

The Highbush Blueberry Plant and Variety Characteristics

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Highbush blueberries (*Vaccinium corymbosum*) belong to the same family of plants as cranberries, rhododendrons, and azaleas. They have limited adaptation to the extreme cold winter temperatures of northern New England, but may grow satisfactorily on warmer, protected sites where temperatures do not fall below -25 degrees F. In a good site, the plants can be quite long-lived (50+ years) and produce many good crops.

The roots of a highbush blueberry plant are fibrous and shallow, without strong tap roots or fine root hairs. They extend laterally to about the drip line of the leaves, but can't penetrate heavy, clay soils. Although the roots have a low absorptive capacity, they are usually infected with a beneficial endomycorrhizal fungus, which aids in water and nutrient uptake. Infection and activity of the fungus is enhanced in sandy, organic, nutrient poor soils.

The upright, perennial canes of a blueberry bush can reach six to eight feet in height. New canes emerge from the crown of the plant just below the soil surface each year. These may number very few to many, depending on the variety and the health of the plant. Initial growth of the canes can be quite vigorous, growing three feet or more in just a few weeks. A second flush of growth often follows in the late summer, which may form a few flower buds, but the late, tender growth is often damaged by cold winter temperatures.

Vegetative buds on the canes develop into shoots or branches during the growing season. The growth usually occurs in two flushes; an initial burst of growth in the spring, followed by a second growth period in the late summer. Fruit buds form at the tips of the shoots during the late summer and fall. On a typical healthy shoot there will be five to ten fruit buds, followed by smaller vegetative buds, which will give rise to new shoots in the spring.

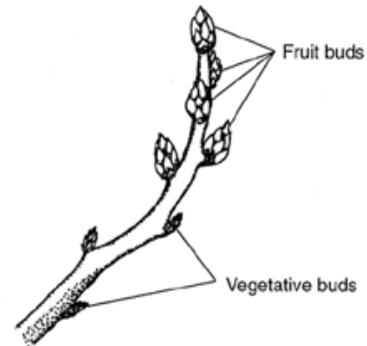


Figure 1. Types of buds on a blueberry shoot

Each tear-dropped shaped fruit bud contains several flower buds. The buds remain dormant on the shoots through the winter until they have met a chilling requirement of 600-1000 hours of temperatures below 45°F. The length of the chilling requirement varies among varieties, but once it is met the plant may break dormancy if the temperatures rise into the 50's or 60's for an extended period of time. This creates a high winter injury risk for plants which have a low chilling requirement, as they may break dormancy when we get a late winter thaw, and are then injured when temperatures fall back below freezing.

Flower buds open in the spring once the chilling requirement is met and the temperatures begin to stabilize well above freezing. The tear-drop shaped buds swell and open, revealing five to ten flower buds within. The flowers droop downwards and have elongated, white, fused petals known as a corolla. The small opening of the corolla makes pollinating the flowers difficult for honeybees, but both small wild bees and large bumblebees can do a very good job of pollinating. Most blueberry varieties are not very self fertile, and so require a second variety to get good pollination. The bloom period typically lasts one to two weeks. Blossoms may be susceptible to frost if they emerge too early in the season, so it is best to avoid very early maturing varieties that tend to have early bloom.

Blueberry fruit ripen two to three months after bloom, depending upon variety. Some varieties may ripen too late to be suitable for northern New England. Color is not always a good indicator of ripeness, as fruit may still increase up to 35% in size after they are fully colored. Sugar content can increase significantly after coloring as well, but only if the fruit remains on the plant. It is best to wait several days after full color develops to begin harvesting to assure good fruit quality.

Suggested Varieties

Because of New England’s cold winter temperatures and short growing season, you should select blueberry varieties that are described as very hardy and that ripen early or midseason ([Table 1](#)). It is usually best to plant more than one variety. Although some blueberries are self-fruitful, cross-pollination among different varieties will improve fruit set and fruit size. In addition, using two or more varieties that ripen at different times will lengthen the harvest season. The varieties listed below have a good track record in New England. For further, locally specific recommendations, contact your State Extension Fruit Specialist.

Variety	Plant Characteristics	Fruit Qualities	Ripening Season
Patriot	Short, upright, moderate vigor	Medium-large, firm, excellent quality	Early–midseason
Northland	Short, spreading growth habit, vigorous	Medium-small, soft, fair quality, high yields	Early
Bluecrop	Full-sized, upright	Large, firm, good quality	Midseason
Blueray	Full-sized, spreading growth habit	Large, firm, good quality, high yields	Early–midseason
Meader	Full-sized, upright, vigorous	Large, firm, fair quality	Early–midseason
Jersey	Full-sized, upright	Medium-size, firm, fair quality, high yields	Late
Nelson	Full-sized, upright	Large, firm, good quality	Mid–late
Blue Gold	Short, upright, moderate vigor	Medium-sized, good quality	Mid–late
St. Cloud	Short, spreading	Medium-sized, dark, good yields	Midseason
Elliot	Upright, bushy	Small-medium size, good yield, fair quality	Late (too late?)