

Fall Broccoli for Eastern Virginia – 1998

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This trial is a continuation of the 1997 fall broccoli trial. Those cultivars or clones that had the lowest yield in 1997 were dropped to make room for new entries in this trial. The same criteria were used in each trial.

The 1998 trial was direct-seeded on August 11, 1998. Fertilizer (1000 lb. 10-10-10) and herbicide (trifluralin, 0.5 lb. ai/A) were incorporated prior to planting. Plots were established as 3 rows on 6 ft. beds with 9 inch between-row spacing. A 25 foot length of the center row was harvested in each plot. Harvesting began on October 19 and continued through December 2. The early harvest included October 19, October 26 and November 2.

To meet USDA standards, the average diameter of the bunched head should not exceed 8 inches (20 cm) in a 14-count carton that weighs 22 lbs. Each bunch would average 1.57 lbs. As seen in Table 1, average head weight of most entries was less than 0.5 lbs. so the bunched product would average 3-4 heads per bunch. To meet the USDA restrictions on head diameter of the bunch, average diameter of individual heads should not exceed 10 cm.

As in 1997, several entries in the 1998 trial meet the current quality standards, combining slender stems, tight domed heads, and fine beading with reasonable yields. The head quality of several of the early-maturing varieties may be a concern. Average head diameter of Captain, Claudia, Regal, XPH 12211 and Signal exceeded the target of 10 cm. Loose heads with large bead size would be a concern for Everest, Signal, and to some extent, Regal.

Since broccoli is not a traditional crop in this area, growers will have to develop specific markets and the target market will specify the desired attributes. Changes in cultural management (spacing, plant population) may be needed to satisfy the smaller heads demanded by the crown cut market. Access to slush ice is a problem that must be addressed to maintain product quality after harvest.

Specific comments follow:

Arcadia - heads domed, somewhat lumpy, tight; foliage dark blue-green and upright.

Captain - heads relatively tight, moderately domed, purple-green; stems may be too coarse for a bunched product with excessive number of leaf scars that distract; may be more suitable for crown cut at a tighter spacing.

Claudia – poor stand suggests that this cultivar may be less heat tolerant at planting. Heads large and loose, relatively flat.

Decathlon – plants blue-green, spreading; head size varied, heads relatively uniform, stems slender but with large leaf scars. Elongated shanks are a serious concern.

Everest – plants spreading, light blue green; heads loose, dull green, and lumpy.

Excelsior – poor plant stand indicating lack of heat tolerance at planting, plants mostly upright; stems disproportionally large to head size, low percentage of marketable heads.

Laguna – plants upright with dark blue green foliage; stems coarse with large leaf scars, heads light in color.

Majestic – foliage more green than blue, leaves pinched. Heads tight and well domed, stems may be coarse with more leaf scars than some.

Major - plants spreading, leaves blue green; heads green with tinge of purple, evenly developed (not lumpy) large leaf scars.

Nomad – plants upright with narrow, blue green leaves, heads slightly lumpy, moderately green, tight, domes, fine bead size, slender stems; (first year of evaluation).

RBR 45 - plants spreading, leaves dark blue green, very uniform; heads quite domed, very tight, fine bead, stems maybe a bit coarse.

Regal – plants short, leaves horizontal and light blue green, early maturity; heads flat and loose.

Signal – plants short, early, heads loose, flat to concave, well exerted, not uniform

Windsor – plants short, leaves horizontal, heads flat and loose, and stems coarse.

XPH 12211 – very late, foliage blue green; tight heads, variable bead size, slightly lumpy.

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

Table 1. Yield, average weight, percentage of marketable heads, average stem and head diameter of broccoli - 1998.

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	331	.31	75.4	27.2	9.1	7.1
CAPTAIN	405	451	.49	74.6	37.4	13.0	8.9
CLAUDIA	522	568	.66	80.2	32.6	11.7	6.8
DECATHLON	0	424	.33	76.9	26.5	9.1	6.6
EVEREST	542	544	.42	90.0	21.4	8.7	4.5
EXCELSIOR	0	290	.38	68.0	30.8	9.7	7.2
LAGUNA	0	382	.32	78.0	29.3	6.3	6.7
MAJESTIC	0	519	.42	85.2	31.8	10.3	7.5
MAJOR	465	492	.45	77.8	28.5	9.9	6.4
NOMAD	0	575	.42	84.1	23.5	9.8	5.8
RBR 45	0	450	.35	89.9	28.3	9.7	6.9
REGAL	499	507	.46	75.6	28.9	10.4	5.8
SIGNAL	457	455	.33	88.9	25.9	12.6	5.8
WINDSOR	418	514	.45	81.8	29.4	10.2	6.7
XPH 12211	0	377	.48	71.1	32.0	12.0	7.7
WALLER/ DUNCAN	60	145	0.08	NS	4.7	2.7	1.3

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 – 1998.

	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	97	3.0	16	6.3	8.8	7.3	8.0	6.8	5.3	5.3	8.0
CAPTAIN	76	2.5	11	6.5	7.5	7.0	8.0	5.3	7.0	8.0	4.5
CLAUDIA	76	3.0	14	7.0	5.5	7.0	8.0	6.8	5.8	7.0	5.0
DECATHLON	94	3.0	15	7.3	7.3	7.0	6.5	7.5	6.5	6.0	7.3
EVEREST	76	3.0	14	7.0	5.0	5.5	4.0	3.8	6.3	8.0	5.0
EXCELSIOR	97	2.5	12	7.0	7.3	6.8	7.3	7.5	6.0	5.5	6.5
LAGUNA	97	1.5	4	7.3	8.0	6.25	6.5	7.8	7.5	5.5	8.0
MAJESTIC	97	3.0	16	6.3	8.3	6.5	8.0	7.0	6.5	5.0	6.5
MAJOR	76	2.8	11	4.0	5.3	4.0	6.5	4.8	5.8	7.8	4.3
NOMAD	97	2.5	12	7.8	8.3	6.8	7.8	7.5	7.0	7.0	7.0
RBR 45	95	3.3	16	7.5	9.0	6.3	8.3	8.0	7.3	6.8	7.3
REGAL	76	2.5	9	6.5	5.0	6.5	6.5	2.5	6.3	8.0	4.0
SIGNAL	69	2.5	11	3.3	3.5	6.0	3.0	3.0	6.0	8.0	5.0
WINDSOR	76	3.5	18	5.3	7.0	7.3	6.3	5.0	6.5	8.0	5.0
XPH 12211	104	2.0	9	6.5	8.0	5.8	7.8	7.3	6.3	4.8	6.0
WALLER/ DUNCAN(P=.05)	2	1.2	7	0.8	0.7	0.6	0.6	0.7	1.3	0.7	0.8

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.