



GROWING BERRIES IN THE SACRAMENTO REGION

With good preparation and proper care, most berry species can be grown in the Sacramento area, including blackberries, raspberries, and blueberries. Cane berries are very manageable if they are trellised and pruned correctly, and if their roots are contained when necessary, such as with red raspberries. This paper focuses on berries in the garden, but most of the topics are relevant to commercial production as well.

Species and Varieties

Highbush Blueberries. Many Central Valley residents don't realize that the blueberries (*Vaccinium corymbosum*) can be successfully grown here. The varieties grown here are the southern highbush types; northern highbush varieties do not tolerate our hot summers and low winter chilling. All varieties are self-pollinating but fruit set will increase and berries will be larger if two varieties are planted together. Blueberries are deciduous shrubs that grow to 6 ft. or taller.

A UC Master Gardener variety trial in Santa Clara found that the following varieties grew the best, produced the biggest crops, and had excellent flavor: 'Reveille', 'Misty', 'Sunshine Blue', 'Bluecrop', and 'O'Neal' (see References). Other species that may also work well include 'Blue Ray', 'Cape Fear', 'North Blue', 'Ozark Blue', and 'Sharp Blue'. Test varieties in small areas before planting large blocks.

Blackberries, Boysenberries and Related Berries. Several berry types, both thorny and thornless, are often classified as blackberries and are sometimes called dewberries. The main types are western trailing types (*Rubus ursinus*), which are discussed below, and erect and semi-erect cultivars (no trellis required), which are being developed mainly for cold climates. Most trailing varieties root at the tips of shoots if they come in contact with the soil.

Blackberries. One of the oldest and most popular varieties is 'Ollalie', which is actually a cross between blackberry, loganberry, and youngberry. It is large and glossy black at maturity and is slightly longer and more slender than the boysenberry. 'Thornless Black Satin' has a heavy crop of large, elongated dark berries and are good for fresh eating or cooking. Another good variety is 'Black Butte'. 'Marion' berry is widely grown in the Pacific Northwest; it is very spiny and is used mostly for canning, freezing, pies, and jam. 'Loganberry' is a cross between wild blackberry and raspberry and is available as thorny or thornless. It ripens early and has large, elongated, dusky red berries that are juicy and acidic, and it can be used for fresh eating, frozen, or preserves. 'Tayberry' originated in Scotland and is a cross between blackberry and raspberry. It has thorny canes that bear large, narrow reddish black fruit with a delicious tart flavor.

Boysenberries. The boysenberry, which originated in California, is reddish-black and very large at maturity. Its aroma and sweet-tart flavor are suggestive of raspberries. The vines are thorny and vigorous. The nectarberry and thornless youngberry are very similar, but the youngberry is almost seedless.

Raspberries. Raspberries (*Rubus idaeus*) are largely grown in the relatively cool, marine climate of the Pacific Northwest. In the Sacramento area, most varieties grow best with some afternoon shade, however, 'Oregon 1030' and 'Bababerry' prefer full sun. Red raspberries have invasive roots and will spread unless contained by borders, or unless unwanted shoots are hoed in the spring.

Three types of raspberries are available: summer bearing, everbearing, and black. *Summer bearing* varieties, like blackberries, produce new canes from the ground at the same time that they bear fruit on last

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year's canes. *Everbearing* or fall-bearing varieties produce flowers and then fruit on the mature tips of current season's growth, starting in mid to late summer and continuing through the fall. If not pruned, they would then overwinter and produce a second crop on the lower half of the canes the following summer. *Black* raspberries have dark fruit that are produced on shrubs, so they need no trellis.

Summer Bearing Varieties. 'Willamette' and 'Meeker' are the leading varieties in the Pacific Northwest but they do not produce as well in our heat. 'Canby' has thick, thornless canes that produce large, light red berries used for fresh eating only. It is very resistant to mosaic virus and aphids. 'Newburgh' tolerates heavy soils, and it produces large golden fruit. 'Latham' is a late variety with berries that often crumble when picked.

Everbearing Varieties. 'Oregon 1030' is adapted for the hot valley and is very prolific with large, sweet, and firm fruit. 'Bababerry' is very similar to 'Oregon 1030' and also tolerates heat well. 'Heritage' vines are vigorous and sprawling, producing dark red berries with a mild flavor, but a bit dry. 'Indian Summer' produces small crops of large berries. 'Fallgold' is bushy with lower vigor; the fruit are yellow with a mild, sweet flavor.

Black Raspberries. Black, or blackcap, raspberries resemble red raspberries in many ways, but the fruit are bluish black, firmer, and have a more distinct flavor. Also, they are shrubs and they do not sucker from roots. Like blackberries, new plants form when arching cane tips root in soil. Like most other raspberries, they perform best with afternoon shade. 'Munger' produces large, firm, shiny black fruit. It is often used for fresh eating and for freezing and preserves. 'Cumberland' also has large fruit but is less flavorful and seedy.

Currants and Gooseberries. Currants (*Ribes sativum*) and gooseberries (*Ribes grossularia*) do not grow well in hot climates, but they can grow here with afternoon shade. They are shrubby bush fruits and grow to 5 to 7 ft. tall. They can grow on many soil types, but require moist soil. The fruit is too tart to be eaten out of hand and must be cooked for use in pies, jams, and preserves. Both species serve as alternative hosts for white pine blister rust, a disease that attacks five-needle pines, such as sugar and various white pines. For this reason, planting these berries was illegal until 1966, when it was determined that many wild *Ribes* species also serve as alternate hosts. Nonetheless, if five-needle pines do occur in the landscape, do not plant these berries. Currant varieties include 'Cherry', 'Consort', 'Crandall Black', 'Red Lake', and 'Wilder'. Gooseberries ripen in early summer (earlier than currants) and include the variety 'Pixwell'.

Soil Requirements and Planting

Berries, like most woody plants, will grow on most soil types, provided that the soil is porous and well drained. However, raspberries produce best on sandy loam soil. All soils benefit by the thorough incorporation of well decomposed organic matter. The best organic amendment is compost that has undergone a thorough aerobic decomposition process. If undecomposed material is used, such as manure or leaves, do not plant for at least one or two months before planting to allow it to break down. Any organic amendment should be thoroughly incorporated into the soil, since buried pockets of organic matter may become toxic to roots by not decomposing properly.

Most berries are shallow rooted, and the roots occupy a space about 3 or 4 feet wide. Therefore, the soil should be dug this wide and at least a foot deep; two feet would be better if drainage is poor. If hardpan is present in the top 2 feet of soil, it must be broken up or else roots will not grow and water will not drain properly. Alternatively, use raised beds or mounds to provide adequate soil for root growth.

Like most woody plants, berries grow best in a soil with a pH of about 6 to 7.5. However, *blueberries* require a much more acidic soil – about 5.0 to 5.5. To acidify the soil, incorporate soil sulfur (not dusting sulfur) in the top 8 in. at a rate of about 3 to 7 lbs. per 100 square feet. The amount to use depends on soil texture (use higher rate in clay soils, lower rate in sandy soils), calcium carbonate (lime) content (use higher rate where soil analysis shows high levels), and existing pH. Rototill the sulfur and compost in a strip about 3 or 4 ft. wide in the row in the top 6 in. of soil. Test the soil at planting and every year with a kit available at local nurseries to be sure it remains acidic. Fertilize with an acidic fertilizer, such as ammonium sulfate, and/or side dress or lightly incorporate additional sulfur later.

Planting and Spacing. Cane berries are often planted during the dormant season (mainly December and January), but potted vines can also be planted in spring or summer. All berries should be planted on a small

mound or berm if the soil is poorly drained. Bare root blackberries should be set at the same depth they were growing before transplanting, whereas raspberries should be set about an inch lower. Roots should be spread as much as possible and the soil firmed well around them. If the soil is dry, irrigate after planting, but if the soil is wet, no irrigation is necessary. After planting, cover the soil with plenty of mulch, such as wood chips.

Blueberry plants are usually potted and are planted anytime, but are most available in winter and spring. If the plant is older and root-bound, the outer roots should be loosened or pulled away before planting. Plants should be set at the same height as the existing soil level, or slightly above if settling is expected.

In-row spacing for the various berries is as follows: blueberry – 3 ft. (hedge) or 4 to 5 ft. (shrubs); blackberry – 3½ to 4 ft.; raspberry – 2½ to 3 ft. Rows should be 8 to 10 ft. apart.

Trellising and Pruning

Blackberries, boysenberries, and red raspberries require a trellis on which to tie or wrap the canes. End posts should be strong (4 to 6 in.), and the posts in between (if necessary) can be 2- by 2-in. grape stakes, spaced 20 ft. apart. Strong galvanized wire (No. 10 or 12) should be used for durability.

Blackberries and boysenberries are commonly grown on a three-wire trellis, with the lowest wire 1½ ft. above ground, the second wire at 2½ ft., and the top wire at 4½ ft. An additional wire at 6 ft. can be added if vigor is high. In the winter, two-year-old canes that were left the previous winter are cut back to the ground. About 9 to 12 new canes that grew over the summer (“primocanes”) are cut back to 6 to 8 ft. long and any side branches are cut back to 12 in. These primocanes are spread out in a fan shape and tied or wrapped to the top wire, or brought over the top wire and tied to the middle wire. All other canes are cut back to the ground.

Raspberries can be trellised in several ways. *Everbearing or fall-bearing* varieties bear mostly on current season’s growth, so they are usually completely cut back to the ground each winter. The new canes need only to be supported by wrapping a wire or even string around both sides of the row when canes have grown 3 to 4 ft. long. The wire can be placed over a hook or bent nail on either side of each post, or the wires can simply be tied together (with a gap between the wires) at several points down the row.

With *summer-bearing* varieties, primocanes are fastened to a wire for support, as described below. The following spring, these canes produce short fruiting shoots while new vegetative shoots that grow from the ground become the next year’s fruiting shoots. Fruiting canes are cut back to the ground after harvest.

The most common support method is a three-wire trellis, in which a single top wire is placed 4½ ft. above ground, and two detachable wires are placed 2½ ft. above ground. The detachable wires are used to bring the primocanes into the row; they are placed on a hook or bent nail attached to either side of each post when the primocanes have grown to a height of 3 to 4 ft. (about early May). Alternatively, the wires could be placed on short crossarms and the primocanes tucked in between them. In late summer or fall, tie the strong primocanes (8 to 12 per plant) to the top wire, and remove the weaker canes and the old fruiting canes. If the roots are not contained within a bordered area, use a hoe in early spring to cut canes that grow outside the vine row.

Another method is a four-wire trellis, which uses two wires on a crossarm at the top instead of one; primocanes are tied to these wires in a V pattern. This method provides better separation of fruiting canes and protects primocanes, which then grow up the middle.

For additional information:

Growing Boysenberries and Ollalie Blackberries, 1982, Leaflet No. 2441, Univ. of Calif.

Growing Small Fruits for the Home Garden, 1992, Washington State University Cooperative Extension

Web sites:

Master Gardeners of Santa Clara Co. (blueberry trial): www.mastergardeners.org/recommend/blueberry.html

Northwest Berry & Grape Information Network: <http://osu.orst.edu/dept/infonet/>

Fall Creek Nursery (blueberry information): www.fallcreeknursery.com