

RASPBERRIES AND BLACKBERRIES

Fruit Gardens



By
Frank Morrison
 Extension Horticulturist

Raspberries and blackberries are not as available from farm markets and grocery stores as many other fruits, making the fresh fruits a welcome addition to the fruit garden or home landscape.

Raspberries and blackberries, also called brambles, begin to bear fruit the year following planting. The roots and crowns live for several years and each year produce a new crop of canes. These canes grow the first summer, bear fruit the second summer, then die. Everbearing plants are an exception in that some fruit will develop the first year.

Under favorable conditions and with proper care, bramble plantings may be productive for 8–10 years or longer.

Site Selection and Preparation

Brambles grow best in a soil that is well drained but holds moisture readily. A deep, sandy loam soil well supplied with humus is best. A deep soil encourages deep rooting, and plants are less likely to suffer from drought than shallow-rooted plants. In most summer seasons, water to supplement rainfall will help maintain plant vigor and increase fruit production and quality.

Raspberries and blackberries should not be planted in the same soil where potatoes, tomatoes, pepper, eggplant, or strawberries have grown within the past two, preferably three, years. The fungus disease verticillium wilt may persist in the soil and infect bramble plants through the roots.

Sometimes a less desirable planting site can be improved by building up the area using retaining walls or raised beds. Humus can be added to sandy soils before planting. Then, mulch around plants to improve moisture availability and modify soil temperatures.

Protection against strong winds will help reduce cane breakage and increase fruit production. Buildings and taller plants help protect brambles from winter and summer winds.

The ground preparation for planting will depend on what has been growing in that location. A site that has been regularly tilled and planted to garden can be prepared the same as for planting seeds. If grass has been growing in the site, tilling the year before planting will eliminate grass competition and white grubs.

The planting site should be tilled so clods are broken up and soil is worked and mellow to a depth of 5–8 inches. A hedgerow planting will require a row about 18 inches wide. For hills, an area of at least 6–9 square feet should be worked for each hill.

Grass areas may be low in soil fertility. A soil analysis, available through your county Extension office, will identify needed plant nutrients. A regularly fertilized garden soil may not need nutrients until plants begin bearing.

The desirable soil pH range for brambles is 5.8–6.5. Generally, a good garden soil will be satisfactory.

Fall tilling is recommended to avoid having to work the soil under wet conditions in the spring. The effect of “puddled” soil may interfere with good plant growth for the life of the planting, particularly on heavy soils.

Bramble Kinds and Cultivars

Weather conditions should be considered in selecting the kinds of brambles to plant as well as the cultivars (varieties). Black and purple raspberries will grow in all areas of Kansas. The fruit of some red raspberry cultivars may sunscald, but the problem generally is less severe in north-east Kansas.

Blackberries do not survive extreme low temperatures and may be severely damaged by subzero temperatures, especially thornless and trailing types.

All brambles are self-fruitful, thus one cultivar will be adequate for pollination. Purchase certified virus-free stock whenever possible.

Raspberry Varieties

Red Raspberries
Heritage
September
Latham
Taylor
Southland

Black Raspberries (Black-cap)
Black Hawk
Bristol
Jewel

Purple Raspberries
Brandywine
Amethyst
Royalty

Yellow Raspberries
Fallgold
Goldie

Blackberries

There are two types of blackberries—erect-growing and trailing. Trailing blackberries (also called dewberries) include boysenberries, youngberries and loganberries. Their long trailing growth habit requires support for the canes.

A disorder commonly called sterility may reduce blackberry production. Plants affected may bloom profusely but produce few berries, and those are usually malformed. Virus infections may cause sterility, but other factors may also be associated with the problem. Plants propagated from tissue culture generally are not infected with the sterility virus.

Erect Blackberries
Black Satin
Chester Thornless
Hull
Choctaw
Shawnee
Arapaho*
Navajo*

Trailing Blackberries
Lucretia
Boysen
Young

*Thornless, semitrailing; trial planting suggested

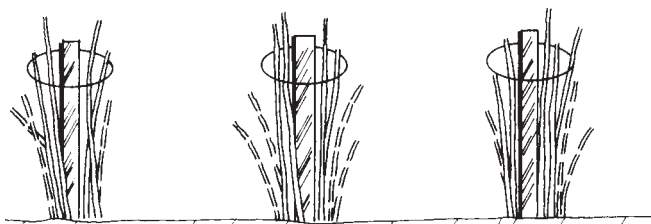
Planting and Care

While planting, hold the plants in a bucket of water to keep roots from drying out. Set red raspberry plants about 2–3 inches deeper than they were in the nursery row. Other brambles should be planted about an inch deeper. A dark gray line on the upper root and lower stem area indicates the nursery planting depth.

The roots should be spread out in the planting hole, then the soil firmed over them. Apply 1–2 quarts of water around each plant to settle soil around the roots.

After planting, cut red raspberry canes back to about 8–12 inches. On black and purple raspberries, “handles” should be cut off at ground level and removed from the planting site as a sanitary measure to control diseases. Blackberries should be cut back to about 6 inches.

Red raspberries are planted about 2 feet apart in the row. The row width is generally 6–8 feet apart. When planted in the hill system, the plants are usually set 5–6 feet apart each



Plants grown in a hill system can be tied to stakes.

direction. Black and purple raspberries generally need more space than reds and are set about 3 feet apart in the row, in rows 8–10 feet apart. If they are planted in hills, the spacing can be 6 feet by 6 feet. Erect blackberries can be spaced the same as black and purple raspberries, whether planted in rows or hills.

Fertilizing. Fertilizer can be applied around each plant about 2–3 weeks after planting if the soil was not fertilized earlier. Apply 1 ounce (1 tablespoon) of 12-12-12 or 13-13-13 or similar analysis fertilizer around each plant. In the second and following years, the plants can be fertilized with one of the above fertilizers at the rate of $\frac{3}{4}$ –1 pound per 100 square feet broadcast along the hedgerow, or about $\frac{1}{4}$ cup around each plant in the hill system.

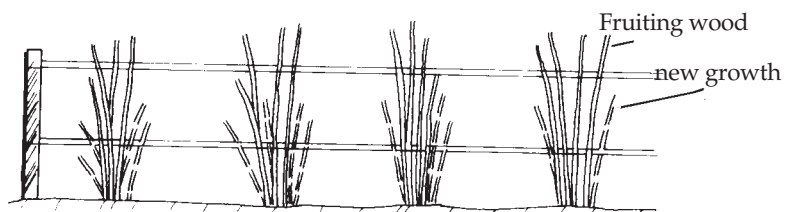
Mulching. Brambles generally should be hoed or cultivated during the early part of the first summer while young roots are developing. Mulches applied early around young plants may interfere with root growth and plant establishment. In the late summer, after plants are established, they may be mulched. Mulching helps to control weeds, conserve soil moisture, reduce soil temperatures in summer, prevent winter injury to the crowns, and promote a fibrous root system.

Soil management. Between plant rows or around hills, the ground can be hoed or shallow tilled for weed control, or grass sowed and mowed. The most efficient use of water in the planting would be to till or hoe the ground, mulch the plants, and use trickle irrigation to supplement rainfall. Brambles require about an inch of water per week. Irrigation frequently is needed during the summer months, particularly as fruits are maturing. Apply enough water to wet the soil to a depth of about 10 inches, soaking the ground.

Winter Protection. Temperatures below 0°F generally will damage canes of blackberries. Lower temperatures will cause progressively more damage to all brambles, including some damage to the tips of canes on raspberries. At temperatures of -10 to -15°F, blackberry canes are severely damaged or killed. Trailing blackberries can be protected by laying them on the ground and covering with soil or straw after they become dormant in the early winter. When the danger of severe cold weather is past in spring, uncover the canes, do the dormant pruning and tie the canes to the support.

Pruning and Training

The growth and fruiting habits of blackberries and raspberries are the same. The root system is perennial and lives for many years, sending up a new crop of shoots



Brambles can be supported between horizontal wires, with top wires about $\frac{3}{4}$ feet above ground. A lower set of wires can be used for support at about $\frac{1}{2}$ feet above ground.

(primacanes) each year. The shoots are biennial. They complete their growth the first season (after which they are called floricanes), bear the fruit crop the following summer, and die shortly after fruiting. Shoots may arise from two sources—from buds at the base of the canes and from buds on the roots. Red raspberries and blackberries produce shoots from both sources. Those coming from the roots are called suckers. Purple and black raspberries do not produce suckers.

Everbearing brambles bear fruit twice on the same cane. The new shoots bear fruit at the tips in the fall, and again the next season lower on the cane. With this growth characteristic, the everbearing plants can be managed for a fall and summer crop, or for a fall crop only if the canes are cut off 2–3 inches above ground level during the dormant period after the fall harvest.

Support systems. Most brambles, except trailing blackberries, may be grown without a support. However, support systems can help reduce cane damage from wind and the weight of the fruit crop.

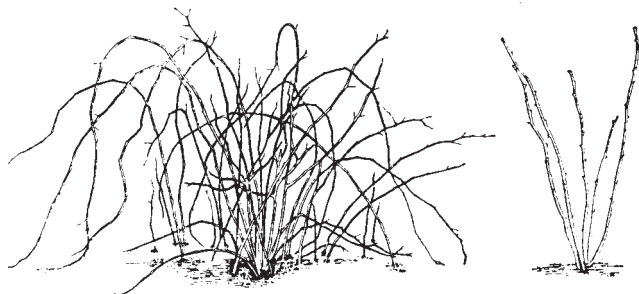
Plants grown in a hill system can be supported by a single stake 2–4 inches in diameter. Five to eight canes are tied to the stake in one or two places in the spring after dormant pruning.

Trellis systems may be used to support hedgerow plantings. Posts for the trellis may be wood or metal. Wood posts should be treated to prevent rotting off below ground. Posts are set about every 20 feet with about 5 feet remaining above ground. At about 3½ feet above ground, nail or bolt a cross piece about 18 inches long to each post. Attach a wire to the ends of the cross pieces along each side of the row. The canes are trained between the wires or tied to them. Wire clips between posts will keep wires from spreading.

A wire trellis, with one, two or three single wires strung between posts, can also be used.

Red raspberries. Pruning and training red raspberries is different from other brambles. As new shoots develop during the summer, no pruning is necessary. If numerous suckers develop and increase the row width too much, excess shoots can be cut out. In late winter, canes can be pruned while plants are dormant. Remove weak canes. Keep strong canes that are 4–6 inches apart and maintain the row width at 18–24 inches. Canes are headed back to about 5–5½ feet.

Cane tips that have been injured by wind, winter temperatures, insects or other causes are pruned back to healthy wood. When plants are grown in a hill system, pruning procedures are similar, with suckers removed to confine the hill to the desired area.



Red raspberry plants before and after dormant pruning.

Black and purple raspberries and blackberries. Shoots should be summer-tipped by removing 2–3 inches from the top. This promotes growth of side branches and stocky plants that are more ridged. It is necessary to tip the ends of shoots several times during the summer because all shoots do not reach the same height at the same time. The laterals should not be shortened until the following spring.

Extra blackberry canes should be thinned near the end of the dormant season. Select strong canes that are spaced about 6–8 inches apart. Keep row width at 12–15 inches at the ground level, or picking will be difficult.

Since black and purple raspberries do not produce suckers, the canes are located in clusters or “hills” where the original plants were set. Canes less than ½ inch in diameter at the base should be removed during the dormant pruning. Five to eight canes per hill should be selected for fruiting.

The laterals or branches on the canes should be cut back after winter injury can be determined, but preferably before buds make much growth.

With black raspberries, 8–10 buds per lateral are usually enough. Purple raspberries are more vigorous than black, and a few more buds per lateral can be left. Laterals in both purple and black raspberries can be longer if canes have only two or three laterals, or if there are only a few canes per hill.

Blackberry cultivars differ in fruiting habits. Some have fruit clusters near the ends of the laterals, and in some, the clusters are close to the main stem. Generally, about one-half of the growth of each lateral may be removed.

Trailing blackberries. During dormant pruning, select the strongest 4–8 canes for semi-erect plants, and 8–16 canes for trailing plants. Remove weak canes at ground level.

Because canes die after fruiting, they must be removed. This is a large part of the pruning of raspberries and blackberries. It is advisable to remove these canes soon after harvest as a disease-control measure. Cuts should be made close to the ground.

Harvesting

In blackberries, the “core” comes off with the fruit, while in raspberries it stays on the plant.

The best gauges of maturity are fruit color and ease of separation. Full color often develops before the berries separate easily. If the berries are picked too soon, berry size



Black raspberry plants before and after pruning. Purple raspberries and erect blackberries are pruned in a similar manner.

and flavor will be reduced. To harvest at peak quality, berries should be picked every 2–3 days. Avoid harvesting when berries are wet. Pick by gently lifting the berries with the thumb and finger. After picking, keep berries in the shade or, preferably, the refrigerator to extend shelf life.

Berries should be harvested into shallow containers so they are not piled up or the bottom berries will lose their shape and leak juice. Raspberries and blackberries have a higher respiration rate than other fruits and must be handled carefully to maintain their quality.

Cool the berries as soon as possible after picking, preferably within one hour, to minimize moisture loss, fungal growth and fruit breakdown. Berries cooled to near 32°F within one hour after picking, then held in a refrigerator or cooler near this temperature will keep the good quality for several days.

Blackberry and Raspberry Varieties

(from *Fruit and Nut Cultivars*, MF-1028)

Blackberries

Shawnee	Thorny, very large fruit, good quality, very productive; early ripening, good cold-hardiness; vigorous; erect canes do not require support.
Black Satin	Thornless, large fruit, good quality; very productive; late ripening; not cold-hardy; vigorous; canes require support.
Chester Thornless	Large fruit, good quality; very productive, late ripening, best cold-hardiness of the thornless types; vigorous; canes require support.
Hull Thornless	Large fruit size, good quality; very productive, late ripening, fair cold-hardiness; vigorous; canes require support.
Arapaho	Thornless, medium-size fruit, good flavor, perhaps better than Shawnee or choctaw; earliest ripening thornless, 2 days before Shawnee; moderately productive, good cold-hardiness; vigorous; erect canes do not require support.
Choctaw	Thorny, medium-large fruit, somewhat soft, good flavor, very productive, ripens very early, 2 weeks before Shawnee; good cold-hardiness; vigorous; erect canes do not require support.
Navaho	Thornless, medium-size fruit, very firm, very good flavor; ripens 1 week after Shawnee, moderately productive; good cold-hardiness; relatively low vigor, suckers poorly from roots; erect canes do not require support.

Raspberry, red

Heritage	Fruit medium size, firm and holds together; canes strong and upright, and vigorous; canes bear in the fall and again in the spring.
Latham	Red, medium berry size; medium yields; spring crop, good fruit quality; very cold-hardy.
Southland	Red, large berry size, mild flavor; spring crop, early ripening; possibly more heat-tolerant; fair yields, good cold-hardiness.
Taylor	Red, medium berry size, excellent quality; spring crop, mid-season, fair yields; vigorous, very cold-hardy.
Titan	Red, very large berry, mild flavor, high yields; spring crop, early ripening; erect canes, nearly thornless, good cold-hardiness.

Raspberry, black

Allen	Large, good quality fruit; plants vigorous; not fully tested in Kansas.
Bristol	Medium-size, high-quality fruit; vigorous and hardy.
Jewell	Large, glossy black fruit, very productive; very vigorous and winter hardy; highly resistant to diseases.

Raspberry, yellow

Fall Gold	Medium to large, sweet fruit; amber color, primocane fruiting.
Goldie	Medium-size, round, firm berries, deep yellow color with pink blush; little if any sunscald; primocane fruiting; multiple uses.

Raspberry, purple

Brandywine	Large, firm, tart, good quality berries; plants are vigorous, productive and hardy.
Royalty	Purple fruit, very large berry size; good quality, sweeter than Brandywine; productive and vigorous; spring crop, late ripening, good cold-hardiness, but buds and wood are tender after buds break.

Raspberry, Red, Black, Yellow and Purple

A number of additional cultivars could be listed, however, because these have not yet been tried or observed in grower's fields, recommendations will not be made.

Related Publications

- Planning Your Fruit Garden, MF-352
- Fruit and Nut Cultivars, MF-1028
- Fruit Pest Control, C-592
- Making and Using Compost, MF-1053
- Harvest and Storage of Fruits and Vegetables, MF-661

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

Publications from Kansas State University are available on the World Wide Web at: <http://www.oznet.ksu.edu>

Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, credit Frank Morrison, Raspberries and Blackberries, Kansas State University, December 1998.