

Fall Broccoli for Eastern Virginia - 1997

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Studies have indicated that bunched broccoli has potential as an alternative or non-traditional fall vegetable crop in Eastern Virginia (O'Dell, et al., 1989; Sterrett et al., 1996). However, lack of access to slush icing and difficulty in meeting current quality standards has been serious limitations to commercial production.

In a 22 lb. carton that contains 14 bunches (14-count carton), with an average of three heads/bunch, the average head weight is 0.57 lbs. With a maximum 8.25-inch bunched head diameter, the average diameter of each head should not exceed 4 inches (10 cm). In previous broccoli germplasm trials at this location, shortened internodes, with thick, fibrous stems was a problem for most entries. In the current trial, head exertion (extension above the leaves) of several entries was appreciable despite the warm weather experienced during the early growing period in late August and September.

The trial was direct-seeded on August 14, 1997. Fertilizer (1000 lb. of 10-10-10) and herbicide (trifluralin, 0.5lb. ai/A) were incorporated prior to planting. Harvesting began on October 21 and continued until December 23. Early harvest included October 21, October 28, and November 4.

As seen in Table 1, several of the entries meet the current quality standards, combining slender stems, tight domed heads and fine beading with reasonable yields. With these newer hybrids, growers should be able to address potential local and regional marketing opportunities for bunched broccoli. Access to slush ice is still a critical problem that must be addressed to maintain product quality after harvest.

Specific comments follow:

Arcadia - heads somewhat flat and lumpy, smaller than some varieties in the trial.

Barbados - heads smooth but flat, somewhat small; stems attractive.

Captain - very high percentage of marketable heads; fine beading on moderately tight, dark (almost purple) heads. Leaves in or near the head are a concern.

Claudia - stems coarse and fibrous, leaf scars prominent on harvested stalks. Heads irregular (lumpy) and too large for bunched market.

Decathlon - leaves very upright, may interfere with harvest; beading moderately coarse on slightly lumpy heads. Late head maturity.

Everest - nice, tight heads with very few leaves close to the head, early head maturity.

Excelsior - Large stems with lumpy, coarse-beaded heads.

Laguna – poor plant stand suggests lack of tolerance to high temperatures at planting. Stems coarse and fibrous, leaf scars prominent on harvested stalks. Head very large and uneven with high percentage of light (blanched) florets within the head.

Liberty – head maturity very late, percentage of marketable heads very low; fine beading, tight heads.

Majestic – tight, well-domed heads, fine beading, moderately dark color; thick stems. Percentage of marketable heads was significantly lower than **Captain** or **Windsor**.

Major – first heads were loose, with tighter heads harvested in cooler weather. Average head weight low, requiring 4 heads to bunch to make minimum weight. More than 85% marketable heads, relatively small stem diameter.

Regal – heads lumpy and somewhat loose, thickened stems, early head maturity.

Sabre - moderately late head maturity, very domed heads with fine beading; long slender stems.

Signal – heads loose and light in color. Percentage of marketable heads >85%, very slender stems, early head maturity.

Windsor – nice, uniform heads, fine beading, stems slender. High (>85%) percentage of marketable heads.

Literature Cited

O'Dell, C.R., R. Morse, P. Ramsey, and A. Borowski. 1989. Fall broccoli production – A guide for southside Virginia farmers. Virginia Coop. Ext. Serv. Publ. 438-011.

Sterrett, S. B., S. D. Thornsby, S. G. Sturt, J. W. Mapp, C. W. Coale, Jr., and D. B. Taylor. 1996. The process for evaluating agricultural alternatives: an Eastern Shore Virginia example. Virginia Coop. Ext. Publ. 448-220/REAP R022.

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² Provision of seed by Asgrow, Harris-Moran, Peto, Rogers, and Sakato Seed Companies is greatly appreciated.

Tale 1. Yield, average weight, percentage of marketable heads, average stem and head diameter of broccoli - 1997.

Cultivar	Early Yield ¹ (22 lb. Cartons/A)	Total Yield	Ave. Wt. Head (lbs.)	Marketable Head (%) ²	Average Stem Diameter (mm)	Average Head Diameter (cm)	Leaf Scars (#)
ARCADIA	0	309	0.46	50.1	28.9	12.0	4.9
BARBADOS	0	305	0.40	75.1	31.4	11.1	5.2
CAPTAIN	104	488	0.36	96.4	28.6	11.1	6.0
CLAUDIA	184	522	0.62	79.8	38.3	14.9	6.9
DECATHLON	0	321	0.43	50.9	29.1	11.2	6.4
EVEREST	183	510	0.52	95.6	32.1	14.2	5.3
EXCELSIOR	0	406	0.44	79.0	32.1	11.6	6.4
LAGUNA	0	569	0.62	82.4	36.4	11.1	5.2
LIBERTY	0	181	0.61	23.8	39.8	10.7	8.1
MAJESTIC	0	497	0.57	65.0	36.5	12.2	7.3
MAJOR	185	446	0.36	88.0	29.5	10.9	6.4
REGAL	311	570	0.56	77.6	42.4	15.4	6.2
SABRE	0	156	0.33	28.8	27.8	9.6	5.8
SIGNAL	372	398	0.40	87.5	25.4	11.3	4.7
WINDSOR	0	583	0.48	96.3	33.3	13.6	5.9
XPH 12211	0	459	0.57	68.8	32.9	13.3	6.4
WALLER/ DUNCAN (P=.05)	83	129	0.12	19.8	6.0	2.3	1.0

¹ Harvest period: October 21-November 4.

² (Marketable heads/stand count) x 10.

TABLE 2. Number and interval of harvest, planting and head characteristics – 1997.

	Days To Harvest	Number Of Harvests	Interval of Harvest Days	Uniformity Of Bud Development	Head Shape	Uniformity of Head Color	Tightness of Head	Bead Size	Uniformity of Head Development	Head Position	Plant size
ARCADIA	106	2.0	16	6.0	6.0	6.8	7.8	5.5	5.5	6.0	8.0
BARBADOS	98	3.0	14	6.5	4.5	6.8	6.3	6.8	5.0	7.5	7.0
CAPTAIN	85	4	24	8.0	6.5	6.0	7.0	7.5	7.5	6.0	6.0
CLAUDIA	74	5.0	37	3.0	6.0	4.5	6.5	5.0	4.5	5.5	6.0
DECATHLON	106	2.5	25	7.5	7.5	6.5	8.3	7.5	6.5	4.5	7.0
EVEREST	74	4.5	31	6.5	5.8	6.5	6.8	5.8	6.5	7.0	7.0
EXCELSIOR	99	3.0	22	7.5	6.8	7.3	7.8	6.8	4.5	7.5	9.0
LAGUNA	93	3.8	26	5.3	8.0	6.0	8.3	6.5	7.0	6.5	8.0
LIBERTY	113	1.5	10	7.8	7.5	6.5	9.0	8.5	6.0	5.0	6.0
MAJESTIC	101	3.0	25	6.3	8.0	6.5	9.0	7.8	7.5	6.0	9.0
MAJOR	82	3.8	30	5.8	4.8	5.3	4.0	5.0	7.5	7.5	5.0
REGAL	72	4.3	40	5.8	5.8	6.5	6.8	4.0	6.0	7.0	4.0
SABRE	109	1.3	4	7.5	7.5	6.8	7.5	7.0	7.5	6.5	8.0
SIGNAL	67	4.3	27	6.3	6.8	5.8	5.3	5.0	5.5	8.0	6.0
WINDSOR	88	3.5	24	7.5	7.5	6.8	7.8	7.8	7.5	6.5	7.0
XPH 12211	96	3.5	24	8.0	7.3	6.5	8.0	9.0	6.0	5.5	6.0
WALLER/ DUNCAN	5	0.9	11	0.8	0.8	0.8	0.5	0.6	1.6	1.4	NS

¹ 9 = very uniform, 1 = not uniform; uniformity of head color: 9 = very uniform, 1 = very pale inside the head.

² 9 = domed, 4 = flat, 1 = concave.

³ 9 = very tight, 1 = loose.

⁴ 9 = very fine, 1 = unacceptably coarse

⁵ 9 = head totally exerted above leaves, 1 = head buried in foliage.

⁶ 9 = large, tall, 1 = very short.