



Environmental Horticulture Notes

EHN 86

GROWING CANE BERRIES IN THE SACRAMENTO REGION

With good preparation and proper care, most cane berries (blackberries and raspberries) can be grown in the Sacramento area. 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 cane berries in the garden, but most of the topics are relevant to commercial production as well. See EHN 88 for information on blueberries.

SPECIES AND VARIETIES

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 that are good for fresh eating or cooking. Another good variety is 'Black Butte'. 'Marion' berry is widely grown in the Pacific Northwest; the plant is very spiny and the berry 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 tart flavor.

BOYSENBERRIES: The boysenberry, which originated in California, is reddish-black, juicy, and very large at maturity. Its aroma and sweet-tart flavor are suggestive of raspberries, and they are available in both thorny and thornless varieties. The nectarberry is very vigorous and thorny but produces a berry especially good for baking. The thornless youngberry is similar to the nectarberry, but 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' will tolerate full sun. Red raspberries have very invasive roots and will spread unless contained by deep borders. Master Gardeners at the Fair Oaks Horticulture Center attempted to contain raspberry roots with an 18" flexible bamboo barrier but were not totally successful. Unwanted shoots need to be hoed or removed 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 (May-June) on last year's canes. Everbearing (also known as fall-bearing) varieties produce flowers and then fruit on the mature tips of current season's growth, starting in late summer and continuing through the fall. If not pruned, the same canes would then over-winter and produce a smaller second crop on the lower half of the canes the following May. Black raspberries have dark fruit in June or July that are produced on vines trained as 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 sweet 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 viney 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.

CURRENTS 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 fruiting bushes 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'.

CULTURAL PRACTICES

Cane berries, like most woody plants, will grow on most soil types, provided that the soil is porous and well drained. Raspberries, however, produce best on sandy loam soil. Most berries grow best in a soil with a pH of about 6.0 to 7.0.

SOIL PREPARATION: Cane berries 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.

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.

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. Cane 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. After planting, irrigate and cover the soil with plenty of mulch, such as wood chips.

In-row spacing for blackberries is 3½ to 4 feet, and raspberries can be planted 2½ to 3 feet. Rows should be 8 to 10 feet apart.

FERTILIZING: Berries do not require large amounts of fertilizer 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. As growth begins in early spring, fertilize raspberries and blackberries with a 20-20-20 formula at a rate of 4 to 6 pounds per 100 feet of row; this application can be split half in spring and half at bloom. Organic fertilizers such as blood meal, cottonseed meal, fish meal, and alfalfa meal can be applied instead of the above inorganic recommendations to any of the berries.

WATERING: Berries require moist but not wet soil. Water is critical during berry development through harvest, and during bud formation. Overhead watering is not recommended for raspberries because it promotes fruit rot and leaf diseases. 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 foot apart. The amount of water depends upon the type of soil, drainage, and weather, so frequent testing of soil moisture is recommended.

TRELLISING AND PRUNING

TRELLISING: Blackberries, boysenberries, and red raspberries require a trellis on which to tie or wrap the canes. End posts should be strong (4 to 6 inches), and the posts in between (if necessary) can be 2-inch-by-2-inch grape stakes, spaced 20 feet 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 about 2 feet above ground, the second wire at about 4 feet, and the top wire at about 6 feet.

Raspberries can be trellised in several ways. The most common support method is a three-wire trellis, in which a single top wire is placed 4½ feet above ground, and two detachable wires are placed 2½ feet above ground. The detachable wires are used to bring the newly grown canes into the row; they are placed on a hook or bent nail attached to either side of each post when the new canes have grown to a height of 3 to 4 feet (about early May). Alternatively, the wires could be placed on short crossarms and the new canes tucked in between them.

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

PRUNING: Blackberries. After the summer harvest, the old canes that fruited are cut back to the ground. About 5 to 8 new canes are allowed to grow and all other new canes are cut back to the ground. In the winter the new canes are cut back to 5 to 6 feet long. They can then be spread out in a fan shape and tied to the trellis wires, wrapped to the top wire, or brought over the top wire and tied to the middle wire. The side branches (laterals) are cut back to 12 inches.

Raspberries. 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. After late spring harvest, remove the old fruiting canes, select and tie the strongest well-spaced new canes (8 to 12 per plant) to the trellis wires, and cut the remaining canes off at the ground.

Everbearing varieties bear mostly on current season's growth in the fall (from September thru November), so they are usually completely cut back to the ground each winter. If a small June crop is desired, the canes are instead cut below the autumn fruiting region rather than cutting the entire cane back to the ground.

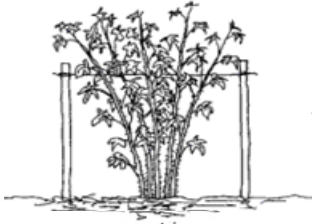
Summer-bearing varieties bear fruit in June on over-wintered canes while new vegetative shoots grow from the ground to become the next year's fruiting canes. No canes are removed in winter (except for weak, broken, or damaged canes), instead, the canes can be shortened to 6 feet. All fruiting canes are cut back to the ground after harvest allowing new canes to grow.

Black raspberries bear fruit in June, after which the fruited canes are cut to the main stem. During the summer, 3 to 5 new canes are cut back to 2 to 3 feet to force lateral side shoots. During the winter, the laterals are cut back to 8 to 10 inches (5 to 8 buds), and any damaged or weak canes are removed.

PRUNING RASPBERRIES



1. During spring and early summer, last year's growth is blooming and bearing fruit as new shoots emerge from the crown. You may remove all but 5 to 8 of the new shoots. Let them continue to grow on the ground.



2. After harvest in June or July, cut all of the bearing canes to the ground and tie 5 to 8 new canes to the wire.



3. Head back the new canes at a point a few inches above the wire to encourage lateral growth along the wire.



4. In winter, cut the laterals back to 18 inches. They will bear the next summer and continue the cycle.

ADDITIONAL INFORMATION

- UC Integrated Pest Management Program, ucipm.ucdavis.edu
Powdery Mildew on Fruits and Berries, Pest Note 7494
Spider Mites, Pest Note 7405
Spotted Wing Drosophila, Pest Note 74158
- UC IPM Pest Management Guidelines: Caneberries, UC ANR 3437, anrcatalog.ucanr.edu
--Botrytis rot
--Verticillium wilt
--much more information about disease and insect pests affecting caneberries
- *California Master Gardener Handbook*, 2nd edition: UC ANR 3382, anrcatalog.ucanr.edu (\$)
- UCCE Sacramento County Master Gardeners: ucanr.edu/sacmq
- Northwest Berry & Grape Information Network: berrygrape.org
- ATTRA "Organic Culture of Bramble Fruits": attra.ncat.org/attra-pub/bramble.html (\$)

CANBERRY VARIETIES RECOMMENDED FOR SACRAMENTO

RASPBERRIES	COLOR	RIPENING TIME	COMMENTS	FAVORITES	GROWN AT FOHC
Black raspberry					
Munger	black	mid-late May	small berries; somewhat seedy; sweet and fruity		
Summer bearers					
Anne	golden	mid May	plump with mild flavor; produces throughout summer	X	
Canby	red	mid May	almost thornless; large, good quality berries; ideal for freezing		X
Latham	red	mid May, again Oct-Nov	less seedy than most; mild flavor		
Meeker	red	mid May, again Oct-Nov	large berries; sweet and tangy		
Newberg	gold,orange	mid May, again Oct-Nov	large berries; sweet and spicy		
Willamette	red	mid May	large berries; delicate pleasant flavor		X
Everbearers					
Bababerry	red	mid-late May; again Oct-Nov	large berries; sweet taste		
Fallgold	golden	mid-late May, again Oct-Nov	sweet mild flavor; produces throughout summer	X	X
Heritage	red	mid-late May; again Oct-Nov	very mild flavor		X
Indian Summer	red	mid-late May; again Oct-Nov	small berries; mild spicy flavor		
Oregon 1030	red	mid May; again Oct-Nov	plump berries; sweet and tangy	X	
September	red	mid May; again Oct-Nov	plump berries; mild flavor		

BLACKBERRIES	GROWTH HABIT	RIPENING TIME	COMMENTS	FAVORITES	GROWN AT FOHC
Thornless:		All late May - late July			
Arapaho	erect	mid season	large berries; good flavor		X
Black Satin	semi-erect	mid season	large firm glossy black berries; sweet; excellent quality		
Loch Ness	erect	late season	sweet with tart aftertaste	X	X
Thornless Boysen	trailing	early season	large almost seedless sweet berries		X
Waldo	trailing	mid season	sweet tones		
Thorned:		All late May - late July			
Black Butte	trailing	mid season	big long berries; sweet-tart flavor	X	X
Marion	trailing	mid season	sweet good blackberry flavor	X	X
Ollalie	trailing	early season	sweet and tangy flavor	X	X
Siskiyou	trailing	mid season	sweet flavorful berries; firm large berries		X
Nectarberry (Boysen)	trailing	early season	huge juicy berries; sweet and delicious	X	X

December 2015, revised. December 2000, written by UCCE Sacramento County Farm Advisor Chuck Ingels, and UCCE Sacramento County Master Gardeners. Edited by Judy McClure, UCCE Sacramento County Master Gardener Program Coordinator.