

HORTSCIENCE 25(12):1668-1670. 1990.

'Blue Ridge' and 'Cape Fear' Southern Highbush Blueberries

J.R. Ballington¹, C.M. Mainland¹, and S.D. Rooks²

Department of Horticultural Science, North Carolina State University, Raleigh, NC 27695-7609

A.D. Draper³ and G.J. Galletta⁴

U.S. Department of Agriculture, Fruit Laboratory, Beltsville, MD 20705

Additional index words. fruit breeding, *Vaccinium corymbosum*, *V. darrowi*, stem blight

'Blue Ridge' and 'Cape Fear' are low-chilling, early midseason and mid-early rip-

ening southern highbush blueberry cultivars, respectively, that have field tolerance to stem blight [*Botryosphaeria dothidea* (Mouq. ex Fr.) Ces & de Not.] in eastern North Carolina. 'Blue Ridge' produces medium to large fruit with excellent color, firmness, and pleasant high-acid flavor. Its picking scar is only fair (of large diameter, with occasional tearing). The name 'Blue Ridge' reflects the broad adaptation this cultivar has exhibited throughout the coastal plain, Piedmont, and lower elevations in the mountains of North Carolina. 'Cape Fear' is very precocious and productive, with very large fruit of fine color, picking scar, and firmness, and average quality. The name 'Cape Fear' is indicative of the proximity of the Cape Fear River basin to the commercial blueberry industry in North

Received for publication 12 Oct. 1989. Paper no. 12386 of the Journal Series of the North Carolina Agricultural Research Service, Raleigh, NC 27695 7602. We express our appreciation to R.D. Millholland and William Cline for screening for cane canker and stem blight resistance, and to Terry Bland, Joseph Fedrowitz, and Yvonne Isenberg for technical assistance. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper therefore must be hereby marked *advertisement* solely to indicate this fact.

¹Professor.

²Blueberry Breeding Researcher.

³Research Geneticist, retired.

⁴Research Geneticist.

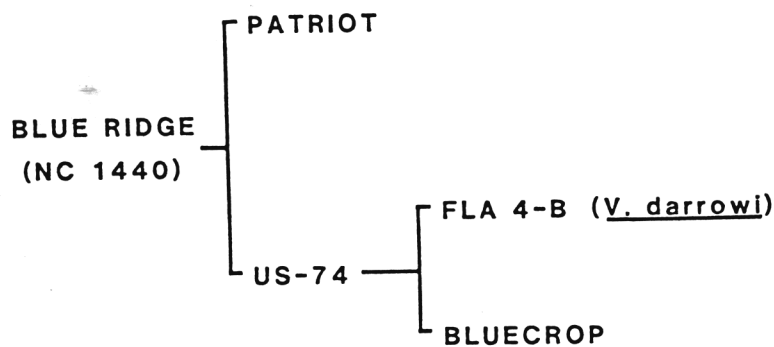


Fig. 1. Parentage of 'Blue Ridge' southern highbush blueberry.

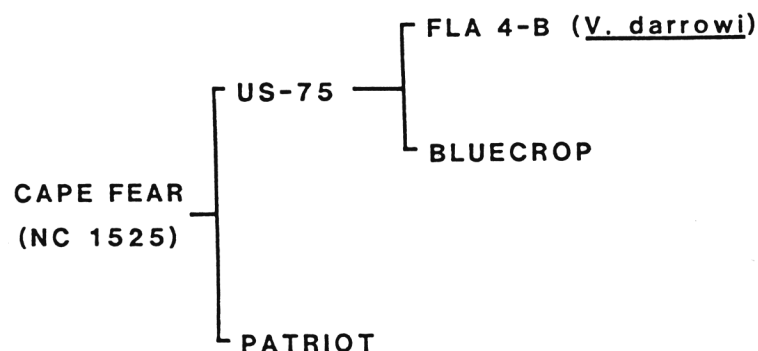


Fig. 2. Parentage of 'Cape Fear' southern highbush blueberry.

Table 1. Performance of highbush blueberry cultivars, University Farms Research Unit 4, Raleigh, N.C., 1986.²

Selection	Yield ² (g/plot)	Ripe (%) 2 June 1986	Size ³ (cup count)	Color ⁴	Scar ⁴	Firmness ⁴	Flavor
Blue Ridge	2461	77	73	8.0	6.3	8.0	8.0
Bluecrop	2807	7	78	8.0	6.3	7.3	7.0
O'Neal	2980	87	58	7.5	8.0	8.0	8.0
LSD 0.05	NS	---	17	0.3	0.9	0.3	0.3

²Means of three replications, fifth growing season.

³Number of berries in a 226-cm³ container.

⁴Rated on a 1-9 scale, where 5 and below are unsatisfactory, 6 is acceptable, 7 is average, and 8 and above are superior.

Table 2. Performance of highbush blueberry cultivars, Castle Hayne, N.C., 1986 (fourth growing season).

Cultivar	Survival ² (%)	Yield (g/plot)	Ripe (%) 6 June 1986	Size ³ (cup count)	Color ⁴	Scar ⁴	Firmness ⁴	Flavor ⁴
Bluechip	60	977 ^w	7	54	7.8	7.5	7.5	7.4
Croatan	85	1792	55	79	7.0	6.8	7.0	6.5
Bounty	85	1133 ^w	9 ^v	56	7.9	7.5	7.5	7.4
Cape Fear	100	2583	43	60	7.4	7.1	7.7	7.0
O'Neal	95	877 ^w	58	67	7.3	7.6	7.9	7.9
LSD 0.05		462		7	0.2	0.3	0.3	0.2

²Plant losses were due to stem blight.

³Number of berries in a 226-cm³ container.

⁴Rated on a 1-9 scale, where 5 and below are unsatisfactory, 6 is acceptable, 7 is average, and 8 and above are superior.

^wCrop reduced due to freeze injury.

^vAtypical, due to cold injury.

Carolina. These cultivars are being released jointly by the North Carolina Agricultural Research Service and the U.S. Dept. of Agriculture (USDA). Because of its picking scar, 'Blue Ridge' is primarily recommended for planting for local sales and pick-your-own (PYO) outlets in the coastal plain, Piedmont, and lower mountains with appropriate soil

modification and permanent irrigation. 'Cape Fear' is intended primarily as a large-fruited, attractive cultivar with excellent picking scar and firmness for hand harvest and commercial shipment for fresh-market outlets. It is also adapted for PYO plantings in the piedmont and lower mountains with appropriate soil modification and permanent irrigation.

Origin

'Blue Ridge', tested as NC 1440, was selected in 1975 from a cross of 'Patriot' x US 74 [Fla. 4B (*Vaccinium darrowi*) x 'Bluecrop'] (Fig. 1). Tested as NC 1525, 'Cape Fear' resulted from the cross US 75 [Fla. 4B (*V. darrowi*) x 'Bluecrop'] x 'Patriot' (Fig. 2). Both crosses were made by A.D.D. at Beltsville, Md. 'Blue Ridge' was originally selected at White Lake, N.C., and 'Cape Fear' at Castle Hayne, N.C., in 1975 by G.J.G. and A.D.D. They were evaluated by J.R.B., C.M.M., S.D.R., and A.D.D. in the coastal plain, Piedmont, and lower mountains of North Carolina. Both cultivars were also included in cooperative trials in seven southeastern states and are recommended for grower trials throughout this region.

Description and performance

'Blue Ridge' and 'Cape Fear' were first established in duplicate-plot selection trials at the Horticultural Crops Research Station, Castle Hayne. Based on their performance in these trials, they were established in replicated trials; 'Blue Ridge' at Castle Hayne, White Lake, and Raleigh, N.C., and 'Cape Fear' at Castle Hayne and White Lake. Additional duplicate plots of both cultivars were also established at Fletcher, in western North Carolina, and also at Raleigh for 'Cape Fear'. Because both these cultivars are early blooming and irrigation for frost protection was not available at White Lake, the crop was usually lost to freezing temperatures and no meaningful data were collected on this site, except for stem blight tolerance.

'Blue Ridge' was compared with 'Bluecrop' and 'O'Neal' at Raleigh (Table 1). It was not statistically different from either 'Bluecrop' or 'O'Neal' for yield. In this test, it was much earlier than 'Bluecrop'. Fruit size was equal to 'Bluecrop', but significantly smaller than 'O'Neal'. Fruit color was superior to 'O'Neal' and equal to 'Bluecrop'. Picking scar was acceptable, which was equal to 'Bluecrop' but inferior to 'O'Neal'. In our opinion, it was outstanding for fruit firmness and flavor, which was equal to 'O'Neal' and superior to 'Bluecrop'.

Plants of 'Blue Ridge' are vigorous and very upright in habit. Flowers are self-fertile; however, cross-pollination increases fruit size and results in earlier ripening. 'Blue Ridge' has been easy to propagate from hardwood and softwood cuttings. 'Blue Ridge' is susceptible to stem canker [*Botryosphaeria corticis* (Demaree & Wilcox) Arx and Muller]; thus, plantings should be made with canker-free nursery plants. It appears to be field tolerant to stem blight in eastern North Carolina (5% infected vs. 44% infected on the highly susceptible 'Bluechip' at White Lake in 1989); however, it has been susceptible in greenhouse screening tests. It is also susceptible to mummy berry [*Monolinia vaccinii-corymbosi* Reade (Honey)]. It is particularly recommended as a high-quality PYO southern highbush cultivar to plant with 'O'Neal' in the coastal plain and Piedmont and with 'Cape Fear' at lower elevations in

the southern mountains.

'Cape Fear' was compared with 'Bluechip', 'Bounty', 'Croatan', and 'O'Neal' at Castle Hayne (Table 2). It was significantly higher-yielding than all other cultivars, with fruit size equal to very large-fruited cultivars such as 'Bluechip' and 'Bounty'. Fruit color was above average but not as good as 'Bluechip' or 'Bounty'. Picking scar was superior to 'Croatan' but unequal to the other cultivars. Fruit firmness was superior to 'Croatan' and equal to the other cultivars. We judged the flavor of the fruit of 'Cape Fear' to be average; however, it was superior to 'Croatan', the standard North Carolina cultivar that ripens in about the same season. If the fruit is cooled to 2C immediately following harvest, the flavor is good. In unusually warm ripening seasons, when fruit of 'Cape

Fear' has been allowed to become overripe, it occasionally has a metallic flavor. Therefore, for optimum quality with this clone, it is important both to remove field heat from fruit immediately following harvest and not to allow fruit to become overripe.

The 'Cape Fear' plant is vigorous and semi-upright in habit. The flowers are self-fertile, but, as with 'Blue Ridge', it benefits from cross-pollination. It can be propagated readily from hardwood or softwood cuttings. 'Cape Fear' is susceptible to stem canker, but it can be grown successfully in the commercial blueberry production area of southeastern North Carolina if fields are established with stem canker-free nursery plants. It is field resistant to stem blight. There has been no infection by stem blight in the field at Castle Hayne (Table 2), White Lake, or

Fletcher, and it appears to be the most tolerant of any cultivar developed in North Carolina.

The chilling requirements of 'Blue Ridge' and 'Cape Fear' appear to be between 500 and 600 hr below 7.5C. Since both these cultivars bloom early, overhead irrigation should be provided to protect against freezing temperatures during bloom.

Availability

A list of nurseries propagating plants of 'Blue Ridge' and 'Cape Fear' blueberries is available from J.R.B. Neither the North Carolina Agricultural Research Service nor the Agricultural Research Service, USDA, has plants for sale or distribution.