

'Friendship' Blueberry

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Except under rare conditions where a specialized or protected microclimate may exist, highbush blueberries (*Vaccinium corymbosum* L.) are generally not sufficiently cold hardy for consistent production or long-term

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survival in Wisconsin. The blueberry breeding program at the Univ. of Minnesota, initiated in 1967 (Luby et al., 1986) with the objective of developing low-statured, cold-hardy, high-quality cultivars, has thus been of particular interest to Wisconsin, considering the similarities in climate in both states. Through the cooperation of Minnesota researchers, a replicated trial of 'Northblue', 'Northsky', and 'Northcountry', the first blueberry cultivars introduced from the Minnesota program, was established at the Hancock Experiment Station, Hancock, Wis., in 1982 using 2-year-old potted plants. Micropropagated blueberry clones of the same age, designated WI 1 and WI 2, were also included in this trial. We propose 'Friendship' as the name for the WI 2 blueberry, which has performed well in this trial.

Origin

'Friendship' originated from open-pollinated seed collected in the early 1970s from

an isolated native *V. corymbosum* blueberry population growing in a marsh near the village of Friendship (lat. 44°N) in Adams County, Wis. A brief historical perspective by Dana and Bigger (1980) on the discovery of this native stand described it as a mixture of *V. corymbosum* and *V. angustifolium* Ait. and noted that fruit was collected from taller plants typical of *V. corymbosum*. Leaf and fruit samples from these plants were subsequently identified as *V. corymbosum* by herbarium specialists at the Univ. of Wisconsin-Madison and are the first recorded collection of this species in Wisconsin.

No controlled evaluations of these seedlings were made before 1982. Of the original seedling population, five plants remained in 1980. Selections WI 3, WI 4, and WI 5 from this population have been maintained but were not considered of sufficient merit to be included in the evaluation.

Table 1. Fruit and plant size of blueberry cultivars grown at Hancock, Wis., in 1989.

Cultivar	Fruit wt ^a (g/berry)		Plant size ^b	
	July	Aug.	Ht (cm)	Spread (cm)
WI 1	0.6	0.5	82	68
Friendship	0.7	0.6	78	61
Northsky	0.7	0.6	38	53
Northcountry	0.6	0.6	81	68
Northblue	1.8	1.1	76	65

^aMean for 50 berries per harvest.

^bMean plant size for five plants, age 9 years.

Table 2. Annual and seasonal yield of blueberry cultivars at Hancock, Wis.

Cultivar ^z	Yield ^y (kg/plant)				1989 Seasonal yield (kg/plant)			Total
	1983	1984	1985	1986	13-18 July	21-25 July	28 July- 4 Aug.	
WI 1	0.01	0.11	0.27	0.45	0.22	0.58	0.25	1.05
Friendship	0.03	0.54	0.80	1.28	0.22	0.82	2.01	3.05
Northsky	0.07	0.25	0.83	0.48	0.70	0.63	0.40	1.73
Northcountry	0.05	0.30	0.69	0.79	0.24	1.40	0.46	2.10
Northblue	0.14	0.75	1.10	0.76	1.67	1.34	0.93	3.94

^yPlanting established with 2-year-old potted plants in 1982.

^zNo yield was obtained in 1987 and 1988 as a result of winter injury in both seasons and severe drought and high temperatures in 1988.

Description and performance

Mature plants of 'Friendship' are similar in growth habit and stature to 'Northcountry', averaging 0.7 to 0.8 m tall in Wisconsin (Table 1). Although genetic studies have not been made, plant growth, fruiting, and stature suggest it is a hybrid of *V. corymbosum* x *V. angustifolium*.

When sufficient water is provided, fruit are medium in weight (Table 1), with a mild subacid sweet flavor reminiscent of native *V. angustifolium* in Wisconsin. A medium waxy bloom on fruit, similar to 'Northcountry' or 'Northsky', results in a sky-blue fruit, a color slightly darker than the Minnesota cultivars at maturity. Since fruit color develops before fruit maturity, berries must remain on the plant until ripe for best flavor. Fruit size remains uniform throughout much of the harvest season, which extends 3 to 4 weeks, depending on the season.

Full bloom of 'Friendship' coincides with 'Northsky', is 2 to 3 days earlier than 'Northcountry', and up to 7 days earlier than 'Northblue' in central Wisconsin. The degree of self-fruitfulness for 'Friendship' is unknown. Peak harvest for 'Friendship' varies by season and occurs 7 to 10 days later than for 'Northblue' and up to 7 days later than for 'Northcountry' (Table 2). 'Friendship' was comparable to 'Northcountry' in yield in most seasons.

Periodically, winter cold injury occurs on 'Friendship' and is similar to that observed on Minnesota clones in Wisconsin. Severe low-temperature injury is apparent following winters in which minimum temperature is below -30C. Cold injury is manifested in death of terminals on previous season's growth, loss of fruit buds, and negligible bloom.

In a commercial demonstration planting in Wisconsin, all the Minnesota clones and 'Friendship' displayed light to moderate susceptibility to stem canker (*Godronia* sp.) infection. Susceptibility of 'Friendship' to other common blueberry diseases is unknown.

Processing potential has not been evaluated. Fruit softness in 'Friendship', similar to that of 'Northcountry', suggests 'Friendship' is not suited to mechanized harvest with currently available equipment. Cultural practices suggested for Minnesota half-high blueberry cultivars (Hoover et al., 1988) are considered suitable for 'Friendship'. Based on plant spacing trials established in 1984, we recommend 0.8 to 1 m between plants

within rows and 2.5 to 3 m spacing between rows, depending on the equipment to be used. In research on N nutrition of blueberry, 'Friendship' was found to preferentially take up the ammonium form (NH₄-N) vs. NO₃-N (Peterson et al., 1988). Plant size and dry matter yield were doubled in 'Friendship' with NH₄-N, compared to NO₃-N.

'Friendship' is expected to fill a niche in the production and marketing of fruit from half-high blueberry cultivars. Late-season ripening and an extended harvest season could complement pick-your-own marketing systems where these characteristics may be desirable. Moderate growth, high productivity, and excellent red fall leaf color also make this cultivar desirable for ornamental plantings where appropriate soil pH (4.5 to 5.5), adequate soil moisture, and soil drainage can

be maintained. 'Friendship' retains its leaves late into fall, suggesting late-season cold acclimation might be more conducive to greater winter injury than for other cultivars. Observations on the degree of winter injury in our plantings over nine growing seasons do not support this hypothesis.

Availability

'Friendship' blueberry is propagated under a joint exclusive royalty agreement with Knight Hollow Nursery, 3333 Atom Rd., Middleton, WI 53562 and Hartmann's Plantation, 310 60th St., P.O. Box E, Grand Rapids, MI 49056. Interested nurseries and individuals should contact either of these nurseries directly.

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