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GROWING BLUEBERRIES IN THE SACRAMENTO REGION

With good preparation and proper care, blueberries can be grown in the Sacramento area. This paper focuses on blueberries in the home 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 of the three main cultivated species of blueberries, one can be successfully grown in our area. Rabbiteye Blueberries (*Vaccinium ashei*) grow in the southeastern part of the country, thrive in hot humid weather but are not cold hardy. Lowbush Blueberries (*V. angustifolium*) grow in the northeastern states and Canada. Highbush Blueberries (*V. corymbosum*), grow from Florida to Maine and the northern tier states and have a high chilling requirement that limits their adaptability. Fortunately, hybrids of the highbush have been developed to be more tolerant of hot, dry conditions and higher soil pH, and are generally separated into northern or southern highbush varieties. The varieties grown here are primarily the southern highbush types since most of the northern highbush varieties do not tolerate our hot summers and low winter chilling. These varieties are self-pollinating but fruit set will increase and berries will be larger if two varieties are planted together. Most varieties are deciduous shrubs that grow to 4 to 6 ft. in our area, while a few are more compact and a few remain evergreen.

A UC Master Gardener variety trial in Santa Clara found that the following varieties grew the best, produced the biggest crops, and had good to excellent flavor: 'Reveille', 'Misty', 'Sunshine Blue', 'Bluecrop', 'Georgia Gem' and 'O'Neal' (see References). Other varieties 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.

Consider planting a selection of varieties that ripen at different times to provide a long harvest season. Harvest of early varieties at the Fair Oaks Horticulture Center begins in May and lasts through July or early August with late season varieties. Some varieties feature large berries that are best for fresh eating and desserts, and others feature small fruit that are best for baking. Allow at least two plants per family member; extra berries freeze well.

Cultural Practices

Blueberries, like most woody plants, will grow on most soil types, provided that the soil is porous and well drained. A major requirement, however, is that *blueberries require an acidic soil* with a pH of about 5.0 to 5.5. Blueberries are in the same family as azaleas and rhododendrons, and need similar growing conditions.



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Soil preparation. Blueberries benefit by incorporating well, decomposed organic matter into the soil. 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, especially clay soils, since buried pockets of organic matter may become toxic to roots by not decomposing properly.

Blueberries 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.

To acidify the soil for blueberries, 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. This should preferably be done 6 months to a year prior to planting since sulfur is slow to break down. Test the soil at planting and every year with a kit available at local nurseries to be sure it remains acidic. If additional sulfur is needed in later years, side dress or lightly incorporate additional sulfur into the soil.

Planting and Spacing. Blueberries are often planted during the dormant season (mainly December and January) and spring when they are most available at nurseries, but potted plants can also be planted in the summer. They should be planted on a small mound or berm if the soil is poorly drained. Set the soil line on the trunk of the plant at the same level as the soil, or slightly above if settling is expected. If the plant is older and root-bound, the outer roots should be loosened or pulled away before planting. After planting, irrigate and cover the soil with 4 to 6 in. of mulch. Blueberries should be spaced 3 ft. apart for a hedge, or 4 to 5 ft. apart for shrubs.

Fertilizing. Blueberries do not require large amounts of fertilizer and are sensitive to over fertilizing, so observe first whether plants are growing and fruiting well. If fertilizer is needed, rake back mulch, spread fertilizer over the soil without incorporating it in, then replace mulch and water in well. Fertilize blueberries with an acidic fertilizer, such as a 10-10-10 formula for azaleas at the rate of ½ cup per mature plant applied first in early spring as growth starts, and twice more at 2-month intervals. Organic fertilizers such as blood meal, cottonseed meal, fish meal, and alfalfa meal can be applied at a rate of 1 lb per plant instead of the above inorganic recommendation. Ammonium sulfate, a common acidic nitrogen source, may be used if caution is exercised to carefully follow application rates on its label.

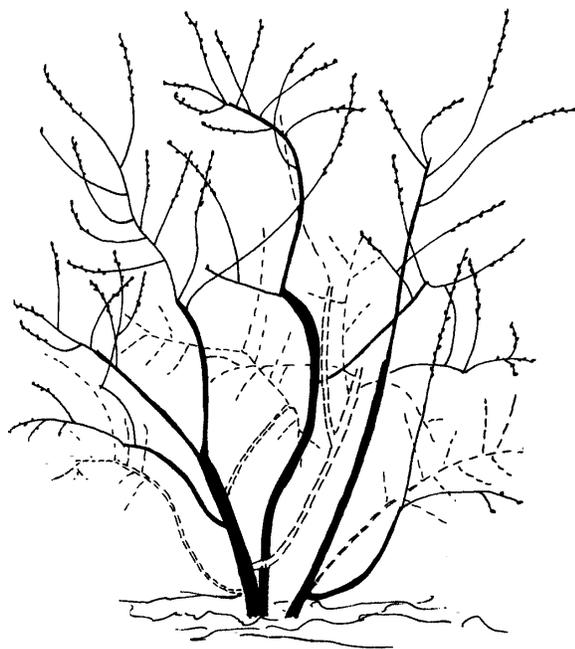
Watering. Blueberries require moist but not wet soil. Water is critical during berry development through harvest, and during bud formation in July and August. Irrigate with soaker hoses, mini-sprinklers, or double drip lines (one line on either side of the plant under the leaf canopy) with numerous emitters spaced about 1 ft. apart. The amount of water depends upon the type of soil, drainage, and weather, so frequent testing of soil moisture is recommended.

Pruning. At planting, remove older twiggy growth from the base of plant and leave strong new growth. For the next two years, remove dead or damaged branches and spindly growth at the base of the plant. Also remove all blossoms (at least the first year) to prevent fruiting and encourage strong growth.

After the third year, pruning should focus on removing unproductive wood and generating replacement wood with the goal of having a balance of branches that are 1 to 5 years old. Winter pruning follows the following steps: (1) cut out dead, damaged, and diseased wood, (2) remove small sucker shoots and weak twiggy growth at the base, (3) remove low spreading branches that will be shaded and touching the ground with fruit, (4) remove one or two of the oldest canes each year, cutting back to the ground or to a

strong new side shoot, (5) if more than 2 new canes grew from the crown the prior year, remove all but the 2 healthiest canes at crown level, (6) remove weak twiggy wood from the top and outside branches, (7) prune out crossing branches, (8) if plants overbear, cut back some of the branch tips where most of the flower buds are located, (9) extremely vigorous new shoots should be tipped or headed back to encourage branching and fruiting.

Blueberry Pruning Illustration



Source of drawing: *Western Fruit Berries & Nuts*, HP Books

Prune blueberries in winter or early spring. Remove dead, damaged, and weak twiggy growth. Remove branches low to the ground, and crossing branches. To generate new growth, cut out 1 to 2 oldest canes each year. To space out new replacement canes over several years, select and keep no more than 2 new canes that grew from the crown.

Growing Blueberries in Containers

Blueberries can be grown successfully in containers outdoors and are attractive patio plants. Most of the blueberry varieties mentioned in this paper can be planted in containers, although the taller varieties may need more pruning. Compact bush varieties such as ‘Sunshine Blue’ and ‘North Blue’ are ideally suited to containers.

Blueberries need at least 6 hours of sun, and would benefit from late afternoon shade in the Sacramento area, so the location of the containers should accommodate that. If the containers are located on a concrete patio slab, they should be grouped together to minimize the reflected heat.

New plants can be started in 5 gallon pots then moved to 20 in. containers in a couple of years. Use an acid based soil mix such as that formulated for azaleas. Or, prepare a mix 1/3 pine or fir bark (1/4 in.), 1/3 coarse peat, 1/3 potting soil, and about ½ oz. of soil sulfur per cubic ft of soil (see soil preparation section on soil pH). Use an acid based fertilizer listed for azaleas (similar to a 10-10-10 formula) without extra nitrogen. Split the application into several small doses from February to September.

Keep the soil moist but not wet. Take into account that soil in a container dries out faster than soil in the ground. Apply a 4 to 6 inch layer of mulch to conserve water and help moderate soil temperature. Replace soil with fresh potting mix, and root prune the plant every 3 to 4 years.

For additional information:

California Master Gardener Handbook, 2002, ANR Publication 3382

Growing Small Fruits for the Home Garden, 1992, Washington State University Cooperative Extension Fair Oaks Horticulture Center workshops, Fair Oaks, CA. (schedule and location information available:

<http://cesacramento.ucdavis.edu>

Web sites:

UC Agriculture & Natural Resources Publications Catalog: <http://anrcatalog.ucdavis.edu/>

Fair Oaks Horticulture Center: <http://cesacramento.ucdavis.edu>

Master Gardeners of Santa Clara Co. (blueberry trial): <http://www.mastergardeners.org/picks/blueberry.html>

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

ATTRA (Appropriate Technology Transfer for Rural Areas) “Organic Blueberry Production”:

<http://attra.ncat.org/attra-pub/blueberry.html>

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

Weeks Berry Nursery (Oregon) (berry information): www.weeksberry.com

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