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The 'Sharpblue' Southern Highbush Blueberry[1]

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'Sharpblue' and 'Flordablue' were the first low-chill highbush blueberry varieties released for commercial production (4,5,6). They were bred by hybridizing northern highbush cultivars and selections (primarily *Vaccinium corymbosum* L.) with low-chill native blueberries (*V. darrowi* Camp and *V. ashei* Reade) from north and central Florida (1,2,3). 'Sharpblue' and 'Flordablue' were released by Ralph H. Sharpe and Wayne B. Sherman from the University of Florida in 1976. 'Avonblue,' a variety of similar parentage, was released from the same program the following year. Within the past 10 years, many blueberry varieties with reduced chilling requirements have been developed in other breeding programs by combining genes from northern highbush with genes from *V. darrowi*. These have become known as "southern highbush" varieties. The first developed outside of Florida was 'Georgiagem,' released in 1986 from the cooperative U.S.D.A.-University of Georgia breeding program. Thus, in addition to its importance as a commercial variety, 'Sharpblue' was also important as a pioneer variety that showed the commercial potential of low-chill highbush blueberries and the cultural problems that needed to be overcome in growing highbush blueberries in low-chill zones.

The first blueberry varieties that could be grown commercially with less than 500 hours of chilling were rabbiteyes. These were domesticated forms of *V. ashei*, which is native along the Gulf Coast from northwest Florida to southeast Georgia. Although rabbiteye blueberries were highly productive and well adapted in north Florida and in the coastal states from east Texas to North Carolina, they had two major disadvantages that led Ralph Sharpe to begin breeding low-chill highbush blueberries, beginning about 1948. First, rabbiteyes ripened late in the season compared to highbush. Highbush blueberries produced in North Carolina ripened before rabbiteye blueberries grown in Florida. Second, fruit set on rabbiteye varieties was not reliable south of Gainesville in the northern Florida peninsula, and commercial production was not feasible south of Orlando. Sharpe noted that the well-adapted evergreen native blueberry of the Florida peninsula, *V. darrowi*, could be hybridized much more readily with the northern highbush blueberry than with the rabbiteye. Several factors indicated good possibilities for the development of low-chill, early ripening, heat-adapted highbush blueberries. *V. darrowi* was highly vigorous and well adapted in Florida. Improved northern highbush cultivars from Michigan and New Jersey were a potential source of genes for high fruit quality, high yields, and early-season ripening. Fertile hybrids could be obtained between these two gene pools. A major breeding program to combine the best features of *V. darrowi* and the northern highbush cultivars was begun by Sharpe in 1950. By 1975 approximately 150,000 hybrid seedlings had been grown and evaluated.

The following description of the origin of 'Sharpblue' and 'Flordablue' is taken from Sharpe and Sherman (6): "A diploid species, *V. darrowi*, native to central Florida, was chosen for adaptability and crossed with the

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hexaploid species, *V. ashei*, native to northwest Florida. This cross resulted in five tetraploid seedlings from approximately 7,500 hand pollinations. *V. darrowi* was also crossed with northern highbush cultivars, which resulted in 31 tetraploid hybrids from approximately 1,600 hand pollinations. These 31 hybrids were apparently a result of unreduced pollen in the diploid species, *V. darrowi*. Further crosses were made by intercrossing the above original tetraploid hybrids and by backcrossing them to northern highbush cultivars. Seedlings with better fruit quality and adaptability to Florida's climate were selected, and hybridization continued. 'Flordablue' and 'Sharpblue' blueberries originated at Gainesville, Florida, from 1964 to 1965 crosses of Florida selections with complex parentage."

As of 1989, approximately 700 acres of southern highbush had been planted in Florida, and 90% of these plants were 'Sharpblue.' In addition, 400 acres of 'Sharpblue' have been planted in eastern Australia. The low-chilling requirement of 'Sharpblue' limits its usefulness outside of Florida in the U. S., but the variety could be useful in certain highland areas of the tropics. 96In spite of the fact that much of the 'Sharpblue' pedigree traces back to lowbush *V. darrowi*, 'Sharpblue' has the highbush blueberry growth habit. It has large, dark-green leaves which tend to remain evergreen in Florida if the plants are fertilized and watered heavily during the fall and if leaf diseases are not severe. However, growers normally reduce fertilization and watering in the fall to increase plant dormancy and reduce fall and winter flowering. 'Sharpblue' roots readily from softwood cuttings and is easy to grow in the nursery.

The ability of 'Sharpblue' to set fruit after self pollination has been studied, and the results have varied. The number of bees available for pollination and temperatures during pollination may greatly affect self-fruitfulness in 'Sharpblue.' Observations in commercial blueberry fields in north and central Florida suggest that 'Sharpblue' should not be planted in solid blocks without a companion variety for cross pollination. Fruit sets, fruit size, yields, and earliness all appear to be reduced in solid blocks of 'Sharpblue' compared to blocks in which 'Sharpblue' is interplanted with cross pollinators such as 'Flordablue' and 'Misty.'

'Sharpblue' normally begins flowering in late January to mid February in the Gainesville area in north-central Florida. Overhead irrigation is necessary to protect against late freezes in this area. First commercial harvest is normally during the last week in April. When grown 150 miles farther south, in the Sebring area of south-central Florida, which averages about 150 chill hours per winter, 'Sharpblue' normally flowers during January, February, and early March. Commercial harvest begins in late March on farms where the early flowers have been protected from freezes and continues into late May. In Coffs Harbor, N.S.W. Australia, 'Sharpblue' continues to flower and fruit throughout the year, and some fruit can be harvested in every month of the year.

'Sharpblue' berries are medium to large, averaging over 2 g per berry in well cross-pollinated field plantings. The color of berries on the bush is light blue, but berries tend to become dark blue during harvest and packing as the surface wax is disturbed. 'Sharpblue' berries have excellent flavor and texture. At the time of its release, 'Sharpblue' was not recommended for planting as a shipping berry because of limited firmness and because the scar has a tendency to tear upon picking. Growers found, however, that dry weather, which is normal before and during the 'Sharpblue' harvest season in Florida, together with hand-harvesting and careful post-harvest

handling, enabled them to ship the fruit successfully on the fresh market. Thus, 'Sharpblue' added at least one month to the season of availability of fresh blueberries on the world market, since 'Sharpblue' berries can be shipped from Florida at least one month earlier than both northern highbush blueberries from southeastern North Carolina and rabbiteyes from north FLorida and southeast Georgia. As the first commercial highbush variety with a chilling requirement of less than 800 hours, 'Sharpblue' has been important in demonstrating the possibilities of low-chill highbush blueberries. It has also been important in showing what characteristics future low-chill blueberry varieties will need to be successful in the southeastern U.S. Although total acreage of 'Sharpblue' in Florida is not great, there are many small and experimental plantings, and what has been learned from these plantings is laying the groundwork for larger plantings of 'Sharpblue' or other low-chill highbush varieties in the future.

Literature Cited

1. Sharpe, R.H. 1954. Horticulture development of Florida blueberries. Proc. Fla. State Hort. Soc. 66:188-190.
2. Sharpe, R. H. and G. M. Darrow. 1959. Breeding blueberries for the Florida climate. Proc. Fla. State Hort. Soc. 72:308-311.
3. Sharpe, R. H. and W. B. Sherman. 1971. Breeding blueberries for low chilling requirement. HortScience 6:145-147.
4. Sharpe, R. H. and W. B. Sherman. 1976. 'Sharpblue' blueberry. HortScience 11:65.
5. Sharpe, R. H. and W. B. Sherman. 1976. 'Flordablue' blueberry. HortScience 11:64-65.
6. Sharpe, R. H. and W. B. Sherman. 1976. 'Flordablue' and 'Sharpblue,' Two new blueberries for central Florida. Univ. Fla. Agric. Exp. Sta. Circ. S-240.

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Introduction
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The genus *Rubus*, in the Rosaceae family includes blackberries and raspberries. There are 12 and as per some authorities 15 subgenera in the *Rubus*. Among these, two *Idaeobatus*. Focke, and *Rubus* (Eubatus) have most of the commercially important fruit crops. Although commonly used by the horticulturists, *Eubatus* is the incorrect name for this subgenus. According to the International Code of Botanical Nomenclature (1) the type subspecies is named after the genus, without authority. Therefore the correct names of the subgenera are *Idaeobatus* Focke and *Rubus*. Two other fruit crops which are less important are arctic raspberry *R. cyclotus* and *R. chamaemorus* which is cloudberry.

Many morphologically important differences exist between these subgenera. However the most commonly used criterion for classification is the method of separation of mature fruit from the plant. In the *Idaeobatus*, the fruit is an aggregate of small drupelets which separates from the receptacle and has the appearance of a thimble.

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