

Blueberries for Contra Costa County

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www.gardenoasis.co.uk/.../Blueberry_Bush.jpg

Blueberries are *Vaccinium* species, and are native to the woodlands of northern and eastern United States. They belong to the Ericaceae family, as do plants such as Arbutus, Gaultheria, Arctostaphylos and Rhododendron.

Three species are grown commercially: Highbush blueberry *Vaccinium corymbosum* L.; Lowbush blueberry *V. angustifolium* Ait.; and Rabit-eye Blueberry *V. ashei* Reade. The lowbush varieties do not produce well, if at all, in Contra Costa due to the lack of necessary climatic conditions. The Highbush and rabbiteye are productive in this area, as they have lower chill requirements. Southern Highbush varieties have been bred to need less chill, and require a shorter ripening period, making them the best choice for berry production at this time.

Soil

Like most of the members of the Ericaceae family, Blueberries require moist, well-drained highly organic soils, with a **pH of 4.5 to 5.5**, and low nutrient levels. Soil pH in Contra Costa County varies widely, but are frequently alkaline, with pH in the 7-8 range. When the pH is high, nutrient and micronutrient availability becomes limited for plants native to more acidic environments. The water available from Contra Costa Water and EBMUD also has a high pH, sometimes as high as 9. It is difficult and expensive to lower the pH of alkaline soils. Have your soil tested prior to planting.

If the pH of your soil is higher than 6, it is easier and less time consuming to plant blueberries in containers. Half wine barrels with multiple drainage holes are ideal for several plants. Fill them with a mix of acid soil potting mix and one of the following acidic amendments:

—pine bark, pine needles; Sphagnum peat; composted oak leaves

Planting



mtngrv.missouristate.edu/.../session_two.htm

Purchase 2 year old bare-root plants when dormant. Keep the roots moist, and plant as soon as possible. Blueberries do not have root hairs, and must have available moisture at all times. The crown of the plants should be about 1" under the soil when planted. Do not fertilize. Newly planted plants are very susceptible to fertilizer damage. Cut back the woody shoots to a 8-10" height. Mulch with 6" of pine needles. Maintain regular moisture—water every day that it does not rain.



Maintenance

Blueberries need daily water during the dry months unless is it very cool and foggy, in which case you can water every other day. Blueberries like high humidity, so misting or overhead watering the plants on hot days is recommended.

Fertilizer is not needed until the second year, at which time you can apply 2 oz. of a complete acid-forming fertilizer such as Azalea and Rhododendron food in the spring prior to flower formation. Every spring add 2 more oz. (Year three= 4 oz.; Year four= 6 oz.; Year 5 = 8 oz.) After year five, provide 8 oz. of fertilizer per year. Maintain the 6" pine needle mulch layer, although you can use composted oak leaves as well. Grass clippings can be used as mulch, but if used, decrease the fertilizer as grass-clippings are a source of available Nitrogen. Remove all weeds. Do not plant other plants in the containers as blueberries are very vulnerable to

competition. Blueberries require very little pruning, but with time you may need to occasionally remove old wood and head back tall shoots. Prune right after harvest. The buds for the next years crop form in wood produced in the late summer and fall. Blueberries lose their leaves in the winter after several months of brilliant fall color. If you are in the hotter inland areas of the county, you may need to provide shade in the hottest months. Plants reach maturity and full production at 6 years of age, and if treated correctly may live 20-50 years.



Bloom and pollination

Blueberries can produce 5-8 flower buds on healthy shoots, with each bud producing 5-10 flowers that open in the spring, most frequently in March. Buds are produced on 1 year old wood. The flowers on thicker shoots open later than the buds on thinner wood. Two varieties of the same species are needed for pollination to be successful. Blueberry blossoms are buzz pollinated by native and bumble bees.



Fruit harvest

Blueberry plants should produce about ½ a pound of fruit by the third year, and up to 8 pounds of fruit by the time they are eight. The round fruit ripens 2-4 months following bloom. Berry size ranges from .5-.75". Harvest usually begins in June and depending on the amount of sunlight the plants received, may extend into August. The berries turn a consistent blue when they are ready. Harvest weekly. If birds discover your crop, net the plants. Do not wash until you are ready to eat them. Unwashed berries will keep well for several days in the refrigerator, and they freeze easily.

Varieties

Rabbiteye Varieties

EARLY SEASON VARIETIES

Austin—Plants are moderately vigorous, productive and upright. Berries are large in size, blue in color, firm, have dry scars, good flavor and good shelf life. Ripens May to early June.

Brightwell—Berries are medium in size and blue in color, with small dry scars and good flavor. Plant growth is vigorous, upright and produces enough new canes to renew the plant.

Climax —Upright open plants. Berries are large in size, medium-dark blue in color, have a small scar, and good flavor. Concentrated ripening period. Ripens May to early June.---
RECOMMENDED

Premier—Ripens two to three weeks before Tifblue. Large fruit with good flavor. Plants are vigorous, upright, disease resistant and productive.

MID TO LATE SEASON VARIETIES

Tifblue—Bush is vigorous and widely adapted. Fruit is large, round, light blue, sweet, very firm with a small dry scar. Berries appear to be ripe several days before full flavor develops. Berries remain on the plant several days after fully ripe. Most productive of all rabbiteye varieties and is the standard to which rabbiteyes are compared. Ripens early June.

Powderblue—Plant is vigorous, disease resistant and productive. Ripens similar to Tifblue with better fruit color and more foliage. RECCOMENDED

Centurion—Ripens later than Tifblue; adds one or more weeks to the rabbiteye ripening season. Plant is vigorous and upright. Fruit has good flavor, not as firm but darker than Tifblue.

Baldwin—A productive late ripening variety with good flavor and firm dark blue fruit; has a lengthy ripening period; adapted to pick your own and backyard plantings.

SOUTHERN Highbush Varieties

These varieties combine the late blooming date and shorter ripening period of the northern highbush and the low chill hours and adaptability to the southern environment of the rabbiteye. This combination results in a blueberry plant that blooms late to escape the possibility of frost damage to the flowers but matures its fruit by mid-May, at least 2 weeks earlier than rabbiteye. Southern highbush varieties include the following:

Biloxi— low chilling variety Plants are upright, vigorous and productive. Fruit is medium in size, has good color, flavor and firmness with a small picking scar. Ripens late April. Use Misty as pollinator. **Blue Ridge** - Produces medium to large fruit with excellent color, good firmness and excellent flavor. Picking scar is fair with occasional tearing. It was originally released for the home garden but a few growers are considering small plantings for commercial production. Requires 500 to 600 chill hours. North Carolina release 1987

Bladen - Similar to Reveille in berry size, vigor and productivity. It is more resistant to cracking in wet weather. Color development is more uniform during ripening. Firmness and flavor are good. Bushes are upright and vigorous with a slightly wider canopy than Reveille. The blossoms are not completely self fruitful, so interplanting with a variety such as Reveille will insure adequate pollination. Ripening is 4 to 5 days earlier than Reveille. Leafing is poor on bushes with excess flowers. Topping, or late pruning, should increase fruit size and reduce bush damage. North Carolina release 1987. Requires 500 to 600 chill hours.

Bluecrisp—The flesh of the ripe fruit is so firm it has been described as crunchy. Plant is moderately vigorous, more spreading than upright. Fruit color is light blue, deep dry scar, firm, sweet with a good shelf life. Ripens early May.

Cooper - Moderately vigorous, upright, productive with medium size fruit. Flowers later than Climax, but ripens two weeks earlier than Climax. Requires 400 to 500 chill hours.

Jubilee - Plants grow upright and are vigorous and productive. Fruit of Jubilee is medium in size and has good color, flavor, firmness and a small picking scar. Plants of Jubilee bloom later and ripen their fruit about two weeks earlier than Climax. Fruit on Jubilee plants retain good quality over an extended period and can be completely (95 percent) commercially harvested in one or two pickings. Requires 550 to 650 chill hours. Mississippi release 1995.

Georgia Gem - Moderately vigorous, upright, productive, with medium size, firm, fruit that has good color and a small scar. Requires 350 chill hours.

Gulf Coast -. Vigorous, semi-upright, medium productivity, fruit medium in size, firm, small stem scar and good flavor. Requires 400 to 500 chill hours.

Magnolia - Plants of Magnolia have a spreading growth habit and are medium in height, productive and vigorous after field establishment. Small plants require good planting management to ensure good survivability. Fruit of Magnolia is medium in size, has good flavor, color, firmness and a small picking scar. Plants of bloom later and ripen their fruit about two weeks before Climax. Requires 550 to 650 chill hours. Mississippi release 1995.

Misty—Blooms and ripens about the same time as Biloxi. Berries are light in color with a good scar and firmness. Plants are vigorous and upright. Ripens late April. Use Biloxi as pollinator. RECOMMENDED

O'Neal—Ripens early with large, high quality fruit of medium blue color with good picking scar and flavor. Vigorous, semi-upright Ripens late April to early May. 400 chill hours RECOMMENDED.

Ozarkblue —Exceptional yields with good fruit size and quality. Requires a period of 800 to 1000 chill hours. Ozarkblue has consistently fruited in variety trials when most other southern highbush and rabbiteye cultivars have had partial

to total crop losses to spring freezes and frost. Pollinate with Summit-- RECOMMENDED

Pearl River—Vigorous, productive, upright plants. Pearl River is a hybrid of highbush and rabbiteye blueberries. Fruit is firm, medium-sized, good flavor, small scar and somewhat darker than other cultivars. Ripens early May. Requires 550 to 650 chill hours. Mississippi release 1995.

Reveille -. Ripens in early May. Fruit is medium in size, light blue, very firm, crisp textured with a pleasant flavor. The bush is very upright with a narrow base. Rapid growth in early years allow for high yields from young bushes, Older bushes are also very productive. Early blooming makes late freezes a danger. Fruit cracking occurs during wet periods. Some berries remain red or green at the stem end after the blossom end is blue. Requires 500 to 600 chill hours.
RECOMMENDED

Santa Fe—Plants are vigorous and upright. Flowers later than rabbiteye and ripens late April in South Mississippi. Fruit is medium sized with excellent scar, flavor and firmness. The color is blue to black-blue. Branches are stout rather than twiggy and easy to prune.

Southmoon—Fruit is large, firm, good scar, medium color and good flavor. Bush is vigorous and upright. Ripens late April to early May. Star is a good pollinator. RECOMMENDED

Star—Fruit is large and easy to harvest because of a concentrated ripening period. Fruit has excellent scar, firmness, good color and good flavor. The plant leafs strongly before the first flowers open. The recommended pollinator is Southmoon. Ripens late April to early May.

Summit—A mid to late season southern highbush cultivar. Fruit is firm with large and excellent color, flavor and picking scar. Resistant to cracking tearing and stemming. Excellent performance in postharvest studies. Plant is semi-upright with medium vigor. Ozarkblue is a good pollinator.

Plant sources:

California Tropical Fruit Trees - <http://www.tropicalfruittrees.com/Bamboo.htm#berries>

Dave Wilson Nursery - http://davewilson.com/br40/br40_trees/br40vine_blueberry.html

Finch's Blueberry Nursery, Bailey, NC - <http://www.danfinch.com/berrys.htm>

Fall Creek Nursery, Oregon - <http://www.fallcreeknursery.com/home.html>

Blueberry Hill Nursery, potted rabbiteye and highbush. Call (352)685-2769 or (352)622-9190.

Miller Blueberry Nursery. Rt. 3, Box 5700, Palatka, FL 32177, Telephone (904) 325-7373.. All varieties. All sizes. Bare root and potted. Please call for prices.

Mixon Family Farm, Inc. Misty as well as all the newest releases from the University of Florida including Sapphire, Jewel, Star and Sante Fe.

Resources:

For More Information

Ericaceae family (Heath family), which includes plants such as Rhododendrons and Cranberries. http://www.csdl.tamu.edu/FLORA/cgi/gateway_family?fam=Ericaceae

Blueberry Culture. Edited by P. Eck and N. Childers, New Brunswick, NJ: Rutgers University Press, 1966.

Commercial Berry Production and Pest Management Guide. AGRS-53. University Park, PA: Penn State College of Agricultural Sciences, 2000.

Dunn, J., J. Harper, and G. Greaser. *Agricultural Alternatives: Fruit and Vegetable Marketing for Small-scale and Part-time Growers*. University Park, PA: Penn State Cooperative Extension, 2000.

Eck, P. *Blueberry Science*. New Brunswick, NJ: Rutgers

University Press, 1988.

Greaser, G. and J. Harper. *Agricultural Alternatives: Enterprise Budget Analysis*. University Park, PA: Penn State Cooperative Extension, 1994.

Kindhart, J. and G. Holcomb. *Blueberries: A Small-scale Agricultural Alternative*. Washington, DC: USDA Office for Small-scale Agriculture, 1994.

Pritts, M. and J. Hancock, eds. *Highbush Blueberry Production Guide*. NRAES-55. Ithaca, NY: Northeast Regional Agricultural Engineering Service, 1992.

Small-scale Fruit Production. AGRS-60. University Park, PA: Penn State College of Agricultural Sciences, 1997.

Growing Blueberries in the Home garden

<http://ohioline.osu.edu/hyg-fact/1000/1422.html>

Home Garden Blueberries

<http://pubs.caes.uga.edu/caespubs/pubcd/1106-w.html>

Blueberries: Clemson Extension

<http://hgic.clemson.edu/pdf/hgic1401.pdf>

Cornell University Fruit Resources

<http://www.hort.cornell.edu/extension/commercial/fruit/index.html>

Features information for scientists, gardeners, and commercial growers, including fact sheets and programs.

Mark Rieger's Fruit Crop Home Page

<http://http://www.uga.edu/fruit/index.html>

[Small-Scale Fruit Production - a Comprehensive Guide](http://ssfruit.cas.psu.edu/) - <http://ssfruit.cas.psu.edu/>

An online resource for people who wish to produce fruit on a small scale and who are not legally licensed to use pesticides. From Pennsylvania State University.

[Penn State Fruit Research and Extension Center](http://frec.cas.psu.edu/) - <http://frec.cas.psu.edu/>

Includes production guides and newsletters

[Pennsylvania Tree Fruit Production Guide](http://tfpg.cas.psu.edu/) - <http://tfpg.cas.psu.edu/>

Online information on diseases, pests, natural enemies, chemical management, integrated pest management, harvest and postharvest handling, cider production and farm management, establishing an orchard, choosing a tree fruit nursery, caring for nonbearing trees, and maintaining bearing orchards.

[Virginia Fruit Page](http://www.ento.vt.edu/Fruitfiles/VAFS.html) - <http://www.ento.vt.edu/Fruitfiles/VAFS.html>

Fact sheets on the cultivation of various fruit crops.

[North American Blueberry Council](http://blueberry.org/) - <http://blueberry.org/>

Promoting highbush blueberry growing. Information on the plant, growth, and the product.

[Rutgers Blueberry and Cranberry Research and Extension Center](http://cook.rutgers.edu/~bluecran/homepage.htm) -

<http://cook.rutgers.edu/~bluecran/homepage.htm>

Includes information on the history of these crops, cultivation methods and techniques.