3	99	18.53	78
W 949R (U. Wisconsin)	222	217	5	98	17.05	95
Red La Soda (A. Szczepahski, Minnesota)	221	211	10	96	16.63	95
W 760 (U. Wisconsin)	201	197	4	98	22.33	97
W 855 (U. Wisconsin)	199	195	4	98	20.00	97
Norchip (G. J. Johnson, Minnesota)	193	185	8	96	18.74	95
W 842 (U. Wisconsin)	188	178	10	95	21.06	100
W 742 (U. Wisconsin)	174	170	4	98	19.58	86
W 887 (U. Wisconsin)	168	163	5	97	20.00	87
W 870 (U. Wisconsin)	162	154	8	95	20.85	86
Russet Sebago (Starks Farms)	139	134	5	95	15.78	91
Superior (Starks Farms)	124	123	1	99	18.32	91
BelRus (Starks Farms)	91	76	15	84	19.58	94

¹Soil test: P = 100 (M); K = 110 (H); pH = 6.1. Rainfall date for growing season (inches): March 5.58; April 3.19; May 2.49; June 1-12, 0.
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 3. YIELD, DRY MATTER, AND STAND COUNT FOR POTATO VARIETY TRIAL, CROSSVILLE, 1984¹

Variety and seed source	Marketable yield/acre			Size A of total	Dry matter	Stand at harvest
	Total	Size A ²	Size B			
	<i>Cwt.</i>	<i>Cwt.</i>	<i>Cwt.</i>	<i>Pct.</i>	<i>Pct.</i>	<i>Pct.</i>
Red La Soda (Rudnik, Minot, North Dakota)	226	198	28	88	16.84	99
Atlantic (Zalewski Bros. Inc., Wisconsin)	196	172	24	88	20.85	95
L-01-38 (Starks Farms)	196	180	16	92	17.47	69
W 946R (U. Wisconsin)	188	157	31	84	16.63	100
Red La Soda (A. Szczepahski, Minnesota)	182	150	32	82	16.84	94
W 887 (U. Wisconsin)	173	149	24	86	20.85	89
W 842 (U. Wisconsin)	172	149	23	87	20.64	91
Norchip (G. J. Johnson, Minnesota)	171	152	19	89	18.53	87
Red La Soda (Starks Farms)	164	136	28	83	16.63	91
W 742 (U. Wisconsin)	163	147	16	90	19.79	92
W 855 (U. Wisconsin)	162	135	27	83	19.16	97
La Chipper (Starks Farms)	155	138	17	89	18.32	90
W 949R (U. Wisconsin)	154	129	25	84	17.05	97
W 760 (U. Wisconsin)	147	122	25	83	20.64	96
Kennebec (Canada)	145	124	21	86	15.99	87
L-81-119R (Starks Farms)	130	102	28	78	19.16	94
W 870 (U. Wisconsin)	111	97	14	87	20.43	75
Russet Sebago (Starks Farms)	109	93	16	85	15.15	78
Superior (Starks Farms)	91	83	8	91	18.10	96
BelRus (Starks Farms)	74	55	19	74	18.32	94

¹Soil test: P = 230 (VH); K = 180 (H); pH = 5.5. Rainfall data for growing season (inches): April 5.71; May 6.98; June 1.73; July 1-20, 2.48.

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

TABLE 4. YIELD, SKIN AND FLESH COLOR FOR SWEET POTATO VARIETY TRIALS, 1984¹

Variety and seed source	Marketable yield/acre				Percent No. 1's	Culls	Cracks	Skin color	Flesh color
	Total	No. 1's ²	Canners	Jumbos					
	<i>Bu.</i> ³	<i>Bu.</i>	<i>Bu.</i>	<i>Bu.</i>	<i>Pct.</i>	<i>Bu.</i>	<i>Bu.</i>		
Shorter									
Resisto (USDA)	518	364	87	67	70	69	23	Dark copper	Dark orange
Sumor (USDA)	468	325	128	15	69	55	5	White	White
Centennial (Auburn)	300	195	36	69	65	77	75	Copper	Orange
Carolina Nugget (Auburn)	287	178	36	73	62	75	179	Rose	Light orange
Jewel (Auburn)	286	216	38	32	76	60	108	Copper	Light orange
Regal (USDA)	265	182	44	39	69	31	115	Purple	Light orange
Cordner (Auburn)	244	152	43	49	62	50	75	Copper	Orange
Clanton									
Jewel (Auburn)	764	208	132	424	27	62	6		
Regal (USDA)	553	166	142	245	30	49	62		
Sumor (USDA)	551	231	135	185	42	15	56		
Jewel (Local)	536	202	153	181	38	119	34		
Carolina Nugget (Auburn)	429	148	85	196	35	248	50		
Porto Rico (Auburn)	416	129	136	151	31	77	33	Tan	Light orange
Carolina Nugget (Local)	408	190	99	119	47	215	3		
Resisto (USDA)	396	197	160	39	50	25	79		
Jewel (Georgia)	340	80	86	174	24	77	37		
Crossville									
Centennial (Auburn)	581	388	136	57	68	3	2		
Cordner (Auburn)	491	363	66	62	74	20	1		
Jewel (Auburn)	462	298	85	79	64	11	0		
Carolina Nugget (Auburn)	444	322	79	43	73	27	1		
Jewel (Georgia)	424	313	67	44	74	15	5		
Regal (USDA)	383	274	47	62	72	61	0		
Porto Rico (Auburn)	299	196	59	44	65	5	3		

¹Soil test: Shorter, P = 140 (H); K = 160 (H); pH = 5.3.

Clanton, P = 210 (VH); K = 110 (H); pH = 6.0.

Crossville, P = 40 (M); K = 70 (L); pH 6.3.

²U.S. No. 1 - roots 2 to 3 1/2 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 roots in any of the above three grades.

³Bushel = 50 pounds.

TABLE 5. YIELDS FOR STAKED FRESH MARKET TOMATO TRIAL, FAIRHOPE, 1984¹

Variety and seed source	Marketable yield/acre ²				Culls					
	Total ³	5 x 6 ⁴	6 x 6	6 x 7	Total	Pct. of 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										
Mountain Pride (Castle)	771	204	290	277	89	10	0	26	0	74
Monte Carlo VFN (Petoseed)	768	224	357	187	156	6	9	58	2	31
Jefferson PS (Petoseed)	754	132	307	315	111	8	2	19	3	76
Castlehy 1035 (Castle)	740	185	337	218	103	8	4	39	4	53
Castlehy 105 (Castle)	733	255	293	185	112	8	3	29	0	68
Burgis (U. Florida)	722	214	318	190	98	8	0	25	2	73
Bonnie Nematode Resistant (Bonnie Farms)	720	133	293	294	96	9	7	42	2	49
Bigset VFN (Petoseed)	707	243	281	183	100	8	10	30	3	57
Early Cascade (Petoseed)	691 ⁶	0	0	0	21	3	0	0	28	72
Pole King Hybrid (Twilley)	660	324	239	97	169	5	0	50	8	42
Hayslip (U. Florida)	658	135	313	210	135	6	1	49	0	50
Flora-Dade (Asgrow)	650	45	283	322	104	7	0	34	2	64
Four Way Hybrid (Four Way Farms)	649	246	275	128	106	7	0	53	2	45
Carmen (Petoseed)	638	376	196	66	161	5	7	41	21	31
Sunny (Asgrow)	633	176	265	192	122	6	2	48	6	44
Conte Sa (Petoseed)	605	252	230	123	184	4	8	33	22	37
President (Petoseed)	555	309	167	79	147	5	2	50	11	38
Experimental Bonnie (Bonnie Farms)	555	314	165	76	167	4	3	55	4	38
Observational										
Castlehy 1065 (Castle)	858	217	385	256	101	9	5	49	7	39
Pole Boy 83 (Twilley)	848	252	361	235	85	11	0	25	6	69
ATH 22 (Auburn)	712	29	247	436	36	21	0	35	4	61
ATH 8 (Auburn)	677	185	326	166	50	15	0	32	0	68
Liberty (Twilley)	640	47	244	349	64	11	2	34	18	46
ATH 12 (Auburn)	615	295	254	66	67	10	0	45	9	46
Freedom (Twilley)	542	120	259	163	141	5	0	51	4	45
Red King (Twilley)	494	25	129	340	62	9	2	57	2	39

¹Soil test: P = 330 (VH); K = 160 (H); pH = 5.0; 2½ 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 11/16 inches, maximum diameter 3 3/16 inches.

6 x 6 arrangement: minimum diameter 2 8/16 inches, maximum diameter 2 14/16 inches.

6 x 7 arrangement: minimum diameter 2 4/16 inches, maximum diameter 2 10/16 inches.

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

⁴Some fruit 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 fruit.

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

TABLE 6. HARVEST DATES FOR STAKED FRESH MARKET TOMATO TRIAL, FAIRHOPE, 1984

Variety and seed source	Harvest dates ¹												
	6/5	6/8	6/11	6/15	6/19	6/22	6/26	6/29	7/3	7/6	7/10	7/13	7/17
Replicated													
Mountain Pride (Castle)								X		X		X	
Monte Carlo VFN (Petoseed)							X	X				X	
Jefferson PS (Petoseed)									X		X		
Castlehy 1035 (Castle)								X	X				
Castlehy 105 (Castle)											X	X	
Burgis (U. Florida)										X	X		
Bonnie Nematode Resistant (Bonnie Farms)							X	X					
Bigset VFN (Petoseed)							X	X					
Early Cascade (Petoseed)				X	X								
Pole King Hybrid (Twilley)									X				
Hayslip (U. Florida)									X				
Flora-Dade (Asgrow)								X	X				
Four Way Hybrid (Four Way Farms)								X	X			X	
Carmen (Petoseed)						X	X						
Sunny (Asgrow)							X	X					
Conte Sa (Petoseed)							X	X					
President (Petoseed)							X	X					
Experimental Bonnie (Bonnie Farms)							X	X					
Observational													
Castlehy 1065 (Castle)					X		X	X	X				
Pole Boy 83 (Twilley)								X	X		X	X	X
ATH 22 (Auburn)								X	X				
ATH 8 (Auburn)								X	X		X		
Liberty (Twilley)						X	X						
ATH 12 (Auburn)								X	X				
Freedom (Twilley)								X	X				
Red King (Twilley)						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 7. PLANT HEIGHT AND FRUIT CHARACTERISTICS OF TOMATO VARIETIES, FAIRHOPE, 1984

Variety and seed source	Plant height	Fruit characteristic			Eye appeal ³	Suggested use ⁴
		Color	Shape ¹	Firmness ²		
<i>In.</i>						
Replicated						
Mountain Pride (Castle)	38	Red	2	2	1	1,2
Monte Carlo VFN (Petoseed)	49	Red	1	2	2	1,2
Jefferson PS (Petoseed)	46	Red	2	2	1	1,2
Castlehy 1035 (Castle)	29	Red	2	2	2	1,2
Castlehy 105 (Castle)	49	Red	2	1	1	3
Burgis (U. Florida)	32	Red	2	1	1	3
Bonnie Nematode Resistant (Bonnie Farms)	33	Red	1	3	2	1,2
Bigset (Petoseed)	29	Red	2	2	2	1,2
Early Cascade (Petoseed)	53	Red	2	3	1	1,2
Pole King Hybrid (Twilley)	43	Red	2	2	1	1,2
Hayslip (U. Florida)	33	Red	1,2	1	1	3
Flora-Dade (Asgrow)	31	Red	2	1	1	3
Four Way Hybrid (Four Way Farms)	47	Red	1	1	1	3
Carmen (Petoseed)	30	Red	3	2	3	1,2
Sunny (Asgrow)	33	Red	2	1	1	3
Conte Sa (Petoseed)	36	Red	3	2	2	1,2
President (Petoseed)	30	Red	1	2	1	1,2
Experimental Bonnie (Bonnie Farms)	28	Red	1	3	1	1,2
Observational						
Castlehy 1065 (Castle)	34	Red	1,2	2	1	1,2
Pole Boy 83 (Twilley)	52	Red	2	2	2	1,2
Castlehy 1035 (Castle)	35	Red	1,2	2	1	1,2
ATH 22 (Auburn)	38	Red	2	2	2	1,2
ATH 8 (Auburn)	36	Red	2	2	1	1,2
Liberty (Twilley)	35	Red	2	2	1,2	1,2
ATH 12 (Auburn)	38	Red	2	2	1	1,2
Freedom (Twilley)	23	Red	2	2	1	1,2
Red King (Twilley)	25	Red	2,3	2	1	1,2

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, 1984¹

Variety and seed source	Marketable yield/acre ²				Culls					
	Total ³	5 x 6 ⁴	6 x 6	6 x 7	Total	Pct. of total yield	Cracks	Car-face	Blossom end-rot	Others ⁵
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Pct.	Pct.	Pct.	Pct.	Pct.
Replicated										
Monte Carlo VFN (Petoseed)	535	422	76	37	90	17	40	27	3	30
President (Petoseed)	468	406	54	8	125	27	23	36	3	38
Bonnie Nematode Resistant (Bonnie Farms)	462	362	82	18	107	23	13	6	0	81
Sunny (Asgrow)	442	358	65	19	62	14	13	40	4	43
Mountain Pride (Castle)	436	360	65	11	109	25	34	21	0	45
Hayslip (U. Florida)	431	357	57	17	109	25	35	35	0	30
Experimental Bonnie (Bonnie Farms)	418	362	46	10	99	24	28	20	2	50
Castlehy 105 (Castle)	416	346	50	20	113	27	35	12	3	50
Four Way Hybrid (Four Way Farms)	409	328	58	23	123	30	62	19	2	17
Jefferson PS (Petoseed)	406	324	58	24	73	18	34	24	3	39
Flora-Dade (Asgrow)	400	330	52	18	78	20	18	26	6	50
Bigset VFN (Petoseed)	398	344	41	13	129	32	29	24	2	45
Carmen (Petoseed)	395	352	34	9	157	40	51	29	6	14
Pole King Hybrid (Twilley)	352	278	48	26	183	52	72	20	2	6
Burgis (U. Florida)	343	289	49	5	106	31	36	9	3	52
Early Cascade (Petoseed)	445 ⁶	—	—	—	—	—	—	—	—	—

¹Soil test: P = 250 (VH); K = 150 (H); pH = 5.9; 1 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 11/16 inches, maximum diameter 3 3/16 inches.

6 x 6 arrangement: minimum diameter 2 8/16 inches, maximum diameter 2 14/16 inches.

6 x 7 arrangement: minimum diameter 2 4/16 inches, maximum diameter 2 10/16 inches.

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

⁴Some fruit 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 fruit.

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

TABLE 9. HARVEST DATES FOR STAKED FRESH MARKET TOMATO TRIALS, CLANTON, 1984

Variety and seed source	Harvest dates ¹						
	6/26	7/3	7/12	7/20	7/27	8/2	8/9
Monte Carlo (Petoseed)				X			X
President (Petoseed)				X			
Bonnie Nematode Resistant (Bonnie Farms)			X	X			
Sunny (Asgrow)				X			
Mountain Pride (Castle)				X	X		
Hayslip (U. Florida)				X	X		
Experimental Bonnie (Bonnie Farms)			X	X			
Castlehy 105 (Castle)				X	X		
Four Way Hybrid (Four Way Farms)				X	X		X
Jefferson PS (Petoseed)				X	X		
Flora-Dade (Asgrow)				X	X		
Bigset VFN (Petoseed)				X			
Carmen (Petoseed)				X			
Pole King Hybrid (Twilley)							X
Burgis (U. Florida)				X			
Early Cascade (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 10. PLANT HEIGHT AND FRUIT CHARACTERISTICS OF TOMATO VARIETIES, CLANTON, 1984

Variety and seed source	Plant height	Fruit characteristic			Eye appeal ³	Suggested use ⁴
		Color	Shape ¹	Firmness ²		
<i>In.</i>						
Replicated						
Monte Carlo VFN (Petoseed)	54	Red	2	3	1	1,2
President (Petoseed)	29	Red	1	3	1	1
Bonnie Nematode Resistant (Bonnie Farms)	26	Red	1	3	1	1
Sunny (Asgrow)	26	Red	2	1	1	3
Mountain Pride (Castle)	52	Red	2	3	1	1
Hayslip (U. Florida)	24	Red	2	1	1	3
Experimental Bonnie (Bonnie Farms)	22	Red	2	3	2	1
Castlehy 105 (Castle)	50	Red	2	2	1	1
Four Way Hybrid (Four Way Farms)	52	Red	2	1	1	3
Jefferson PS (Petoseed)	50	Red	2	2	1	1,2
Flora-Dade (Asgrow)	25	Red	2	1	1	3
Bigset VFN (Petoseed)	28	Red	2	3	1	2
Carmen (Petoseed)	38	Red	1	2	2	1
Pole King Hybrid (Twilley)	51	Red	2	2	1	1,2
Burgis (U. Florida)	23	Red	2,5	2	1	1,2
Early Cascade (Petoseed)	29	Red	2	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.

TABLE 11. YIELDS FOR STAKED FRESH MARKET TOMATO TRIAL, CULLMAN, 1984¹

Variety and seed source	Marketable yield/acre ²				Culls					
	Total ³	5 x 6 ⁴	6 x 6	6 x 7	Total	Pct. of total yield	Cracks	Cat-face	Blossom end-rot	Others ⁵
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Pct.	Pct.	Pct.	Pct.	Pct.
Replicated										
Experimental Bonnie (Bonnie Farms)	461	167	259	35	106	23	0	36	0	64
Big Girl (Burpee)	452	240	199	13	121	27	0	41	0	59
Sunny (Asgrow)	423	97	277	49	137	32	0	33	0	67
Four Way Hybrid (Four Way Farms)	418	131	237	50	112	27	0	24	0	76
Castlehy 105 (Castle)	403	136	232	35	115	29	0	18	11	71
Hayslip (U. Florida)	394	95	247	52	144	37	0	23	0	77
Celebrity (Petoseed)	381	154	202	25	68	18	0	31	0	69
Carmen (Petoseed)	379	145	207	27	147	39	1	38	2	59
Burgis (U. Florida)	377	80	225	72	170	45	0	12	0	88
Mountain Pride (Castle)	361	96	227	38	127	35	0	9	0	91
Jefferson PS (Petoseed)	353	71	219	63	105	30	0	16	2	82
Bonnie Nematode Resistant (Bonnie Farms)	348	57	224	67	183	53	0	16	0	84
Bigset (Petoseed)	344	43	238	63	200	58	1	17	0	82
Flora-Dade (Asgrow)	309	41	215	53	134	43	0	21	0	79
Pik-Red (Harris)	303	100	155	48	136	45	0	21	0	79
Pole King Hybrid (Twilley)	297	150	132	15	96	32	0	56	3	41
Vista (Asgrow)	282	133	134	15	94	33	4	25	2	69
Red King (Twilley)	235	20	157	58	161	69	0	18	1	81
Observational										
ATH 12 (Auburn)	390	127	245	18	76	19	0	42	0	58
PSR 72979 (Petoseed)	380	156	191	33	78	21	0	23	0	77
ATH 5 (Auburn)	365	134	182	49	56	15	0	26	0	74
Castlehy 1054 (Castle)	356	122	204	30	91	26	0	27	0	73
PSR 26381 (Petoseed)	339	110	200	29	82	24	0	24	0	76
ATH 8 (Auburn)	319	73	208	38	77	24	0	27	14	59
Conte Sa (Petoseed)	289	95	175	19	136	47	0	33	0	67
Freedom (Twilley)	251	28	180	48	131	51	0	34	0	66

¹Soil test: P = 330 (VH); K = 160 (H); pH = 5.0; 2½ 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 11/16 inches, maximum diameter 3 3/16 inches.

6 x 6 arrangement: minimum diameter 2 8/16 inches, maximum diameter 2 14/16 inches.

6 x 7 arrangement: minimum diameter 2 4/16 inches, maximum diameter 2 10/16 inches.

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

⁴Some fruit 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 mishapen fruit.

TABLE 12. HARVEST DATES FOR STAKED FRESH MARKET TOMATO TRIALS, CULLMAN, 1984

Variety and seed source	Harvest dates ¹							
	7/17	7/24	7/26	7/31	8/2	8/9	8/14	8/16
Replicated								
Experimental Bonnie (Bonnie Farms)				X				
Big Girl (Burpee)				X				
Sunny (Asgrow)				X				
Four Way Hybrid (Four Way Farms)							X	
Castlehy 105 (Castle)							X	
Hayslip (U. Florida)							X	
Celebrity (Petoseed)							X	
Carmen (Petoseed)		X		X				
Burgis (U. Florida)				X			X	
Mountain Pride (Castle)				X				
Jefferson PS (Petoseed)							X	X
Bonnie Nematode Resistant (Bonnie Farms)				X				
Bigset (Petoseed)		X						
Flora-Dade (Asgrow)				X				
Pik-Red (Harris)		X		X				
Pole King Hybrid (Twilley)							X	
Vista ² (Asgrow)				X				
Red King (Twilley)		X						
Observational								
ATH 12 (Auburn)							X	
PSR 72979 (Petoseed)							X	
ATH 5 (Auburn)				X			X	X
Castlehy 1054 (Castle)				X				
PSR 26381 (Petoseed)						X		
ATH 8 (Auburn)				X				
Conte Sa (Petoseed)				X				
Freedom (Twilley)				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.

²Vista was not harvested August 14.

TABLE 13. PLANT HEIGHT AND FRUIT CHARACTERISTICS OF TOMATO VARIETIES, FAIRHOPE, 1984

Variety and seed source	Plant height	Fruit characteristic			Eye appeal ³	Suggested use ⁴
		Color	Shape ¹	Firmness ²		
Replicated						
Experimental Bonnie (Bonnie Farms)	36	Red	3	2	1	1
Big Girl (Burpee)	44	Red	2,3	3	2	1
Sunny (Asgrow)	43	Red	2	1	1	3
Four Way Hybrid (Four Way Farms)	48	Red	2	1	1	3
Castlehy 105 (Castle)	47	Red	2	2	1	1,2
Hayslip (U. Florida)	38	Red	2	1	1	3
Celebrity (Petoseed)	43	Red	2	2	2	2,3
Carmen (Petoseed)	45	Red	3	3	1	1,2
Burgis (U. Florida)	33	Red	2	2	1	1
Mountain Pride (Castle)	43	Red	2	2	1	3
Jefferson PS (Petoseed)	55	Red	3	3	1	1,2
Bonnie Nematode Resistant (Bonnie Farms)	38	Red	1	2,3	1	1,2
Bigset (Petoseed)	39	Red	2	2,3	2	1,2
Flora-Dade (Asgrow)	44	Red	2	1	1	3
Pik-Red (Harris)	30	Red	2	2	2	1,2
Pole King Hybrid (Twilley)	49	Red	2	2	1	2
Vista (Asgrow)	46	Red	2	3	1	1
Red King (Twilley)	39	Red	2	2	1	1
Observational						
ATH 12 (Auburn)	52	Red	2	2	1	1,2
PSR 72979 (Petoseed)	53	Red	2	3	1	1
ATH 5 (Auburn)	63	Red	2	2	2	1,2
Castlehy 1054 (Castle)	48	Red	2	2	1	1,2
PSR 26381 (Petoseed)	48	Red	2	2	1	1,2
ATH 8 (Auburn)	60	Red	2	2	1	1,2
Conte Sa (Petoseed)	45	Red	1	2	1	1,2
Freedom (Twilley)	35	Red	2	2	1	1,2

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 persons regardless
of race, color, sex, or national origin.*