Blackberry and Raspberry Culture for the Home Garden

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Blackberries are among the easiest of all fruits to grow. Few fruits produce more dependably than blackberries. Properly maintained, irrigated plantings of good varieties may produce crops for 15 years or more. Blackberry fruit has a range of distinctive flavors which vary from sweet to tart. The fruit can be used fresh, frozen, or canned. Well established plants will produce about 1 quart or more of fruit per linear foot of row. All these features make blackberries an attractive crop for home gardeners.

Before deciding to grow blackberries, several points should be considered:

1. site selection
2. variety choice
3. site preparation
4. propagation & planting
5. general care, including mulching, fertilizing, pruning, irrigation, training, and pest control
6. harvesting

Site

Cultivated blackberries do best on sandy loam soils with added organic matter. However, they will tolerate a wider range of soil types than will most other fruits. Good soil drainage and 2 1/2 to 3 feet of unrestricted rooting area are necessary for best plant performance. A site with a slight, north facing slope is preferred to help prevent spring frost injury and to protect plants from southwest winds in summer. Additional wind protection may be necessary, because succulent first year canes exposed to strong winds may be blown over and broken from the root system.

Variety choice

Blackberries and their hybrids have either an erect, semi-erect, or a trailing growth habit. Semi-erect and trailing blackberries require trellises. Erect blackberries are recommended because they require less labor and materials than blackberries which require trellises. Selection of several varieties can extend the harvest season considerably (Figure 1).

Several good varieties of erect blackberries have been released by researchers in Arkansas. These seem well adapted to Oklahoma conditions. They include:

Arapaho—an erect, thornless blackberry. The fruit are medium sized, firm, and have excellent flavor, ripening about 2 weeks earlier than Navaho. Arapaho was released in 1993. The fruit flavor is superior to semi-erect thornless blackberries. Since Arapaho has not been widely planted, its disease resistance is not thoroughly tested.

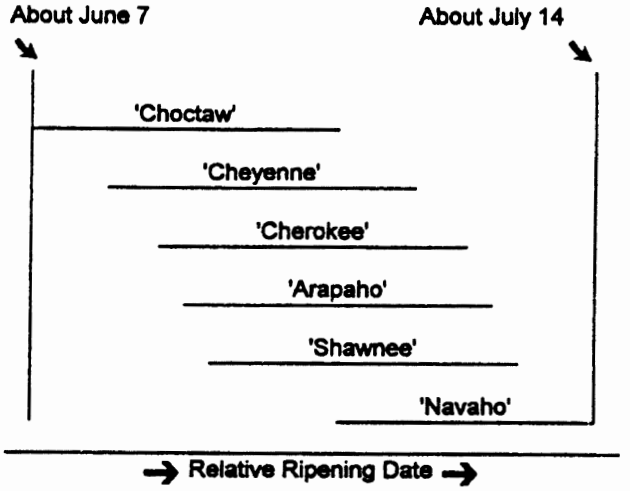

Figure 1. Relative ripening dates. Actual ripening dates may vary by as much as two weeks earlier or later, depending on the weather.

Cherokee—an erect, thorned blackberry. The fruit are large and firm, with excellent flavor, ripening in mid-season. Root cuttings are readily successful as a propagation method. A disease control program is recommended.

Cheyenne—an erect, thorned blackberry. The fruit are very large throughout the season. The flavor is slightly better than Comanche, but not as good as Cherokee. Cheyenne has smaller seeds than Cherokee. The fruit ripen in mid-season, slightly earlier than Cherokee. Root cuttings are readily successful as a propagation method. This variety is moderately tolerant to anthracnose, but a disease control program is recommended.

Choctaw—an erect, thorned blackberry. The fruit are medium in size and firm, with small seeds. They have better flavor than Cheyenne and Shawnee. Fruit ripen early in the season, about 9 days before Cherokee. Root cuttings are readily successful for propagation. This variety is moderately resistant to anthracnose, but is occasionally attacked by powdery mildew. It is known hardy to -14° F in Arkansas.

Navaho—an erect, thornless blackberry. The fruit are large and firm, and are less tart than other thornless. They ripen late in the season, about 12 days after Cherokee. This variety is moderately resistant to anthracnose, and is known hardy to -14° F in Arkansas. This is a higher quality blackberry

than the semi-erect thornless blackberries which have been available for years. Navaho is susceptible to orange rust and double blossom.

Shawnee—an erect, thorned blackberry. The fruit are large and of medium firmness, ripening about 5 days after Cherokee. They have better flavor than Comanche and equal to Cheyenne, but less flavor than Cherokee. The seeds are medium in size. This cultivar has more years of good yields than many cultivars. Propagation by root cuttings is readily successful. This variety is moderately tolerant to anthracnose.

Raspberries are grown in many of the northern states, but are not recommended for Oklahoma. Buds often break during warm periods in January and February. This makes the plants very susceptible to cold damage later in the season. Only moderately low temperatures may cause the death of entire canes. Blackberries do not usually begin growth as early as raspberries, and so are far more dependable for fruit production.

Raspberries are not heat tolerant. If they are planted in the state, they should be sited in at least 50 percent shade. Fruit quality and yield will not be nearly as good as they are in the northern parts of the United States. Raspberries stressed by excessive heat will be weak and susceptible to infection by many organisms. However, raspberries may be hard to kill once they are established, and can become nuisances. Their culture is similar to trellised blackberries.

Hybrids

There are several blackberry-raspberry hybrids on the market. The hybrids have trailing habits and must be trellised. In order to prevent excessive winter injury, avoid placing canes up on the trellis until late winter or early spring. These hybrids include:

Boysenberry—the berries are large, strongly flavored, soft, and medium to late maturing. When disease free plants are used, Boysenberries may produce well for 4 to 6 years. One selection is thornless, the other has very small thorns.

Dewberry—dewberries ripen early in the season, just ahead of several of the true blackberries. The berries are medium-large, medium-firm, and of good flavor. Plants are moderately vigorous and productive. Dewberries are somewhat more winter hardy than Boysenberries.

Youngberry—the berries are dark wine colored, large, sweet, and soft when ripe. They are not as flavorful as Boysenberries. The plants have small thorns, and are vigorous and moderately productive. Youngberries ripen somewhat earlier than Boysenberries.

Bababerry—this is a red raspberry that is said to be heat tolerant. However, this plant has not been very successful in Oklahoma. It is not recommended for planting here.

Site preparation

A soil test is needed to determine the need for fertilizer and pH adjustment each year. The soil should be deeply cultivated, and organic matter such as compost should be incorporated into the rows. If the soil needs additional drainage, the row areas should be built up into raised beds. The beds should be from 6 to 10 inches high and 2 to 3 feet wide. Little or no fertilizer is needed the first year. The soil pH should be 6.0 to 7.0. Add lime or sulfur as needed to adjust the pH into the optimum range.

Propagation and Planting

Arapaho, Navaho, Choctaw, and Shawnee are patented varieties, and may not be legally propagated for sale or for your own use. Non-patented blackberries may be propagated freely. Ask your plant supplier if you are in doubt.

Erect growing varieties are usually propagated with suckers or root cuttings, while the trailing varieties are propagated by means of tip layers. Both the time of propagation and the time of planting are influenced by the habit of growth.

Erect Blackberries—most nurseries produce plants from root cuttings. The root cuttings, 2 to 3 inches long and 1/8 inch diameter or larger, are planted in the early spring (March). The rows of cuttings should be from 1/2 to 1 inch deep, with cuttings 3 to 6 inches apart in the row. Plants will be ready for transplanting into the permanent row during the following winter.

Another method for increasing erect blackberries is from naturally occurring sucker plants. One year old suckers are dug from established rows and set into new permanent rows (Figure 2). More sucker plants can be produced by tilling near existing plants, which breaks the roots and results in generation of new plants from these "cuttings."

Planting may be done at any time during the dormant season, but most planting is done during February or early March. Space plants 3 to 4 feet apart in rows that are 6 to 8 feet apart. Plants should be set at the same depth at which they grew in the nursery row. Unless rain is likely, water the newly set plants.

Trailing blackberries and semi-erect blackberries do not usually produce suckers or develop from root cuttings. An easy, successful method of propagation is by means of tip layers (Figure 3). To tip-layer blackberries, place the tip end of the cane into the soil about 2 inches deep and cover it with soil. This should be done in September or October. Roots will develop during the late fall and winter. Dig the rooted tips during February or early March. Cut the tips from the original canes, leaving a 3 or 4 inch section of the cane attached to it. One established plant may produce from 10 to 20 tip-layered plants each year. The small amount of the cane cut off with the newly rooted layer will not noticeably affect the yield of the remaining cane. Space the new plants the same as you would erect blackberries.

General Care

The crowns and root systems of blackberries live for many years. However, new canes arise from the crown each year

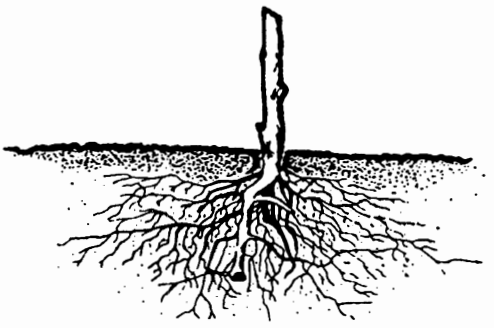

Figure 2. One year old plant.

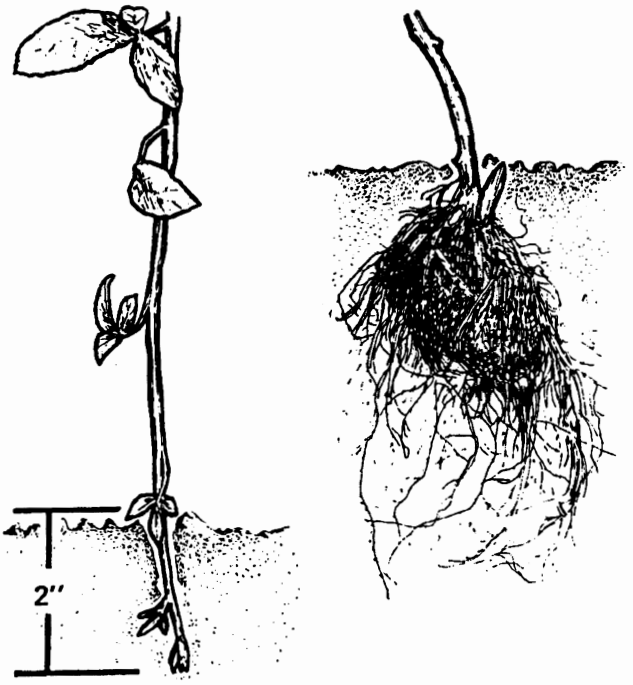

Figure 3. Tip layering.

and live for only two years. During the first year, the canes grow to their full height. The second season, these canes bear fruit and die. During their first growing season after planting, erect blackberry plants often produce prostrate to semi-erect canes. Erect canes will be produced in the following years.

Mulching. Blackberries should be permanently mulched with about 4 inches of organic material such as pine bark or wheat straw. This mulch will help control weeds, conserve soil and moisture, and prevent winter injury to crowns. Mulching also promotes growth of the extensive fibrous blackberry root system. Since the need to cultivate for weed control is reduced by the mulch, fewer blackberry roots are broken, producing fewer unwanted sucker plants between the rows.

Permanent mulch should be replenished each fall after the first killing frost. Blackberry-raspberry hybrids and raspberries are not usually as winter hardy as blackberries, and may need extra winter mulch to protect the flowering canes. Trailing blackberry varieties and erect varieties in their first year of growth may also be protected in this way. Allow the canes to remain on the ground, and cover them with some grass or straw mulch 4 to 6 inches deep. Let this temporary mulch remain until buds on the canes begin growth in late winter or early spring. Then remove it and put the canes on a trellis, if needed, as described below.

Fertilizing. After the first year, apply fertilizer to the blackberry plants at bloom time to stimulate plant growth, increase berry size, and boost total production. A second application of fertilizer should be made following fruit harvest to stimulate vigorous cane growth for next season's production. Use a total of about 10 pounds of a complete fertilizer such as 10-20-10 or 5 pounds of ammonium nitrate per 100 feet of row. Apply one-half of the fertilizer at bloom time, and one-half soon after fruit harvest.

Pruning. First-year plants are allowed to produce as much growth as possible without pruning or training to a trellis. Established plants grow new canes while the old canes are fruiting. During the summer, prune off the last few inches of new canes, leaving them 3 to 3.5 feet tall. This is called "tipping." Tipping forces the cane to develop lateral shoots from buds near the top portion of the cane. Fruit produced the following year from pruned canes will be at a convenient height for harvest. The fruits will be larger, cleaner, and of better quality than if canes are not pruned, because most of the fruit will be farther from the soil.

While tipping the new canes, cut off old canes that have finished fruiting. Make the pruning cuts near the crown of the plant, and remove the old canes from the field. This will decrease the likelihood of disease problems in the blackberry plants later.

New canes that have produced lateral branches after summer pruning should be pruned again in late winter (February or early March) to simplify harvesting and increase berry size. Shorten lateral branches to about 12 inches in length. Some new canes may need to be completely removed during the winter so that fruit harvest will be easier the next year. This thinning will also increase air circulation, discouraging disease growth. Leave 3 to 5 canes per linear foot of row on erect blackberries (Figure 4). Leave 8 to 15 canes of 4 to 8 feet in length on trailing varieties. If there are dead canes which fruited but were not removed during the previous summer, these should be removed at this time. A few dead canes may be left in very windy areas, to provide internal support for the plant and help keep new canes from breaking off. Dead canes may harbor diseases and red-necked cane borers, so this practice should be used with caution.

Trailing blackberries and semi-erect blackberries need a trellis for support. The trellis may be shaped like an "F" (Figure 5) or "T" (Figure 6). Additional, lower wires and crossbars may be added to the "T" to make a "V" trellis, which is easier to train the growing canes onto.

The "F" trellis is especially useful in northern Oklahoma, because it allows the primocanes, or current season's growth which has not yet flowered, to be mulched during the winter. This mulch can help prevent early budbreak and winter injury to buds. During the winter, the primocanes become floricanes, or flowering canes. In the spring when growth starts, these canes must be placed up on the trellis and tied loosely with natural fiber twine or with tape which is especially made for

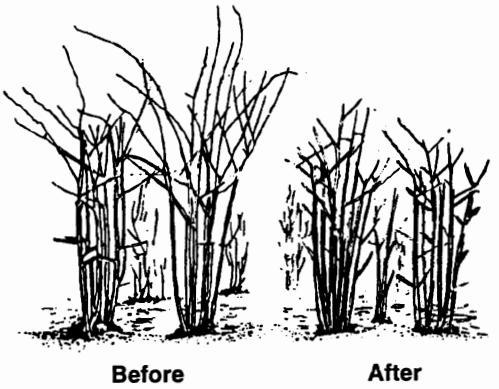

Figure 4. Pruning erect canes.

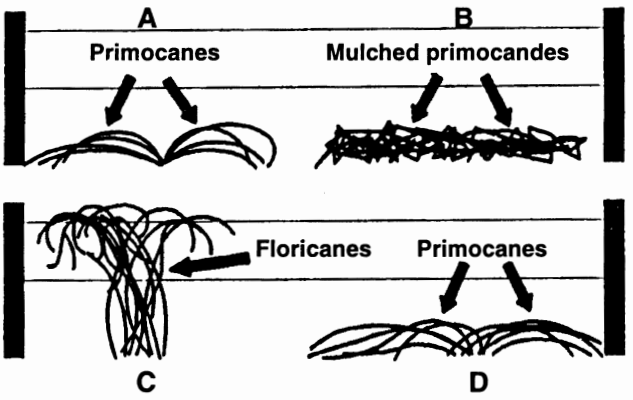

Figure 5. F-trellis. A - Primocanes grow during the spring and summer, and are left on the ground under the trellis. B - Mulch can be put over the primocanes in winter to help protect against cold injury. C - After growth begins in the spring, the mulch should be taken off the canes. The canes which have changed to floricanes during the winter should be tied loosely to the trellis wires. D - After the fruit are picked, the floricanes should be removed, leaving the new primocanes under the trellis.

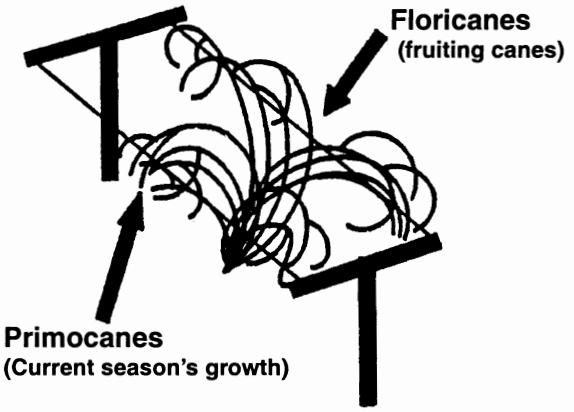

Figure 6. T-trellis. All new growth is trained to one side of the trellis, leaving the floricanes on the other side of the trellis, where they were placed the year before.

the purpose. New primocanes will develop at the base of the plant while the floricanes are flowering and setting fruit. These primocanes will be a nuisance when you are picking the fruit, but they must be treated well in order to produce a good crop next year. The "T" and "V" trellises allow you to train floricanes to one side of the trellis, and primocanes to the other side of the trellis. This makes picking and pruning much easier than having all the canes mixed together. It also gets the primocanes up out of the way. Primocane training must be repeated every 2 weeks throughout the growing season in order to keep the canes under control.

Irrigation. Summer watering may be necessary to provide for good plant establishment and to produce more top growth for fruit production the following year. Drought severely decreases production and berry quality, so irrigation during the fruit development and maturation period is very important when rainfall is lacking.

Water the blackberries whenever the soil under the mulch feels dry, or if plants appear to be wilting. Apply enough water to wet the soil to a depth of about six to ten inches without soaking the ground. Excess watering can cause the roots of the blackberries to die.

Pest control

Spraying for insect, disease, and weed control may be necessary. Refer to Fact Sheet 6243: Weed Management in Small Fruit Crops and Current Report 6221: Grape, Blackberry, Blueberry, and Strawberry Insect and Disease Control for further information.

Harvesting

Since the excellent flavor of blackberries is associated with full maturity, they should be picked at the correct stage of development. As blackberry fruit mature, they enlarge, develop a deeper blue-black color, and soften. When the berries appear ripe, a "taste test" is the best indicator of when to pick.

Harvest fruit during the cooler part of the day and plan to refrigerate the berries soon after harvest. These berries will usually remain in good condition for several days. Berries exposed to high temperatures after picking often decay rapidly.

Additional Published Material

BAE-1511 Trickle Irrigation for Lawns, Gardens, and Small Orchards
BAE-1655 Lawn, Garden and Small Plot Irrigation
PSS-2207 How to Get a Good Soil Sample
PSS-2236 Knowing When to Fertilize
PSS-2750 Guide to Effective Weed Control
HLA-6005 Mulching Garden Soils
HLA-6006 Commercial Fertilizer Use in Home Gardens
HLA-6007 Improving Garden Soil Fertility
HLA-6221 Grape, Blackberry, Strawberry and Blueberry Insect and Disease Control
HLA-6222 Home Fruit Planting Guide
HLA-6229 Pollination Requirements for Fruits and Nuts
HLA-6239 Commercial Blackberry Production
HLA-6243 Weed Control in Small Fruit Crops
HLA-7450 Safe Use of Pesticides in the Home and Garden
HLA-7612 Plant Disease Diagnostic Services

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