

Blueberry Cultivars for the Pacific Northwest

Bernadine C. Strik, Chad E. Finn, and Patrick P. Moore



'Bluecrop' (northern highbush)

There are five main types of blueberries grown in the United States: northern highbush, southern highbush, rabbiteye, lowbush, and half-high. The northern highbush is most common type grown worldwide and in the Pacific Northwest.

This publication briefly describes each type of blueberry. Tables 1 and 2 list cultivars that are suitable for the Pacific Northwest.

Northern Highbush Blueberries

Northern highbush blueberries (*Vaccinium corymbosum*) are native to much of the eastern and northeastern United States, from the Appalachian Mountains to the Atlantic Ocean. The plants grow 5 to 9 feet tall. One named selection from the wild,

'Rubel', was introduced in the early 1920s. Many commercial northern highbush cultivars have been developed through traditional breeding programs. Northern highbush cultivars are listed in Table 1.

Southern Highbush Blueberries

Southern highbush blueberries are complex hybrids of *V. corymbosum* and a native, evergreen Florida species (*V. darrowii*). The plants grow about 6 to 8 feet tall. In mild production regions, southern highbush blueberries can be grown in an evergreen system, in which the plants retain old leaves through the winter to advance the spring fruit crop.

This type was developed to allow blueberry production in low-chill areas (regions with mild winters,



'Bluejay' (northern highbush)



'Powderblue' (rabbiteye)

such as Florida and California). A dormant blueberry plant requires a certain amount of chilling (between approximately 32°F and 45°F) to break bud and flower normally. Southern highbush blueberries have a much lower chilling requirement (200 to 300 hours) than northern highbush blueberries (more than 800 hours).

Southern highbush blueberries will grow in the Pacific Northwest but have low yields. Bushes bloom in late winter, and flowers are frequently damaged by frost. We do not recommend southern highbush blueberry cultivars for the Pacific Northwest. Some hybrid cultivars, such as 'Legacy' and 'Ozarkblue', can be grown successfully west of the Cascades; however, cold damage to flower buds has been observed in these cultivars when temperatures drop below approximately 0°F to 5°F.

Rabbiteye Blueberries

Rabbiteye blueberries (*V. virgatum* syn. *V. ashei*) are native to the southeastern United States. The plants grow from 6 to 10 feet tall. Rabbiteye cultivars were developed in regions with long, hot summers, and they behave differently in the Pacific Northwest than in their home environments. In this region, the plants tend to be smaller, and the fruit ripens very late in summer and fall. In some cool summer environments, such as the Pacific Coast and northwest Washington, there often is not enough heat to fully ripen the fruit.

Rabbiteye blueberries are more sensitive to winter cold than northern highbush blueberries. Although we have not seen much cold damage on rabbiteyes grown in Oregon's Willamette Valley, cold damage to flower buds and late-season growth has been observed when temperatures drop below approximately 0°F to 5°F. We do not recommend this type of blueberry for production east of the Cascades or in northern Washington.

Though newer cultivars have fruit quality similar to that of highbush types, many older rabbiteye cultivars have darker blue fruit with more noticeable seeds, thicker skins, and noticeable grit or stone cells (as found in pears). Rabbiteye cultivars are listed in Table 1.

Lowbush Blueberries

Lowbush blueberries (*V. angustifolium*) are native from Minnesota to Virginia and to the northeastern United States and the Maritime Provinces of Canada. The plants are low-growing shrubs that spread by underground stems; they seldom grow taller than 1.5 feet. A few cultivars, such as 'Blomidon', 'Burgundy', and 'Brunswick', have been named, but the lowbush blueberry industry depends on managing wild stands made up of hundreds or thousands of clones per acre.

Plant more than one cultivar for good fruit production. In general, lowbush types need little pruning, but cut plants back to the ground every 2 to 3 years if they get too shrubby.

Half-High Blueberries

Half-high blueberries are the result of crosses between northern highbush and lowbush blueberries. These cultivars will tolerate -35°F to -45°F. The plants grow from 3 to 4 feet tall, and most of the fruiting area is protected below the snow line. Half-high blueberries are suitable for commercial production where other types of blueberry are not hardy. They are also used as attractive landscape plants and are suited to container production. In the landscape, they do not need to be pruned as severely or as regularly as highbush types. Half-high cultivars are listed in Table 2.

Pollination

Although highbush blueberry cultivars are generally self-fertile, cross-pollination by another cultivar produces larger berries. Choose a pollinizer within the same blueberry type to ensure good berry size and yield. All northern highbush blueberries are compatible with each other for cross-pollination. Rabbiteye and lowbush blueberries are not self-fertile. Rabbiteyes require a different rabbiteye cultivar for successful pollination, and lowbush blueberries can be pollinated by either another lowbush or a highbush cultivar for successful pollination and fruit production.

Cultivars for Colder Growing Regions, Limited Space, or Container Production

Although most commercial blueberry production in Oregon is west of the Cascades, northern highbush blueberries are successfully grown in eastern Washington, some areas of Idaho, and eastern Oregon. In these regions, growers must contend with shorter growing seasons and colder winter temperatures, and selection of cold-hardy cultivars and protection from spring frost damage are especially important.

Harvest dates vary tremendously among cultivars, but cultivars bloom within about a week of one another. Thus, selecting a mid- to late-season cultivar does not necessarily ensure a late bloom date and reduced susceptibility to spring frosts.

Of the early-season cultivars, 'Duke' and 'Spartan' tend to bloom later than average. Late-season



'Pink Lemonade' (rabbiteye)



'Perpetua' (half-high, ornamental)

cultivars 'Elliott', 'Jersey', and 'Ozarkblue' tend to bloom later than early and midseason cultivars. 'Legacy' has a particularly long bloom period.

Short growing seasons in high-elevation and high-latitude sites present challenges for cultivars that ripen after 'Liberty' (particularly 'Elliott' and 'Aurora'); these cultivars may not ripen reliably before fall frosts.

In eastern Washington, particularly cold sites in northeastern Oregon, and Idaho, plant only the most cold-hardy cultivars. Avoid 'Legacy' and all rabbiteye cultivars. The half-high cultivars listed in Table 2 are recommended for particularly cold production regions where snow can also protect plants. These cultivars also work well in containers and in home gardens as ornamentals.

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'Draper' (northern highbush)



'Duke' (northern highbush)

Cultivar Table Notes

The cultivars in Table 1 are all northern highbush blueberries unless otherwise labeled. Table 2 lists half-high blueberry cultivars. Not all of the listed cultivars are available in nurseries; however, these are included in the tables because plants are long lived, and established plantings of older cultivars exist.

Harvest Season

Fruiting season varies by production region. In Oregon, the blueberry fruiting season extends from late June through September, depending on type and cultivar (Figure 1). In Washington, production does not begin until early to mid-July, and the season finishes earlier than in Oregon. The fruit on each cultivar ripens over period of 2 to 5 weeks.

Fruit Descriptions and Yield

Descriptions of berry size and yield are primarily based on results of trials by the USDA-ARS/OSU cooperative breeding program at the OSU North Willamette Research and Extension Center in Aurora, Oregon. If a cultivar has not been tested at this site, yield and berry descriptions are based on grower experience throughout the Pacific Northwest.

Pruning severity affects berry size. Evaluations of berry size were done on well-pruned plants.

When a berry is picked from the fruit stem (pedicel), a scar is left on the base of the berry. A cultivar that has a small or "dry" scar will ship and store better than one that has a large or "wet" scar.

Commercial Production

A commercial value score is provided to help commercial growers select appropriate cultivars for fresh and processed markets:

- 1 = Appropriate for most commercial operations
- 2 = May have commercial value but:
 - (a) not enough is known about its performance
 - or
 - (b) may meet a specific requirement (e.g., unique color or very early harvest) but has a negative trait (e.g., low yield or poor shipping quality)
- 3 = Unlikely to have good commercial value

Small Farm, U-Pick, and Home Gardens

Cultivars that are well suited to small farms, local sales, U-pick farms, and home gardens are noted as such.

What if you find a cultivar that's not on these lists?

Find out as much about it as you can, such as its growth habit, hardiness, fruit characteristics, disease susceptibility, and machine harvestability (important for commercial growers).

Remember: If you purchase a cultivar that is not on these lists, it probably hasn't been extensively tested in this region. It's best to try a few plants first and see how well they grow and how you like the fruit.

Table 1. Northern highbush and rabbiteye blueberry cultivars

Cultivars are northern highbush blueberries unless otherwise noted. Cultivars are listed in approximate order of ripening.

We do not recommend southern highbush cultivars (e.g., O'Neal, Star, Jewel, San Joaquin, Emerald, Santa Fe, Misty, Carteret, Pamlico) for commercial or home garden production in the Pacific Northwest.

Cultivar	Bush	Berry	Yield	Large-scale commercial value	Small farm or home garden
Bluetta	Moderate vigor, compact, consistently productive, more frost- and winter-hardy than Earliblue	Medium size, light blue, firm, poor scar, good flavor, loose clusters, not suited to shipping	Low to medium	3	
Duke	Erect, open, susceptible to root rot, performs poorly when soil pH and fertility not optimal. Plant on well-drained soil and manage irrigation well.	Large size, uniform, light blue, firm, small scar, excellent eating quality, flavor declines less in storage than other cultivars, excellent shipping quality, machine harvests well (including for fresh market) with optimal management	Medium to high (but variable with location and management)	1	✓
Earliblue	Vigorous, erect	Medium to large size, light blue, firm, resists cracking, medium scar, good flavor, sweet, aromatic, medium-loose clusters, ships well, fruit ripens early, ripe berries will remain attached	Medium	3	✓
Huron (U.S. Plant Patent 21,777)	Vigorous, erect, excellent winter hardiness, late flowering among early cultivars	Moderately large size, small and dry picking scars, medium blue, excellent firmness and superior flavor when fully ripen	Medium (performs better with cross-pollination)	2 (yield and quality is good for areas where other cultivars are not cold hardy)	
Bluegold	Vigorous but somewhat squat, very susceptible to <i>Blueberry shock virus</i> (which may stunt plants if infected when young)	Large size, light blue, firm, small scar, very good flavor, overall excellent quality, often retains stems when picked	Medium to high (varies from field to field and year to year)	2 (challenging bush habit, variable performance)	
Spartan	Vigorous, erect, open, generally does not do as well on heavy soils	Very large size, light blue, moderately firm, very good scar, excellent flavor, blooms late (avoids frost injury) but ripens early, concentrated ripening permits two main pickings	Medium to high	3	✓

(Table continues)

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Cultivar	Bush	Berry	Yield	Large-scale commercial value	Small farm or home garden
Patriot	Vigorous, moderately erect, open, short (less than 4 feet), sensitive to bacterial blight (<i>Pseudomonas</i>), tolerant of heavier, wetter soils, cold weather, and frost	Very large size, slightly flat, medium blue, not firm, small scar, acidic flavor, concentrated ripening permits two main pickings, berries have a "red back" (only half of the fruit blue) when immature, can have tight fruit clusters	Medium	3	
Draper (U.S. Plant Patent 15,103)	Young plants may produce many whips and require more pruning. In some northern production regions, premature fruit drop has been a problem.	Medium to very large (size variable), light blue, firm, small scar, crisp texture, mild flavor, stores extremely well, concentrated ripening	High	1	
Reka (U.S. Plant Patent 6,700)	Very vigorous, upright, open, tends to overcrop if not pruned correctly	Medium to large size, dark blue, medium scar, good flavor, machine harvestable, excellent for processing	Very high	2 (excellent processed but not an ideal fresh-market berry because of dark color)	√
Bluejay	Extremely vigorous, open, fast growing, medium spreading	Medium size, resists cracking, sensitive to sunburn, small scar, mild flavor, loose clusters, machine harvests well, ripe fruit can hang on plant for a long time without losing quality (so can be harvested in fewer pickings)	Medium to high	2 (has been surpassed by other cultivars in new plantings)	
Toro	Stocky, spreading, moderate vigor, takes 1 year longer than more vigorous cultivars to come into full production, very susceptible to root rot, does not perform well in heavier soil	Very large size, light blue, firm, small scar, good flavor, excellent overall quality, concentrated ripening, tight clusters	High to very high	3	√
Olympia	Vigorous, spreading	Medium size, dark blue, soft, thin skin, resists cracking, medium to large scar, excellent sweet flavor, fruit hang well	Medium	3	√

(Table continues)

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Cultivar	Bush	Berry	Yield	Large-scale commercial value	Small farm or home garden
Berkeley	Vigorous, open, spreading, does best in light, well-drained soil	Very large size, light blue, soft, resists cracking, fair scar, fair or mild flavor, susceptible to fruit rot	Medium to very high	3	
Bluecrop	Vigorous, upright, open, easy to grow but tends to overproduce if not pruned correctly	Medium to large size, light blue, firm, resists cracking, small scar, good flavor, loose fruit cluster, machine harvests well, fruit can be tart or show "red back" (only half of the fruit blue) if picked too early, overcropped, or ripening in very hot weather	Medium to high	1	√
Rubel	Moderately vigorous	Very small size, medium blue, firm, small scar, good flavor, machine harvests well	Low to medium	3 (suited strictly for machine harvest, small-berry processed market)	
Jersey	Very vigorous, large, upright	Small size, medium blue, resists cracking, medium scar, sweet, good flavor	Medium	2 (suited strictly for machine harvest, processed market)	√
Blueray	Vigorous, upright, open	Large to very large size, medium blue, resists cracking, fair scar, excellent flavor, aromatic, tight clusters, fair shipping quality	Medium to high	3	√
Ivanhoe	Very vigorous, erect, not consistently productive	Large size, light blue, firm, resists cracking, medium scar, good flavor, tart, aromatic, medium-loose fruit cluster, not suited for machine harvest	Medium	3 (no longer widely grown or available)	
1613-A (called Hardyblue by growers and some nurseries)	Vigorous, erect, open, adapted to a wide range of soil types	Small size, dark blue, soft, medium scar, excellent flavor, very sweet, fruit hang and can be harvested in two passes with a machine	Medium	2 (well suited for machine harvest, processed market)	√

(Table continues)

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Cultivar	Bush	Berry	Yield	Large-scale commercial value	Small farm or home garden
Calypso (U.S. Plant Patent applied for)	Vigorous, upright, open	Large size, light blue, good firm, small scar, good flavor, concerns with fruit texture	Medium to high	2 (too new to fully evaluate)	✓
Legacy	Very vigorous, habit can be weepy (requires a trellis), somewhat evergreen foliage. New growth originates from higher on bush; prune accordingly in late winter.	Medium to large size, light to medium blue, firm, very small scar, very good flavor, very high overall quality, long fruiting season	Very high	1	✓
Liberty (U.S. Plant Patent 15,146)	Vigorous, upright but requires trellis, more time consuming to prune than many other cultivars, susceptible to cane diseases in northern production regions	Medium to large size, bright blue, slightly flat, firm, small scar, very good flavor, can soften under high temperature, sections of plants can produce small (shot) berries	High	2 (variable performance, especially fruit quality in warm weather)	✓
Brigitta Blue	Very vigorous, upright, open	Large size, light blue, firm, small scar, good flavor, slightly tart, excellent shipping and storage characteristics	Low to high (varies from field to field and year to year, often because of poor fruit set)	2 (variable performance for productivity)	
Darrow	Vigorous, erect, sensitive to bacterial blight (<i>Pseudomonas</i>)	Large to very large size, light blue, medium firm, resists cracking, medium to large scar, excellent flavor, slightly tart	High	3 (better late-season wholesale fresh market cultivars available)	✓
Chandler	Moderate vigor, slightly spreading, sturdy, sensitive to bacterial blight (<i>Pseudomonas</i>) when lush fall growth occurs, especially on young plants	Very large size, medium to dark blue, good firmness, good scar, good flavor, very long ripening season, size can vary when heavily cropped	Medium to high	3	✓

(Table continues)

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Cultivar	Bush	Berry	Yield	Large-scale commercial value	Small farm or home garden
Ozarkblue (U.S. Plant Patent 10,035)	Moderate vigor, open	Medium to large size, medium blue, firm, small scar, good flavor	High (but erratic yields from plant to plant)	3 (plants not available)	
Pink Lemonade (rabbiteye)	Moderate vigor, erect, nice ornamental	Medium size, light to dark pink, good flavor	Medium	3	✓
Elliott	Moderate to high vigor, erect, very precocious, needs hard pruning	Medium size, light blue, firm, small scar, fair flavor, tart, susceptible to cracking and softening	High to very high	1	
Aurora (U.S. Plant Patent 15,185)	Moderate vigor, stocky, spreading growth habit, especially when young	Medium to large size, dark blue, firm, small scar, mild flavor, need to let fruit hang on plant to fully ripen and sweeten, hangs for much longer without shriveling than Elliott	High	1	✓
Ochlockonee (rabbiteye) (U.S. Plant Patent 17,300)	Vigorous, upright, narrow crown, young plants sensitive to bacterial blight (<i>Pseudomonas</i>)	Medium to large size, light blue, firm, good scar, good flavor, may be resistant to splitting from rain	Medium to high	1	✓
Tifblue (rabbiteye)	Vigorous, erect, dense foliage, suckers, young plants sensitive to bacterial blight (<i>Pseudomonas</i>)	Small size, very light blue, firm, small scar, good fresh quality, mild flavor, subject to splitting from rain	Medium to high	2 (others have better yield and quality)	
Powderblue (rabbiteye)	Vigorous, erect, dense foliage, suckers, young plants sensitive to bacterial blight (<i>Pseudomonas</i>), sensitive to root rot.	Small size, very light blue, very firm, small scar, good flavor, very good overall fresh quality, resistant to splitting from rain	Medium to high	1	✓

Table 2. Half-high and ornamental blueberry cultivars

Cultivars are listed in approximate order of ripening.

Cultivar	Harvest	Bush	Berry	Yield	Home garden
Polaris	Early	Compact, upright, spreading, to 4 feet tall	Small to medium size, light blue, firm, good flavor	Medium	√
Northland	Early midseason	Vigorous, spreading, many shoots, to 4 feet tall	Medium size, dark blue, sweet	Very high	√
Northcountry	Early midseason	Compact, to 3.5 feet tall and wide, adapted to a wide range of acidic soil types	Medium size (less than 0.5 inch diameter), sweet, very good flavor	Low to medium	√
Northsky	Early midseason	Compact, to 3 feet tall and wide	Small size, very light blue, sweet, very good flavor	Low	√
Chippewa	Midseason	Compact, vigorous, upright, to 4 feet tall	Medium size, very light blue, medium firm, very sweet	Medium	√
Northblue	Midseason	Upright, open, to 3 feet tall	Medium to large size, good flavor	Medium	√
BrazelBerries Peach Sorbet (‘ZF06-043’; U.S. Plant Patent 23,325)	Midseason	Compact, ornamental foliage	Medium size, fair to good flavor	Unknown	√
Sunshine Blue	Midseason to late	Compact, to 3 feet, ornamental	Medium size, medium blue, sweet	Medium	√
Perpetua (U.S. Plant Patent 24,209)	Two crops per year (small, very early crop and larger, late-season crop)	Compact bush, upright canes, 3 to 4 feet, very dark green glossy leaves, ornamental	Small size, dark blue, mild flavor	Medium	√

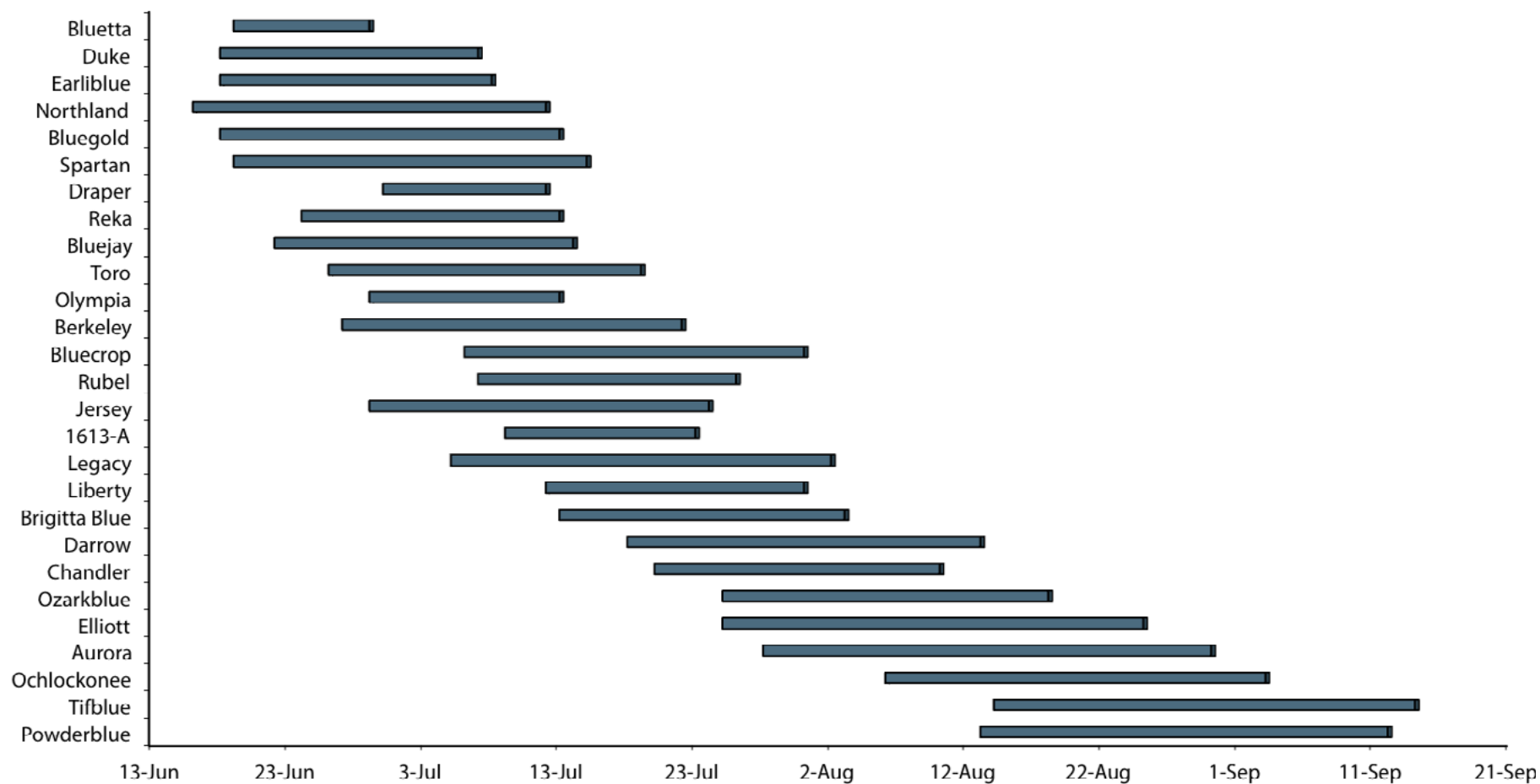


Figure 1. Approximate fruiting season of highbush and rabbiteye blueberry cultivars at the OSU North Willamette Research and Extension Center, Aurora, OR.

Bars represent harvest season for 5% to 95% of total yield. Cultivars are sorted by the date at which 50% percent of total yield has been harvested.

Ripening time can vary with year (weather) and cultural practices.

All cultivars shown on this page are northern highbush types.



'Aurora'



'Bluegold'



'Chandler'



'Darrow'



'Elliott'



'Jersey'



'Legacy'



'Liberty'



'Ochlockonee' (rabbiteye)

For More Information

Highbush Blueberry Production (PNW 215). Oregon State University Extension. (under revision in 2014)

Growing Blueberries in Your Home Garden (EC 1304). Oregon State University Extension.

A Grower's Guide to Pruning Highbush Blueberries (DVD 2). Oregon State University Extension. Available as a DVD (for purchase) or as a free online video in English or Spanish.

Click here to watch the English version.

Click here to watch the Spanish version.

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'Spartan' (northern highbush)



'Rubel' (northern highbush)



'Reka' (northern highbush)

This publication replaces OSU Extension publication EC 1308, *Blueberry Cultivars for Oregon*.

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