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## 1995 Commercial Vegetable Variety Trials - Broccoli

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Twelve commercially available broccoli varieties and two experimental lines were compared in a spring-planted test at the Coastal Plain Experiment Station (elev. 382 feet) in Tifton, Georgia. Broccoli transplants were commercially grown in 200-cell polystyrene trays at Lewis-Taylor Farms near Tifton. Normal cultural practices were used for transplant production.

Broccoli was transplanted on 3 March, 1995 into a Tifton sandy loam soil. Plots consisted of single rows of 20 plants each spaced 12 inches apart in rows spaced 36 inches apart. The planting was arranged in a Randomized Complete Block Design with four replications.

Normal cultural practices were used for bare ground broccoli culture in Georgia. Base fertilizer consisted of 1000 pounds/acre of 6-12-6 incorporated prior to transplanting followed by two sidedress applications of 15-0-14 (200 pounds/acre each). Trifluralin (0.5 lb a.i./acre) was pre-plant incorporated for weed control. Fungicides and insecticides were applied based on Extension recommendations.

Broccoli was harvested at maturity six times from 28 April to 16 May. Data were collected on yield, head size and weight, color and density, stem diameter and bead size and uniformity.

### Variety Descriptions

*Arcadia* - 95 days from seeding, withstands some warmer temperatures, large plant.

*Captain* - Early maturing, tolerant to downy mildew, adapted to warmer areas, 26" plants.

*Emerald City* - 85 days from seeding, medium size plant, tolerant to downy mildew.

*Emperor* - 84 days from seeding, medium size plant, moderate heat tolerance.

*Everest* - 65 days from seeding, resistant to downy mildew, 22" plant height.

*Greenbelt* - 75 days from seeding, 20" plant height.

*Major* - early maturing, tolerant to downy mildew, adapted to warmer areas, 26" plant.

*Ninja* - 86 days from seeding, compact plant, adaptable to warm weather.

*Packman* - Early season, 27" plant, uniform harvest.

*Patriot* - 94 days from seeding, medium size plant, tolerant to downy mildew.

*Premium Crop* - 71 days from seeding.

*SBC 3306* - Experimental (Sakata), 89 days, compact plant, downy mildew resistant.

*SBC 9305* - Experimental (Sakata).

*Sprinter* - 83 days from seeding, small size plant, adapted to warmer climates.

### Summary

Results are given in Tables 1 and 2. Several varieties yielded over 250 boxes per acre. Eight of the varieties produced most of their yield in the first three harvests. Early varieties that do not yield over 250 boxes would probably not fair well for spring production in Georgia. Overall quality was excellent. Those varieties that have head density and bead size greater than the average produced the best overall quality. Rapid maturity in spring appears to lower quality.

**Table 1. Yield, marketability, average head size and incidence of hollow stem of broccoli in 1995 at the Coastal Plain Experiment Station in Tifton, Georgia.**

Variety	Sponsor	Yield/A		% Marketable	Early Yield/A		Hollow Stems/Plot	Average Head Size (grams)
		CWT	23#-Carton		CWT	23#-Carton		
Arcadia	Sakata	70.89	308	97.90	1.11	5	0.25	227
Captain	PetoSeed	50.63	220	100.00	49.18	214	0.00	158
Emerald City	Sakata	61.20	266	99.48	22.23	97	0.50	194
Emperor	Twilley	44.00	191	99.08	37.30	162	0.00	139
Everest	Rogers	42.67	186	99.08	41.32	180	0.00	137
Greenbelt	Rogers	71.63	311	95.78	0.00	0	0.25	233
Major	PetoSeed	44.54	194	100.00	43.07	187	0.00	139
Ninja	Sakata	61.54	268	97.80	44.59	194	0.25	198
Packman	PetoSeed	44.09	192	99.60	38.76	169	0.00	139
Patriot	Sakata	64.61	281	97.33	0.00	0	0.00	209
Premium	Sakata	58.25	253	100.00	49.35	215	0.75	182
SBC 3306	Sakata	53.52	233	100.00	21.54	94	0.00	167
SBC 9305	Sakata	54.12	235	98.65	13.76	60	0.75	172
Sprinter	Twilley	40.93	178	96.10	37.70	164	0.00	139
Mean of Test		54.47	237	98.63	28.56	124	0.20	174
L.S.D. (0.05)		11.60	50.45	4.27	11.44	49.72	0.59	34.22
C.V. (%)		14.89	14.89	3.03	27.99	27.99	0.21	13.78

**Table 2. Head color, dimensions and quality characteristics of broccoli in 1995 at the Coastal Plain Experiment Station in Tifton, Georgia.**

Variety	Sponsor	Head Color <sup>1</sup>	Head Density <sup>2</sup>	Head Width <sup>3</sup>	Head Length <sup>4</sup>	Stem Diameter <sup>5</sup>	Doming <sup>6</sup>	Bead Uniformity <sup>7</sup>	Bead Size <sup>8</sup>
Arcadia	Sakata	3.48	2.95	18.08	8.93	1.19	4.50	2.80	2.90
Captain	PetoSeed	4.85	2.50	13.58	8.68	1.18	3.35	2.60	2.20
Emerald City	Sakata	4.10	2.95	13.95	9.60	1.25	3.85	2.75	2.55
Emperor	Twilley	3.50	2.25	12.38	9.28	1.21	4.05	2.30	2.35
Everest	Rogers	5.00	2.55	12.63	8.63	1.13	4.20	2.70	2.50
Greenbelt	Rogers	3.20	2.95	17.08	9.18	1.38	4.38	2.75	2.95
Major	PetoSeed	4.90	2.50	12.90	7.90	1.16	3.58	2.35	2.05
Ninja	Sakata	5.00	3.00	15.23	9.28	1.27	4.60	2.90	2.90
Packman	PetoSeed	4.40	2.75	12.75	9.05	1.18	2.45	1.95	2.10
Patriot	Sakata	3.00	3.00	17.00	8.50	1.23	4.55	2.45	2.80
Premium Crop	Sakata	4.80	2.95	13.30	8.40	1.34	4.10	2.25	2.00
SBC 3306	Sakata	4.50	3.00	13.70	8.80	1.32	4.05	2.90	2.35
SBC 9305	Sakata	3.65	3.00	13.90	9.00	1.17	3.60	2.85	2.50
Sprinter	Twilley	3.80	2.35	11.80	8.28	1.38	3.45	2.35	1.75
Mean of Test		4.16	2.76	14.16	8.82	1.24	3.91	2.56	2.42
L.S.D. (0.05)		0.55	0.38	1.99	1.01	0.18	0.74	0.51	0.54
C.V. (%)		9.20	9.55	9.82	7.99	10.42	13.21	13.78	15.63

<sup>1</sup>Head Color - based on scale 1=yellowish green, 2=light green to 4=dark green, 5=blue green, 6=purple. <sup>2</sup>Head Density - based on scale 1=loose to 3=solid. <sup>3</sup>Head width - widest point of head in cm. <sup>4</sup>Head Length - length of head in cm from top of stem to peak of head. <sup>5</sup>Stem diameter - diameter of stem in inches. <sup>6</sup>Doming - based on scale of 1=sunken, 2=flat, 3=slight dome to 5=high dome. <sup>7</sup>Bead Uniformity - based on scale of 1=variable to 3=uniform. <sup>8</sup>Bead Size - based on scale of 1=large to 3=small.