'Cara's Choice' Blueberry

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Abstract. 'Cara's Choice' is a mid-season ripening, tetraploid, hybrid blueberry (*Vaccinium* × 'Cara's Choice') that was developed by the cooperative breeding program of the Agricultural Research Service of the U.S. Department of Agriculture (USDA) and the New Jersey Agricultural Experiment Station (NJAES). 'Cara's Choice' was given its name in recognition of its excellent fruit quality with improved sweetness, firmness, and flavor.

Origin

'Cara's Choice', tested as G-695, originated from the cross G-144 × US 165. This cross was made by A.D. Draper at Beltsville, Md., in about 1977 and is notable for having the diploid species selection *Vaccinium darrowi* Camp 'Florida 4B', and the hexaploid species, *V. constablaei* Gray and *V. ashei* Reade (rabbit-eye) in its ancestry (Fig. 1). 'Cara's Choice' was selected in 1981 from a seedling-field grown at the Atlantic Blueberry Co. Hammonton, N.J., by A.D. Draper. It was subsequently evaluated by A.D. Draper, G.J. Galletta, G. Jelenkovic, N. Vorsa, A.W. Stretch, and M.K. Ehlenfeldt at Atlantic Blueberry Co. from 1983 through 1996 in test rows of vegetatively propagated clones, and at Variety Farms, Hammonton, N.J., from 1996 to 2001 in a replicated planting of elite clones and standard cultivars, consisting of four replications of five plants, each in a randomized complete block design. Both the Atlantic Blueberry Co. and the Variety Farms trials were located on farms in USDA Plant Hardiness Zone 6, on soils that are mostly Atsion sand containing 3% to 15% organic matter. Cultural practices at Atlantic Blueberry Co. included the use of solid set irrigation for irrigation and frost protection. The yield trial plots at Variety Farms used similar practices with the addition of incorporating peat to the planting holes and mulching with pine bark. 'Cara's Choice' was introduced in 2000.

Description

Evaluation of the original 'Cara's Choice' plant and evaluations of subsequently propagated plants established in a replicated trial at Hammonton, N.J., during 1993–2001 indicated that the most impressive traits of 'Cara's Choice' were very sweet fruit, with balanced acidity, and an outstanding flavor that is both

complex and aromatic. Its fruit are uniformly medium sized, medium- to light-blue, with dry scars, and excellent firmness (Fig. 2). A detailed comparison of fruit characteristics of 'Cara's Choice', 'Weymouth' (Coville, 1937), 'Duke' (Draper, et al. 1987), and 'Bluecrop' (Draper and Hancock, 1990) (Table 1) shows 'Cara's Choice' to be superior to 'Weymouth' in berry size, color, firmness, and soluble solids. Its size is smaller than 'Duke' or 'Bluecrop', but is superior in firmness and soluble solids. The high levels of soluble solids in 'Cara's Choice' represent an approximate 20% to 25% relative increase in soluble solids over the average values for 'Duke' and 'Bluecrop'. A further distinctive feature is its ability to retain quality on the bush for several weeks, without significant declines in sweetness, acidity, firmness, or flavor. The estimated date for 50% ripe fruit was 27 June to 11 July, and averaged 4 July, about 8 d later than 'Duke' and about 5 d earlier than 'Bluecrop'. Yield in New Jersey on mature plants in 1999–2001 in mixed plantings has been 56% of 'Duke',

Fig. 1. Pedigree of 'Cara's Choice' highbush blueberry.

Fig. 2. Fruit of 'Cara's Choice' highbush blueberry.

Table 1. Fruit weight, color, firmness, soluble solids, titratable acidity, estimated 50% ripening dates, and representative yields for 'Weymouth', 'Duke', 'Bluecrop', and 'Cara's Choice' summarized across all harvests at Variety Farms in Hammonton, N.J., in 1996 through 2001. Plants were set in the field in 1993.

Cultivar	Berry wt (g)	Color (L) ^z	Firmness (g·mm ⁻¹) ^y	Soluble solids ^x	Titratable acidity (% citric acid) ^x	Date 50% ripe	Harvest interval	Yield/plant (kg)
Cara's Choice								
1996	---	---	---	---	---	---	---	---
1997	---	---	---	---	---	---	---	---
1998	1.6	29	161	13.4	0.67	27 June	24 June–27 July	3.6
1999	1.5	29	150	12.6	0.66	11 July	29 June–3 Aug	2.6
2000	1.1	36	161	12.8	0.82	2 July	27 June–24 July	3.3
2001	1.7	34	163	14.4	0.76	7 July	2 July–24 July	2.9
Weymouth								
1996	1.5	22	128	12.2	0.60	23 June	21 June–8 July	---
1997	1.7	24	125	11.3	0.94	24 June	20 June–7 July	---
1998	1.6	21	126	9.4	0.54	17 June	16 June–29 June	3.7
1999	1.0	25	124	10.1	0.51	24 June	15 June–7 July	3.7
2000	0.8	28	125	9.7	0.60	23 June	20 June–5 July	3.4
2001	1.2	27	152	10.7	0.80	18 June	15 June–2 July	2.8
Duke								
1996	2.1	30	151	10.7	0.40	27 June	21 June–8 July	---
1997	1.8	26	153	9.9	0.54	2 July	20 June–15 July	---
1998	2.1	26	134	10.1	0.49	20 June	16 June–6 July	6.3
1999	1.6	27	144	9.3	0.38	29 June	22 June–13 July	7.4
2000	1.2	33	160	9.9	0.39	21 June	19 June–6 July	4.7
2001	1.8	30	147	11.0	0.44	24 June	18 June–9 July	3.5
Bluecrop								
1996	2.0	27	113	11.7	0.65	10 July	8 July–5 Aug	---
1997	1.9	28	110	11.3	0.80	13 July	11 July–28 July	---
1998	1.8	27	126	10.6	0.80	5 July	24 June–21 July	5.4
1999	1.6	30	138	10.5	0.70	14 July	29 June–3 Aug	6.0
2000	1.3	34	128	11.1	0.70	5 July	27 June–31 July	4.5
2001	1.7	31	124	12.9	0.80	5 July	2 July–24 July	3.7
1996–2001 averages^w								
Cara's Choice	1.5 b	32 c	159 b	13.3 c	0.73 b	4 July c	28 June–28 July	3.1 a ^v
Weymouth	1.3 a	25 a	130 a	10.6 ab	0.67 b	22 June a	17 June–3 July	3.4 a
Duke	1.8 c	29 b	148 b	10.2 a	0.44 a	26 June b	19 June–9 July	5.5 b
Bluecrop	1.7 c	30 b	123 a	11.4 b	0.74 b	9 July d	28 June–28 July	4.9 b

^zColor in the L*a*b* color co-ordinate system as defined by the Commission Internationale l'Eclairage (CIE). L co-ordinate indicates lightness; higher numbers indicate lighter color. Color meter aperture, 50 mm.

^yGrams of force needed to produce 1mm of deflection, averaged across 30 intact fruit.

^xSoluble solids and titratable acidity were determined on a blended one cup sample of fruit.

^wAnalysis of variance performed using the SAS GLM procedure (SAS Institute, Cary, N.C.). Means within columns with different letters are significant at the 0.05 level.

^vYield averages represent yield across 1998–2001, when plants had reached mature stature.

and 63% of 'Bluecrop' (Table 1). Yields have been remarkably stable.

'Cara's Choice' is an moderate to low-growing bush, that flowers slightly later than 'Bluecrop' in most years, but may flower almost as early as 'Weymouth' in others. It has distinctive blue-green foliage, which makes it easily recognizable in comparison to most northern highbush blueberry cultivars. Studies in New Jersey have shown that 'Cara's Choice' is relatively resistant to mummy berry blight caused by the fungus *Monilinia vaccinii-corymbosi* Reade (Honey) (ranking 25 in a group of 76 cultivars), and has average resistance (ranking 39 out of 76) to the secondary, mummy berry fruit-infection stage (unpublished data). 'Cara's Choice' is relatively susceptible to anthracnose fruit-rot (ranking 71 out of 100), but is better than 'Bluecrop' (92 of 100) and 'Blueray' (81 of 100) (Polashock et al., 2005). 'Cara's Choice' produces moderate yields

in New Jersey, but is untested in most other regions. Because it has medium fruit size and relatively low yields, it is highly recommended that 'Cara's Choice' be planted with another cultivar to obtain the benefits of cross-pollination on size and yield. 'Cara's Choice' is recommended as a midseason, high-quality, specialty cultivar primarily for commercial growers, pick-your-own growers, and home growers in northeastern temperate regions, including New Jersey and adjoining states. The presence of southern-species germplasm this cultivar's genetic background suggests it may also do well in more southerly areas.

Availability

Plants of 'Cara's Choice' have been distributed to commercial propagators; neither the USDA nor NJAES currently has plants for distribution. Growers may request information

on how to obtain propagules by contacting M. K. Ehlenfeldt, USDA–ARS, at the Phillip E. Marucci Blueberry and Cranberry Research and Extension Center, 125A Lake Oswego Road, Chatsworth, NJ 08019. Genetic material of this release has been deposited in the National Plant Germplasm System where it will be available for research purposes.

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