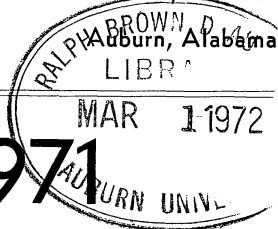


Agricultural Experiment Station
AUBURN UNIVERSITY

E. V. Smith, Director



Vegetable Variety Trials, 1971

JACK L. TURNER¹

VEGETABLE VARIETY TRIALS were conducted at the Gulf Coast Substation, Fairhope; the Chilton Area Horticulture Substation, Clanton; the North Alabama Horticulture Substation, Cullman; the Sand Mountain Substation, Crossville; and the Main Station at Auburn. All variety trials were conducted in randomized replicated plots. Recommended fertilizer rates and applications were applied to give the best results at each location. Disease and insect control measures were applied on a regular schedule throughout the growing season and irrigation was applied as needed. Summaries of results from these trials are reported in this publication.

RESULTS

Sweet Corn. Trials were planted March 23 and April 6 and harvested once-over to simulate machine harvesting. Although not significant, in the first planting a large number of ears were re-

corded for Golden Security and Asgrow 299, Table 1. Calumet, Bittersweet, Gusto, and Sweet Tennessee produced the highest yields of marketable ears in the second planting. Ear weight was generally small for all varieties. Southern corn leaf blight did not appear to be a problem on any of the varieties in these trials. In Test No. 1, only a trace of the disease appeared late in the growing period on the susceptible variety Seneca Chief, even though irrigation was applied frequently to encourage the organism to develop. In Test No. 2, 5 varieties developed a trace of the disease by harvest time. Apparently the disease was not present in enough quantity to be of any significance this year.

Fresh Market Tomatoes. Varieties for the Gulf Coast trial were seeded in flats February 23 in the greenhouse at Auburn and transplanted April 12. Ten harvests were made beginning June 10 and ending July 15. Each plant was staked, pruned, and spaced 15 inches in the drill. Creole produced the

¹ Research Assoc., Department of Horticulture.

TABLE 1. SWEETCORN VARIETY TRIAL, FAIRHOPE, 1971¹

Variety	Ears per acre ²	Mean weight per ear	Color	Kernel rows	Ear length ³	Ear diameter	Ear height above ground	Plant height	Growing days	Southern corn leaf blight index ⁴
	Doz.	Lb.		No.	In.	In.	In.	In.	No.	
Test No. 1										
Silver Queen.....	1,427a	.57	W	14	7.75	1.75	28.0	86.75	88	0
Golden Queen.....	1,371a	.60	Y	14	8.12	2.00	28.5	87.50	88	0
64-2160.....	1,281a	.55	Y	12	11.19	2.13	14.0	62.75	85	0
Seneca Chief.....	1,276a	.53	Y	12-14	11.38	1.87	13.25	63.75	85	1
Seneca 110.....	1,407a	.49	Y	14	12.50	1.97	20.00	65.25	85	0
Seneca Scout.....	1,255a	.54	Y	14-16	12.00	2.06	18.25	74.00	85	0
Golden Security.....	1,523a	.55	Y	14-16	12.00	2.00	20.50	82.00	85	0
Asgrow 299.....	1,492a	.54	Y	14-16	11.94	2.13	23.25	79.75	85	0
Asgrow 1279.....	1,427a	.52	Y	14-16	11.94	1.95	24.25	79.25	85	0
Wintergreen.....	1,457a	.50	Y	14-16	11.38	1.97	19.25	70.00	85	0
Test No. 2										
Silverliner.....	1,200bc	.50	W	12	7.63	2.00	27.0	75.00	79	1
Buttersweet.....	1,553a	.55	Y	18	7.63	2.13	27.25	82.50	79	1
Sweet Tenn.....	1,477a	.57	Y	16-18	7.50	2.25	28.00	84.25	79	0
Keyston Ev. Hy.....	1,195bc	.57	W	18	6.88	2.06	29.00	87.50	81	0
Iochief.....	1,210bc	.52	Y	16	6.00	2.00	21.25	71.75	79	0
Calumet.....	1,558a	.57	Y	14	7.75	1.81	26.25	85.00	79	0
Asgrow 358.....	1,381ab	.58	Y	14	7.00	2.13	27.50	86.25	79	1
Gusto.....	1,538a	.53	Y	16	6.06	2.13	19.75	76.00	79	0
M6128.....	1,079c	.64	Y	14	6.88	2.19	31.50	83.75	79	1
M5743.....	1,119c	.68	Y	14	8.50	2.13	34.00	97.00	81	1

¹ Soil test P = 90 (high); soil test K = 80 (medium); pH = 5.8; 1 ton of limestone applied per acre.

² Means followed by the same letter do not differ significantly from each other at the 5% level.

³ All lengths with 4 digit numbers were measured with shuck on, all others were measured with the shuck off.

⁴ 0 = None; 5 = dead plants.

highest total marketable yield, Table 2. Tropic produced the highest yield of 5 x 6 size fruits. Traveler, a new variety, produces a very firm excellent quality pink skin tomato. Walter produced the lowest yield of all the varieties.

TABLE 2. STAKED AND PRUNED FRESH MARKET TOMATO TRIAL, FAIRHOPE, 1971¹

Variety	Marketable yield per acre			Total
	Sizes			
	5 x 6	6 x 6	6 x 7	
	Cwt.	Cwt.	Cwt.	Cwt.
Creole.....	122	80	104	306
Tropic.....	196	54	31	279
Manapal.....	152	60	61	273
AU 6625.....	108	56	80	244
Traveler.....	79	64	85	229
AU 106.....	114	54	52	219
Bonnie Nematode Resistant...	99	52	66	218
Sunburst.....	52	46	104	202
AU 115A.....	109	28	26	163
Walter.....	58	33	59	151

¹ Soil test P = 80 (medium); soil test K = 90 (high); pH = 5.8; 1 ton of limestone applied per acre.

Sixteen varieties in the Cullman trial were seeded in flats in the greenhouse at Auburn March 27 and transplanted May 5. One half of the plants in each plot were grown as staked tomatoes using the binder twine trellis method. The other half were grown as ground tomatoes. All varieties were spaced 15 inches in the drill. Liquid Nemagon was applied for nematode control at the same time the land was sub-soiled for planting. Diphenimid at 4 pounds per acre was applied post plant for weed control. A total of 12 harvests were made beginning on July 3 and ending August 15.

All varieties produced higher marketable yields from staked plots, Table 3. Chico Grande, a paste

TABLE 3. STAKED AND UNSTAKED FRESH MARKET TOMATO TRIAL, CULLMAN, 1971¹

Variety	Staked			Total	Unstaked			Total
	Marketable yield per acre				Marketable yield per acre			
	Sizes				Sizes			
	5 x 6	6 x 6	6 x 7		5 x 6	6 x 6	6 x 7	
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	
Chico Grande....	38	48	332	418	31	52	220	303
Creole.....	44	138	170	352	35	78	32	145
Floradel.....	31	127	143	343	50	68	29	147
Walter.....	65	129	130	325	44	83	44	172
Bonnie Nematode Resistant.....	117	128	75	320	100	69	34	203
Sunburst.....	31	127	143	300	20	106	80	206
Terrific VFN.....	100	138	55	293	68	50	24	141
Tropic.....	69	133	71	274	37	43	17	97
Homestead 500.....	73	118	75	266	38	55	24	117
Homestead Elite.....	68	108	84	261	48	56	28	132
Supermarket.....	30	89	121	241	16	58	50	124
Tropi-Red.....	68	79	71	218	45	43	30	119
TAMU Monte Grande.....	83	95	36	214	71	60	15	146
Homestead 61.....	27	91	93	212	29	52	39	120
Homestead 24.....	17	78	105	201	15	48	30	93
Tropi-Gro.....	68	74	49	190	27	29	14	69

¹ Soil test P = 170 (high); soil test K = 100 (high); pH = 6.1.

processing type tomato, produced the highest yield of marketable fruit and produced 115 hundredweights more staked than unstaked. Creole produced the highest yield of marketable fruit of the fresh market staked varieties. Floradel, Walter, Bonnie Nematode Resistant, and Sunburst produced over 300 hundredweights of marketable tomatoes when staked. These same varieties produced 196, 153, 117, and 94 hundredweights less respectively when grown as ground tomatoes. Bonnie Nematode Resistant and Terrific VFN produced the highest yield of 5 x 6 fruits in the staked trial.

Fresh Market Cucumbers. Soil was fumigated with $\frac{3}{4}$ gallon of Nemagon on May 5. Varieties were seeded with a Planet Jr. seeder May 18 and thinned to single plants 6 inches apart in the drill 2 weeks later. Ten harvests were made beginning July 12 and ending August 10. Yields of marketable fruit were reduced this year by excessive rains and considerable loss of fruits to Pythium Rot. Early Surecrop and Triumph produced the highest marketable yields, Table 4. All varieties had good shape and color.

TABLE 4. FRESH MARKET CUCUMBER TRIAL, CULLMAN, 1971¹

Variety	Yield per acre		Fruit size
	Cwt.	Lb.	
Early Surecrop.....	174	.60	
Triumph.....	174	.51	
Palomar.....	158	.40	
Marketer.....	157	.43	
Saticoy.....	154	.47	
Poinsett.....	153	.43	
Crackerlee.....	151	.42	
Early Marketer.....	147	.57	

¹ Soil test P = 90 (medium); K = 90 (medium); pH = 5.6; 1 ton of limestone applied per acre.

Lima Beans. Seed were planted and spaced approximately 2 inches apart in the drill on April 19 at Auburn and May 24 at Cullman. Varieties were harvested once-over to simulate machine harvest. Jackson Wonder, Allgreen, and Henderson Bush produced the highest in-pod yields at Cullman, Table 5. At Auburn, Fordhook 242 produced the highest in-pod yield. Fordhook, Fordhook 242, and Green Fordhook 861 had the best green to dry pod ratio at harvest. Henderson Bush had a higher per cent of dry pods at harvest than is desirable.

Summer Squash. Seed were planted on May 20 at Cullman in soil fumigated with 1 gallon of Nemagon on May 5. Plots were thinned to 2 plants per hill spaced 18 inches apart. Thirteen harvests were made beginning on June 23 and ending July 30. Zucchini Hybrid produced the highest yield of marketable fruit, Table 6. Of the yellow squash, Seneca Butterbar produced the highest yield among the straightneck type and Dixie produced the highest yield of the crookneck type.

At Auburn seed were planted April 28 and thinned to one plant 2 feet apart in the drill. Sixteen harvests

TABLE 5. LIMA BEAN VARIETY TRIAL, CULLMAN AND AUBURN 1971¹

Variety	Cullman				Auburn				Condition of pods at harvest		
	Yield per acre		Shell-out	Growing days	Yield per acre		Shell-out	Growing days	Dry	Yellow	Green
	In pod	Shelled			In pod	Shelled					
	<i>Bu.</i>	<i>Lb.</i>	<i>Pct.</i>	<i>No.</i>	<i>Bu.</i>	<i>Lb.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>Pct.</i>	<i>Pct.</i>
Allgreen.....	246	2,726	37	92	170	1,937	38	80	19	19	62
Fordhook.....	133	1,514	38	92	261	3,837	49	85	3	17	80
Fordhook 242.....	141	1,737	41	85	321	4,628	48	82	3	9	88
Green Fordhook 861.....	174	2,040	39	85	170	2,443	48	85	6	2	92
Henderson Bush.....	215	2,712	42	81	187	2,978	53	80	46	24	30
Jackson Wonder.....	266	3,277	41	81	210	3,659	58	80	18	43	39
Thaxter.....	136	1,596	39	85	180	2,319	43	80	30	19	51

¹ Cullman: Soil test P = 200 (high); soil test K = 120 (low); pH = 5.6; 1 ton of limestone applied per acre.
Auburn: Soil test P = 300 (very high); soil test K = (80 Medium); pH = 6.3.

were made beginning June 14 and ending July 23. Results were similar to those at Cullman in that Zucchini produced the highest total marketable yield and Dixie produced the highest yield of the crookneck type. Fruit size was smaller for both size groups at Auburn.

Potatoes. Seed pieces were cut to 1½ ounces each and treated with a 7½ per cent Captan dust. Seed pieces were spaced 12 inches apart in 42-inch rows. Varieties were planted March 24 and harvested July 12.

Seven white skin and two red skin varieties were evaluated, Table 7. Yields for all varieties were well below what is generally considered an acceptable yield. Weather conditions were difficult at times with excessive rains and cold temperatures through May. Red La Soda and La Chipper produced the lowest marketable yields.

Eggplant. Seed were planted in flats in the greenhouse at Auburn March 27 and transplanted 30 inches apart in the drill May 12.

Treflan herbicide at ¾ pound per acre was used for weed control. A total of 14 harvests were made beginning June 29 and ending September 8. Peerless Hybrid produced the highest yield of No. 1

fruit, Table 8. Long Purple produced a low yield and has a poor potential for Alabama.

Okra. Seed were planted on May 5 with a Planet Jr. seeder into soil fumigated with 1 gallon of Nema-gon on April 16 and treated with ½ pound per acre of Treflan herbicide at planting. Plants were thinned to 6 inches in the drill. A total of 29 harvests were made beginning June 28 and ending September 10.

TABLE 7. POTATO VARIETY TRIAL, CROSSVILLE, 1971¹

Variety	Yield per acre			Eye depth ²	Scab rat-ing ³	Hol-low heart rat-ing ³	Black heart rat-ing ³
	No. 1	No. 2	No. 3				
White skin varieties	<i>Cwt.</i>	<i>Cwt.</i>	<i>Cwt.</i>				
Kennebec.....	72.22	6.46	78.68	S	0	0	0
La Chipper.....	57.94	11.86	69.80	S	0	0	0
Norchip.....	60.60	15.71	76.31	M	0	0	0
Penobscot.....	64.22	12.04	76.26	S	0	0	0
Superior.....	58.11	12.99	71.10	S	0	0	0
Frito Lay 96.....	65.82	17.73	83.55	M	0	0	0
Frito Lay 282 (Seminole).....	80.23	18.09	69.32	S	0	0	0
Red skin varieties							
La Rouge.....	68.20	14.47	82.67	M	0	0	0
Red La Soda.....	49.75	11.10	60.85	D	0	0	0

¹ Soil test P = 160 (high); soil test K = 90 (medium); pH = 5.2.

² S = shallow; M = medium; D = deep.

³ 0 = None; 5 = severely affected.

TABLE 6. SUMMER SQUASH TRIALS, CULLMAN AND AUBURN, 1971¹

Variety	Cullman					Auburn					Color	Type
	Marketable yield			Fruit size		Marketable yield			Fruit size			
	No. 1	No. 2	Total	No. 1	No. 2	No. 1	No. 2	Total	No. 1	No. 2		
	<i>Cwt.</i>	<i>Cwt.</i>	<i>Cwt.</i>	<i>Lb.</i>	<i>Lb.</i>	<i>Cwt.</i>	<i>Cwt.</i>	<i>Cwt.</i>	<i>Lb.</i>	<i>Lb.</i>		
Dixie.....	135	86	221	.22	.41	85	93	178	.16	.35	yellow	Crookneck
Early Prolific Straightneck.....	104	72	176	.28	.54	44	52	96	.18	.40	yellow	Straightneck
Early Summer Crookneck.....	58	56	114	.15	.30	61	52	113	.13	.28	yellow	Crookneck
Goldbar Hybrid.....	112	83	195	.30	.65	68	83	151	.20	.40	yellow	Straightneck
Golden Summer Crookneck.....	62	48	110	.17	.32	49	48	97	.14	.29	yellow	Crookneck
Hyrific.....	96	64	160	.29	.61	69	71	140	.18	.38	yellow	Crookneck
Seneca Butterbar.....	118	106	224	.35	.68	64	96	160	.21	.45	yellow	Straightneck
Seneca Prolific.....	138	72	210	.28	.51	50	41	91	.17	.34	yellow	Straightneck
XI 1019.....	86	64	150	.17	.28	65	43	108	.13	.20	yellow	Crookneck
Yellow Summer Crookneck.....	70	44	114	.17	.30	65	66	131	.14	.30	yellow	Crookneck
Zucchini Hybrid.....	370	92	462	1.39	1.77	90	136	226	.58	1.03	green/ gray spots	Straightneck

¹ Cullman: Soil test P = 130 (high); soil test K = 90 (medium); pH 5.6; 1 ton of limestone applied per acre.
Auburn: Soil test P = 150 (very high); soil test K = 60 (low); pH = 6.3.

TABLE 8. EGGPLANT VARIETY TRIAL, CULLMAN, 1971¹

Variety	Marketable yield per acre ²		Average fruit size	
	No. 1	No. 2	No. 1	No. 2
	Cwt.	Cwt.	Lb.	Lb.
Peerless Hybrid.....	434	63	.71	.63
Black Beauty.....	362	63	.86	.84
Early Beauty Hybrid.....	329	87	.41	.39
Jersey King Hybrid.....	314	51	.67	.66
Florida Market.....	298	45	.87	1.01
Long Purple.....	86	74	.60	.54

¹ Soil test P = 170 (high); soil test K = 110 (high); pH = 5.7. 1 ton of limestone applied per acre.

² The difference in No. 1 and No. 2 fruits was primarily appearance and shape of the fruit.

TABLE 9. OKRA VARIETY TRIAL, AUBURN, 1971¹

Variety	Yield per acre
Emerald Green Velvet.....	9.02
Clemson Spineless.....	8.92
Emerald.....	8.31
Dwarf Green Long Pod.....	7.38
Louisiana Green Velvet.....	7.34
Perkins.....	6.26
Perfected Perkins Long Pod.....	6.11

¹ Soil test P = 730 (extremely high); soil test K = 90 (medium); pH = 6.5.

Emerald Green Velvet produced the highest yield, Table 9. Clemson Spineless and Emerald produced good yields of well filled fruits. Very few pods were found this year with poor seed filling.

Pickling Cucumbers. Seed were planted August 15 and thinned 10 days later to 6 inches in the drill. A total of 7 harvests were made beginning September 21 and ending October 11. Premier produced the highest total yield of marketable fruit, Table 10. Marketable yields were reduced somewhat by Pythium Rot for all varieties. Entries 14A x 38A and 14A x 36A are very promising and are expected to be named soon. Explorer and Chipper are excellent pickle type cucumbers. Carpel separation was very low in all varieties, and they all ranked good to excellent in vine vigor and fruit shape. All varieties had white spines.

Snapbeans. Seed were planted and spaced 2 inches in the drill April 14 for the spring crop and August 12 for the fall crop. A once over harvest was made

TABLE 10. FALL PICKLING CUCUMBER TRIAL, AUBURN, 1971¹

Variety	Marketable yield per acre					Harvest season	Skin color ³	Fruit shape	Spine color ⁴	Vine vigor	Carpel separation ⁵	
	Grades ²				Total						No. 3's	No. 4's
	No. 1	No. 2	No. 3	No. 4								
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.						Pct.	Pct.
Premier.....	15.75	69.26	116.38	26.14	227.53	Early	LG	Good	Wh	Excellent	0	0
14A x 38A.....	11.65	67.08	97.72	35.47	211.92	Early	DG	Good	Wh	Excellent	0	0
Explorer.....	14.16	65.31	89.08	37.97	206.52	Early	G	Good	Wh	Excellent	0	0
Chipper.....	11.29	58.26	100.59	25.92	196.06	Early	G	Good	Wh	Excellent	1	0
Dixie 23.....	12.09	47.05	102.70	28.97	190.81	Medium	G	Excellent	Wh	Excellent	0	0
14A x 36A.....	11.72	49.61	90.86	32.35	184.54	Early	G	Good	Wh	Excellent	0	0
Galaxy.....	10.45	58.99	82.22	25.61	177.27	Medium	DG	Good	Wh	Excellent	2	11

¹ Soil test P = 324 (very high); soil test K = 80 (medium); pH = 6.5.

² No. 1 grade ranged up to 1 1/16 inch in diameter; No. 2 grade ranged from 1 1/16 to 1 1/2 inches in diameter; No. 3 grade ranged from 1 1/2 to 2 inches in diameter; No. 4 grade ranged from 2 to 2 1/4 inches in diameter.

³ G = green, LG = light green, DG = dark green.

⁴ Wh = white

⁵ Carpel separation was based on the per cent of fruits cut that had open or air spaces in the middle.

for each variety to simulate machine picking when 50 per cent of the yield was thought to have a No. 4 sieve size. Falcon was the highest yielding variety in both spring and fall trials, Table 11. Avalanche did well in the spring but dropped to near the bottom in the fall. Picker did not yield well in the spring or fall. Sieve size distribution, based on the number of growing days, was good for most varieties.

ACKNOWLEDGMENT

Cooperation of the following personnel is acknowledged: Harold Yates and J. E. Barrett, Jr., Gulf Coast Substation; Frank Garrett, State Department of Agriculture and Industries; C. C. Carlton and Kenneth Short, Chilton Area Horticulture Substation; Marlin Hollingsworth, North Alabama Horticulture Substation; S. E. Gissendanner and John Eason, Sand Mountain Substation; and Harrison Bryce, Main Station at Auburn.

TABLE 11. SNAPBEAN VARIETY TRIAL, AUBURN 1971¹

Variety	Yield per acre	Growing days	Sieve Size ²				
			1	2	3	4	5
	Bu.	No.	Pct.	Pct.	Pct.	Pct.	Pct.
Spring							
Falcon.....	311	56	14	10	21	55	0
Avalanche.....	299	56	9	8	16	54	13
Maestro.....	251	55	18	15	16	35	16
Green Isle.....	247	55	14	13	16	57	0
Eagle.....	207	56	13	11	25	43	8
Rodeo.....	192	55	19	9	15	47	10
Valiant.....	178	56	10	18	20	47	5
Astro.....	168	55	13	11	16	44	16
Picker.....	157	56	10	9	14	59	8
Fall							
Falcon.....	259	55	12	20	23	43	5
Maestro.....	224	54	5	11	24	45	15
Green Isle.....	178	54	11	14	19	47	9
Rodeo.....	173	54	10	17	34	31	8
Eagle.....	152	54	16	23	24	32	5
Astro.....	148	54	10	14	20	48	8
Valiant.....	139	55	22	10	20	43	5
Avalanche.....	132	51	11	13	27	48	1
Picker.....	103	55	10	26	23	36	5

¹ Spring: Soil test P = 168 (high); soil test K = 85 (low); pH = 5.8; 1 ton of limestone applied per acre.

Fall: Soil test P = 300 (very high); soil test K = 80 (medium); pH = 6.3.

² Sieve size was determined from a 100-bean sample taken at random from the four replications. Sieve denotes canning size grade with size 1 having the smaller diameter and 5 having the larger.