HOME GROUNDS FACT SHEET

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Growing Raspberries in Home Gardens

Site selection and preparation

A planting site for brambles should be selected one to two years before the plants are to be established. Factors such as soil fertility, moisture, topography, soil pH and exposure to light and wind must be considered. If a selection is made well before planting, many factors can be altered and the site properly prepared to successfully grow bramble fruits.

Soil is extremely important in bramble production. About 90% of a bramble root system is in the top 8-12" of soil where the roots must take up moisture and nutrients. Raspberries should be planted in deep, well-drained loamy soils with good water-holding capacities and high organic matter content. Sandy loams can be successfully used for raspberry production if irrigated and mulched lightly to conserve soil moisture.

Raspberry plants do not tolerate poorly-drained soils. Even temporarily water-saturated soil conditions can cause serious injury, including poor cane growth, increased incidence of soil-borne diseases and plant death. In addition to proper soil conditions, bramble plants require full exposure to sunlight and air movement and adequate moisture and protection from wind and frost injury. The availability of water for irrigation should be an important consideration in site selection.

Good air movement through plantings is also necessary for brambles. Poor air movement causes high humidity around the canes, favoring the development of many disease such as spur blight, anthracnose, powdery mildew and fruit rots. While good air movement in bramble plantings is desirable, excessive wind exposure can be a problem.

Cold, dry winds can increase winter injury. Windbreaks can provide some protection on exposed sites.

If possible, soil preparations should begin at least one year before planting to build up soil organic matter and eliminate perennial weed problems. The complete removal of problem perennials is necessary for successful bramble plant establishment.

Soil acidity is another important factor since brambles grow best in soil with a pH between 5.5 and 6.5. Most brambles do not grow well in soils with a pH below 5.5, and iron deficiency may occur in soils with a pH above 7.0. Therefore, soil should be tested and the pH corrected.

Before planting, incorporate phosphorus into the top 8" of the soil for better plant growth.

Planting

Dormant stock should be planted in the early spring after the danger of severe frost has passed. Plants should be kept moist during the planting operation. Fall planting is acceptable if plants are available.

Raspberries may be planted in hills or rows. In hills, plants should be spaced about 7' apart. In the row system, original plants should be spaced 2' apart in a line. These rows are spaced about 6'-8' apart. Set the plants 2" to 3" deeper than they were in the nursery, firm the soil around them and cut them back to 6" above the ground.

Raspberries spread quite rapidly and may present a confinement problem. To decrease this spread, a trench 2' deep should be dug around the planting area, walled with a double layer of 4 mil black polyethylene, and refilled. This will usually control the spread of the plants for several years. If plants appear outside the polyethylene, a second barrier should be constructed. This process may be repeated as needed.

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Fertilization

Two fertilizer applications should be done per year. Apply one application in March and the other in May as band applications in the row. Generally, 1-2 pounds of 10-10-10 per 100 square feet of row should be used. Fertilizers should **not** be applied to raspberries immediately after they are planted; root systems may be burned.

Harvesting

Raspberries are highly perishable and should be harvested every few days. The fruit are ready to pick when it separates easily from the "core" without crumbling. If the berries are harvested during cool, dry weather, they may be kept in the refrigerator for 3 to 4 days. If they are harvested during hot, wet or damp weather, they may mold within 24-36 hours after harvest.

Some recommended cultivars:

A cultivar should be selected for its intended use (fresh, eating or freezing), hardiness, productivity, relative disease resistance, fruit quality and time of ripening. Currently, no bramble cultivar has all these desirable features, so gardeners generally select those which have the fewest faults on selected sites.

Raspberries are self fruitful, so plantings of different cultivars are not necessary to ensure fruiting. Bees are the primary transporters of pollen.

SUMMER RED RASPBERRIES

Boyne: from Manitoba.
Plants are spiny and produce many suckers. Fruit ripens early and is small to medium in size and somewhat dark and soft, but has fair flavor and good freezing quality. Plants have excellent winter hardiness but are susceptible to anthracnose. Typically, Boyne yields very well and is recommended for colder climates.

Killarney: from Manitoba, a sibling of Boyne.
Plants are short to medium, spiny, produce many suckers and are susceptible to mildew and anthracnose. Fruit ripens early, slightly after Boyne. Fruit is medium-sized but very bright red. Flavor and freezing quality are good, but berries may soften in warm weather. This cultivar is very hardy and is recommended for colder climates.

Newburgh: from New York.
Plants are moderately productive, tall but not highly vigorous and have some spines. Fruits ripen mid-season and are medium-sized and light red with good flavor. However, berries may be crumbly and fruit tends to ripen unevenly. This cultivar is partially resistant to common cane diseases and is hardy; recommended for colder climates.

Reveille: from Maryland.
Plants are vigorous and high yielding, producing many suckers. Fruits ripen early and are medium to large with good flavor, but very soft. Fruit has poor shipping and freezing quality and is recommended for pick-your-own markets. It is very hardy and recommended for colder climates.

Taylor: from New York.
Plants are vigorous with some spines and very susceptible to mosaic virus, leaf spot and fungal diseases. Fruit ripens late and is medium to large with excellent flavor, good color and firmness. It is moderately hardy.

Titan: from New York.
The plants produce large canes with very few spines. Suckers emerge mostly from the crown so it is slow to spread. Plants are susceptible to crown gall and Phytophthora root rot but are extremely productive. Fruits ripen mid to late season and are extremely large and dull red with mild flavor. Berries are difficult to pick unless fully ripe. With only fair hardiness, Titan is for moderate climates.

SUMMER PURPLE RASPBERRIES

Royalty: from New York.
This cultivar is considered the best purple raspberry. Canes are tall and vigorous with thorns and are extremely productive. Royalty is immune to the large raspberry aphid, which decreases the probability of mosaic virus infection, but is susceptible to crown gall. Fruits ripen late and are large and reddish-purple. Berries tend to be soft but sweet and flavorful when eaten fresh.

EVERBEARING RED RASPBERRIES

In describing everbearing red raspberries, the plant's degree of hardiness is not included. The recommended cultivation of primocane-fruiting raspberries involves cutting canes to the ground at the end of the growing season, so winter hardiness is not a factor. However since the primocane crop ripens in the fall, the length of the growing season is an important factor.

Heritage: from New York.
These tall, rugged canes have prominent thorns and are very high yielding. The primocane crop ripens relatively late. Fruit is medium sized and has good color and flavor, firmness and good freezing quality. Due to its late ripening, this cultivar is not recommended for regions with cool summers or a short growing season with frost before September 30.

Redwing: from Minnesota.
Canes are not vigorous and have moderate spines, but are moderately productive. The primocane crop ripens earlier than Heritage in some years and sites. Fruit is large and flavor is good, but fruits tend to be soft. It is suggested for trial in colder regions.

Ruby (NY 114) from New York.
Plants are moderately vigorous with good productivity. The ***(Heritage x Titan)***: primocane ripens slightly ahead of Heritage. The fruit is large, but flavor is mild. Ruby is susceptible to root rot. The cultivar is suggested for fresh market or shipping in areas with longer growing seasons.

BLACK RASPBERRIES

Black raspberries may winter kill to the snowline if temperatures drop to -5 degrees F in combination with dry winds. They are also quite susceptible to virus infections, Verticillium and rusts, and it is difficult to remove all viruses from the planting stock.

Allen: from New York.
Plants are vigorous and moderately high-yielding. Fruit ***(Bristol x Cumberland)*** ripens early to mid-season and very uniformly so the harvest period is short. Fruits are among the largest and most attractive of the black raspberries, but flavor is mild. Allen is a moderately hardy cultivar.

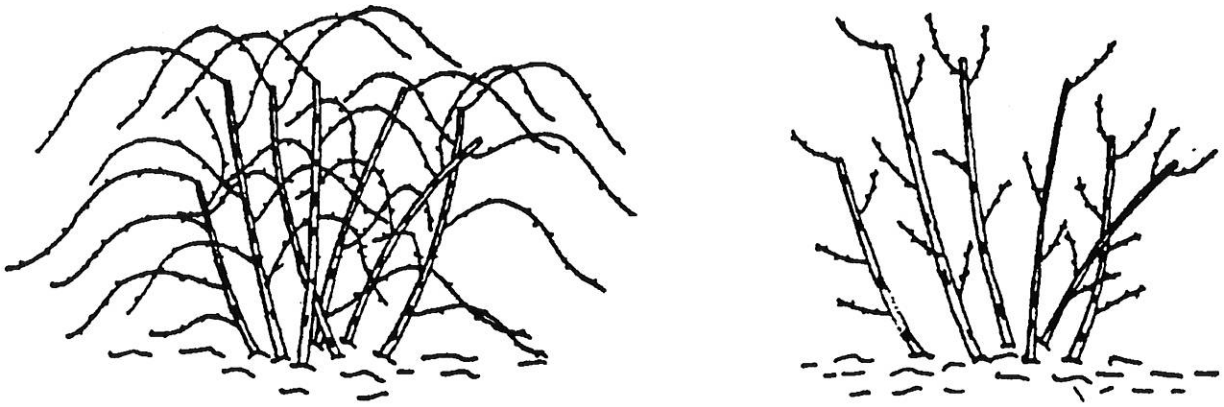
Bristol: from New York.
Plants are vigorous and high yielding. Fruit ripens early and is medium to large and firm with excellent flavor. Bristol is hardy but should not be grown north of Pennsylvania without testing on the site.

Jewel: from New York.
Plants are vigorous, erect and productive. This cultivar ***(Bristol x Dundee):*** appears to be more disease resistant than others. Ripening in mid-season, the fruit is firm, glossy and flavorful. This is a hardy black raspberry cultivar.

Pruning and Training

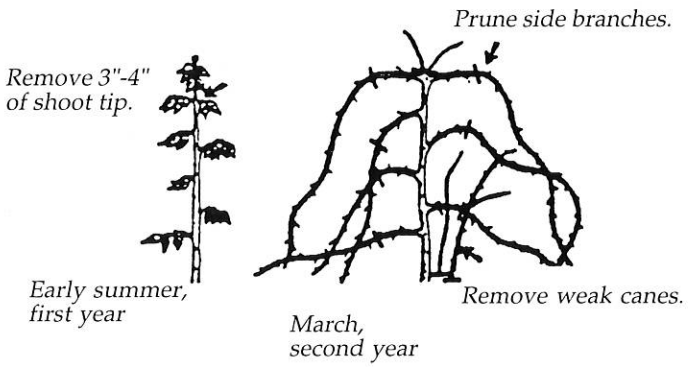
Raspberry canes are biennial, though their roots are perennial. The canes will die after 2 years of growth. There are 2 types of raspberries: the June bearing and the fall or everbearing type. Canes of the June bearing grow and set their flower buds in the early fall of the first year. The following summer, these buds produce fruit and the canes die. The fall bearing canes produce two crops. They grow in the spring and produce their first crop in the fall of the first year on the tip portion of the new canes. The lower portions of the cane then overwinter, bear the second crop the following summer, and then die.

To prevent overcrowding and a higher incidence of pest infestation, all weak and dead canes should be removed immediately after harvest or early the following spring. All spring pruning should be done after the danger of severe frost has passed but before the buds have begun to swell. If necessary to facilitate better management, up to 1/4 of the total length of each new cane may be removed. For best production, prune each cane to carry about 15 buds. Thin out weak canes (less than 3/8 inch in base diameter) and remove fruited canes if this was not done at harvest. Remaining canes should be thinned to stand about 6" to 8" apart (row system) or about 6 to 8 canes per hill. In the hill system, a sturdy 7' stake should be driven 2' to 3' into the ground about 1' from each hill early in the second year and the tops of the canes tied firmly to it after pruning.

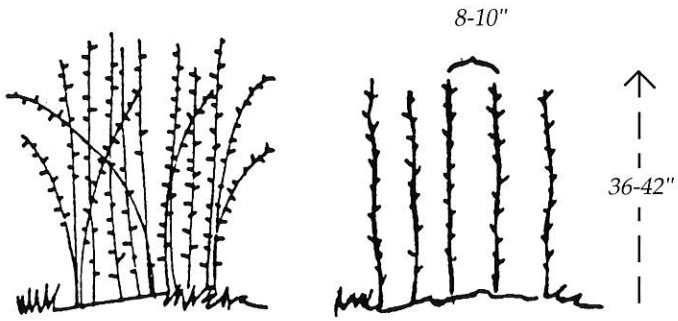


These black or purple raspberries have been planted and trained to the Hill system. At the left is an unpruned plant; the plant on the right is properly pruned. Each side branch is about 6" to 8" long.

This shows one shoot. There may be 7 or 8 vigorous shoots for each black or purple raspberry plant.

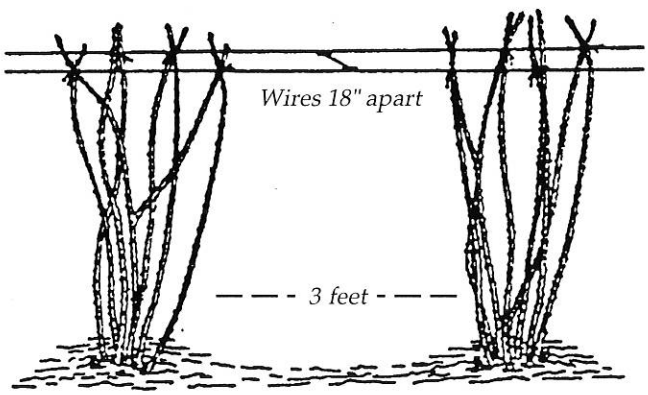


Black and purple raspberry shoots arise from the crown early in the growing season. Pinch off three to four inches of shoot tips in early summer when they reach the proper height. This causes side branches to develop, increasing the amount of fruiting area.



Hedge row pruning red raspberries, before and after.

These red raspberries have been planted and trained to the Hill system. Fruiting canes are tied to wires about 3' above the ground, 1 wire on each side of the row. Head the canes back to about 3 1/2' to bring the fruit within reach.



Integrated Pest Management (IPM) Considerations

IPM is a common sense approach to pest control and plant care. It employs a number of measures to prevent, control or reduce plant problems. These include using resistant plant varieties, proper plant selection and placement, good aftercare and biological and/or mechanical controls. As a last resort, after all other remedies have been explored, a pesticide* that is least toxic to people and natural predators, can be considered. Prior to using any pesticides, plants should always be monitored for the degree of infestation and a sensible control measure considered.

** A pesticide is a substance that kills, or attempts to kill, a particular pest, e.g. insecticide, fungicide, herbicide, etc.*

INSECTS

Raspberry cane borer	Causes early- to midsummer wilting of tips of new canes and laterals, which later blacken and drop off. Crush old cane stubs in early spring. As soon as wilted tips appear, cut them off several inches below the girdled portion, remove and destroy infected crowns, and eradicate wild brambles in the area. **(see note A.)**
Raspberry crown borer	Bores into and damages lower canes and crowns. Cane vigor is reduced, and canes often break off at ground level. The life cycle requires two years. In spring cut all weakened and infected canes close to the crown. In May or June break over and crush old stubs. Eradicate all wild brambles in the area. **(see note A.)**
Raspberry fruitworm	Adult is a small, 1/8 inch light brown beetle that begins feeding in May on buds and tender leaves and later on blossoms. Leaves appear ragged or torn. Larvae feed on fruit by lying on receptacle and burrowing through the berry. No cultural control exists. **(see note A.)**
Raspberry sawfly	Larvae feed on undersurfaces of leaves, causing round holes, and later devouring all but the large veins. Larvae mature quickly and then are gone. There is no cultural control. **(see note A.)**
Tarnished plant bug	Sucking injury by this pest results in deformed berries. Keep planting and surrounding areas free of weeds. **(see note A.)**
Sap beetle	Small (12 mm or less) elongate beetles that feed on overripe fruit. A common species, the picnic beetle, is dark with two yellow spots on each wing cover. Promptly harvest ripe berries. Remove and dispose of rotten or severely damaged fruit throughout the season. Do not leave overripe fruit in the garden because it attracts beetles. **(see note A.)**
Tree cricket	Injury is caused by egg-laying activities, sometimes girdling and causing the death of the cane-tip above egg insertion. Remove and destroy canes showing egg-laying scars. **(see note A.)**
Two-spotted spider mite	Feeding causes yellow stipple, bronzing, and possibly death of leaves. Mites feed on plant sap. Damage is more severe during drought. Insecticides may encourage the buildup of mites by killing predators. Wash off with water occasionally as needed. No miticides are currently labeled for use. **(see note A.)**
Japanese beetle	When insects first appear, if there are only a few, take them off by hand, put into a container with soapy water, and dispose of. **(see note A.)**

DISEASES

Cane Diseases *(anthracnose, cane blight, spur blight)*	Prune dead or diseased canes before new primocanes (first growth vegetative canes) emerge. Burn, bury or remove them from garden. Promote air circulation to increase drying of young primocanes: a) Regulate cane densities, b) Regulate row width, c) Use trellising systems. **(see note A.)** For cane blight, minimize cane injuries. Avoid summer tipping of canes if rain is expected within two to three days.
Gray mold	Promote air circulation to reduce humidity and improve drying within the fruiting zone. Use same techniques as for cane diseases.
Phytophthora root rot	Plant only on soils with good internal and surface drainage. Plant highly susceptible cultivars only on soils that have excellent drainage. If possible, establish new plantings from nursery material not previously exposed to garden or field soil (i.e. greenhouse-propagated plants). Avoid contaminating new planting sites with soil, water, or plants from sites in which the disease has occurred.
Leaf Spot	Promote air circulation to reduce humidity and improve drying of new leaves. Use same techniques as for cane diseases.
Viral diseases	Use only planting stock derived from virus-indexed sources. If possible, avoid establishing new plantings adjacent to wooded areas on older raspberry plantings. Eradicate wild brambles in nearby hedgerows. Control aphids that spread the disease.
Verticillium wilt	Avoid planting in locations where susceptible crops (such as potatoes or tomatoes) have been grown in past three years. Weeds such as lambsquarter and nightshade are also hosts for this disease and should be controlled.
Fruit Rots	Harvest regularly. Remove and dispose of rotten or severely-damaged fruit throughout the season. Prune in early spring to thin plants or plantings. Allow air to circulate and fruit and leaves to dry off quickly after rains. Eliminate weeds around the plants to improve air circulation. **(see note A.)**

Credit: • Miscellaneous Bulletin #74, **Guide To Pest Management Around The Home"**
• NRAES Bulletin #35, **"Bramble Production Guide"**

note A. Chemical pesticides are available. If you choose to use chemical pesticides, contact your local Cooperative Extension office for specific recommendations.

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