

Department of Horticulture

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Raspberries

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Growing raspberries is increasing in popularity. Well suited for hand picking, raspberries ripen soon after strawberries and just before blueberries. They yield a small crop of fruit the second year after planting and a full crop the third season. Plantings usually are productive for 5-8 years.

Cultivars

Red, black, purple, and yellow raspberries are all adapted to Indiana. The red raspberries are the most popular. Red raspberries occur as summer bearing and ever bearing, or primocane fruiting types. Primocane fruiting cultivars bear a crop in the summer on 2nd year canes (floricanes) like regular raspberries, and they also produce a crop in the late summer and fall on the 1st year canes (primocanes). Primocane fruiting cultivars are popular for home gardens because they produce fruit twice each year.

'Latham,' 'Canby,' and 'Nova' are good summer bearing cultivars, while 'Autumn Bliss' and 'Heritage' are among the best primocane fruiting types. 'Heritage' is widely adapted to sites across the region. 'Royalty' and 'Brandywine' are good purple cultivars. 'Brandywine,' with large, high quality fruit and heavy yields, may be the best. 'Estate' is a new purple berry that has promise for production in Indiana. 'Bristol' and 'Jewel' are currently recommended black raspberry cultivars for Indiana. 'MacBlack' is a new black raspberry that has promise.

Selection of virus-free planting stock is most important. Obtain new plants only from a reliable nursery, and request only certified virus-free stock. Raspberry plants should never be transplanted from an old patch since these plants are often virus-infected or have other disease problems.

Site

Air and soil drainage are important considerations in locating a raspberry planting. Frosts or late winter freezes are the most common cause of crop failure. While raspberries are fairly cold hardy, they often begin growth early in the spring, and are consequently subject to freezing temperatures and subsequent crop loss.

Locate plantings in an area with adequate air drainage so that cold air can move away from the area.

Soil drainage is important although raspberries require a good moisture supply. Soils from sandy loams to silt loams are satisfactory while both heavy clays and light sandy soils are undesirable. Heavy clay soils usually are poorly-drained, and sandy soils are usually droughty. Poor soil drainage often results in plant losses from root rot. A good supply of organic matter in the topsoil and a deep, well-drained subsoil are both highly desirable.

Raspberries should not be grown in an area in which tomatoes, potatoes, eggplant, peppers, or other crops susceptible to *Verticillium* wilt have been grown in the past 3-4 years. The fungus causing *Verticillium* wilt will remain in the soil several years, and severe loss of plants may result. Also, it is a good precaution to grow red raspberries 300 feet from black or purple cultivars to minimize virus spread. Use of virus-free stock will also minimize this problem.

Site Preparation

Thorough preparation of the planting site is essential to minimize weed problems and to increase the organic matter content of the soil. Serious weeds, such as quackgrass, must be eliminated prior to planting. Chemical weed control may be required. Sites on which sod has been freshly broken should not be planted because of insect and weed problems; the site should be worked for a season before planting.

Green manure crops such as rye add organic matter and help reduce weed infestations. As the soil is worked the last time before planting, add 10 pounds per 1000 square feet (450 lbs/A) of 12-12-12 or similar analysis fertilizer to aid in decomposition of the cover crop.

Planting

Set the plants as early in the spring as the soil can be prepared. Be sure to keep the plants moist both before

and during the planting operation. Dig the hole large enough to accommodate the root system without cramping. Set the plants at the same depth as they were when growing in the nursery and firm the soil around the roots.

The cane, or “handle”, on black and purple raspberries should be removed at the soil level after the plants are set. This reduces the possibility of disease carry-over from the nursery. The tops of red raspberries should be cut to 6-8 inches. When planting, do not allow the crowns of the plant to project above the soil surface as the new canes which grow from such an elevated crown tend to break off.

Planting Systems

First year cane growth is usually prostrate, so support may be desirable to improve growth and early yields. Subsequent growth is upright.

Narrow Hedgerow. Red raspberries should be set 2-1/2 to 3 feet apart. Purple and black raspberries should be spaced 3 to 4 feet apart. The final row width should be kept to 12 to 15 inches. A narrow row provides adequate sunlight for the inner branches; easy picking; and strong, sturdy canes. The distance between rows will vary according to the cultivation or mowing equipment used, but it is usually 6 to 12 feet.

Trellising or some system of support may be desirable where plants are vigorous. Support will permit taller plants which result in higher yields. Cleaner fruit and closer row spacing are other advantages of support systems.

Hill. This system is most suited to the black or purple raspberry that does not produce root suckers. Set the plants 3-4 feet apart and permit each plant to develop into a hill of 6 to 8 canes. Each hill should be supported by a stake. The distance between rows should accommodate cultivation equipment.

Fertilization

If no fertilizer was applied prior to soil preparation, sprinkle 2 ounces of fertilizer such as 12-12-12 or similar analysis around each plant 10 to 14 days after the plants are set. Keep the fertilizer 3 to 4 inches from the new shoots and canes.

During the succeeding years, apply 3 to 5 pounds of a complete analysis fertilizer such as 12-12-12 for each 100 feet of row (150-275 lbs/acre for 10-foot row spacing). Apply as a band on each side of the row in the early spring before growth begins. To reduce the possibility of winter injury to tender shoots, avoid late summer fertilizer applications. Adjust the amount of fertilizer applied depending on plant growth and yield.

Cultivation

Cultivate soon after the plants are set and, in established plantings, as early in the spring as the soil conditions permit. Cultivate no deeper than 2 to 3 inches. Continue cultivation up to the beginning of the harvest season and again after harvest. Avoid late summer cultivation since this delays the maturing of the canes, making them more susceptible to winter injury.

Keep the berry rows weed-free with mulches, hand-hoeing or suitable herbicides. A cover crop such as oats, rye, or rye-grass may be sown between the rows after the last cultivation. However, these must be turned under in the spring before they make excessive growth. Growers with large raspberry plantings may plant the row middles with bluegrass or other shallow-rooted grasses. The grass center strips should be regularly mowed through harvest time. Additional fertilizer may be needed because of the sod. The berries may also be used for border edgings in home plantings.

Mulching

Mulches reduce the number of cultivations, add organic matter to the soil, and aid in the conservation of available soil moisture. Straw, bark chips, or other organic material should be applied in a 3-inch layer over the bed area. Mulches usually should be replenished each year in the spring. Fall application of mulches may increase problems with rodents. Additional nitrogen may be required to assist in breakdown of organic mulches.

Irrigation

At least one inch of precipitation per week is desirable for the developing fruit crop and for plant growth. When natural rainfall is less than one inch in a week, supplement with irrigation. Supplemental watering during droughty periods during and after harvest is especially beneficial.

Pruning

All raspberries need regular pruning. The canes are biennial, which means that they grow one season, fruit the following summer, and then die. Proper pruning is carried out seasonally as outlined. Remember, thinning (spring pruning) is not the same as removal of fruiting wood (usually best done immediately after fruiting).

Red and Yellow Raspberries

Summer: After the harvest is completed, remove all old canes on which fruit was borne. The new canes that appear should not be summer pinched or tipped as is done with purple and black cultivars.

Spring: Before growth begins, remove weak, diseased, and insect-damaged canes. Thin the remaining canes so that strong, vigorous canes are left 6 to 8 inches apart. Maintain the row 12 to 15 inches wide at the base. Shorten canes so they are 4-1/2 to 5-1/2 feet tall. Following the harvest, remove the old canes as before.

Primocane Fruiting Red Raspberries

Practice the same summer removal of old canes as for regular red raspberries. The fall crop of primocane fruiting red raspberries is borne on the tips of new canes which grow that summer.

Spring: Before growth starts, thin out any small, weak, diseased, or insect-damaged canes. Remove the tips of canes where the fall crop was borne.

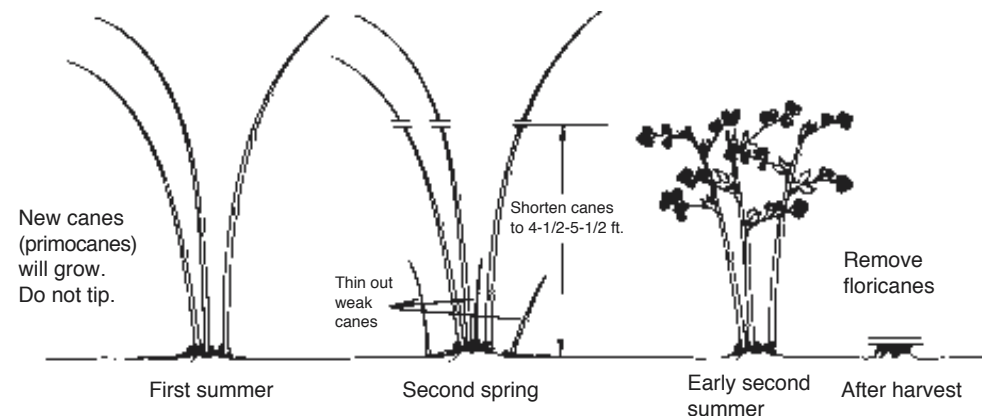
Summer: The summer crop is borne from lower buds of

the same canes that fruited the previous fall. After harvest, remove the floricanes on which the summer crop was borne. It is especially important to remove these canes immediately after harvest to allow more room for the developing primocanes on which the fall crop will be produced.

Note: Some growers sacrifice the summer crop to harvest only a fall crop and do away with the tedious spring pruning. For this method, simply cut or mow all the canes to ground level in the spring before growth starts. When new canes emerge, thin to correct spacing and keep the row 12 to 18 inches wide.

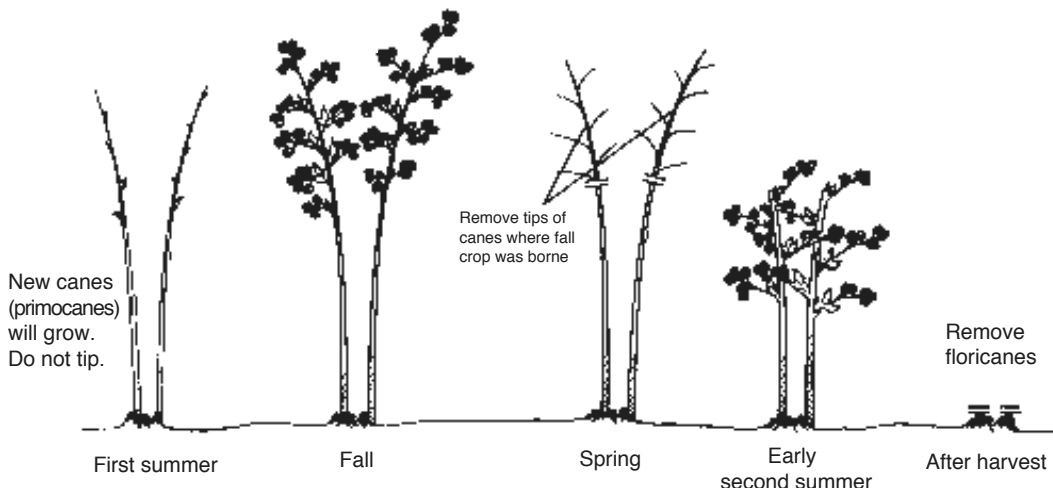
Black and Purple Raspberries

Summer: Tip the top 3 to 4 inches of new shoots (primocanes) during the summer. Pinch black raspberry cultivars to a height of 3 feet and purple cultivars to 3-1/2 feet. It is usually necessary to go over the planting several times during the summer. If a trellis or support is used, black or purple raspberries can be tipped 6 to 12 inches higher. Tipping promotes branching, which, in turn, increases the number of fruitful buds and will increase yield. After berries are harvested from the floricanes, remove those canes at soil level.



PRUNING RED AND YELLOW RASPBERRIES

Note: In an established planting, all stages of development (i.e., primocanes, floricanes, and stumps from old canes) may be present at the same time.

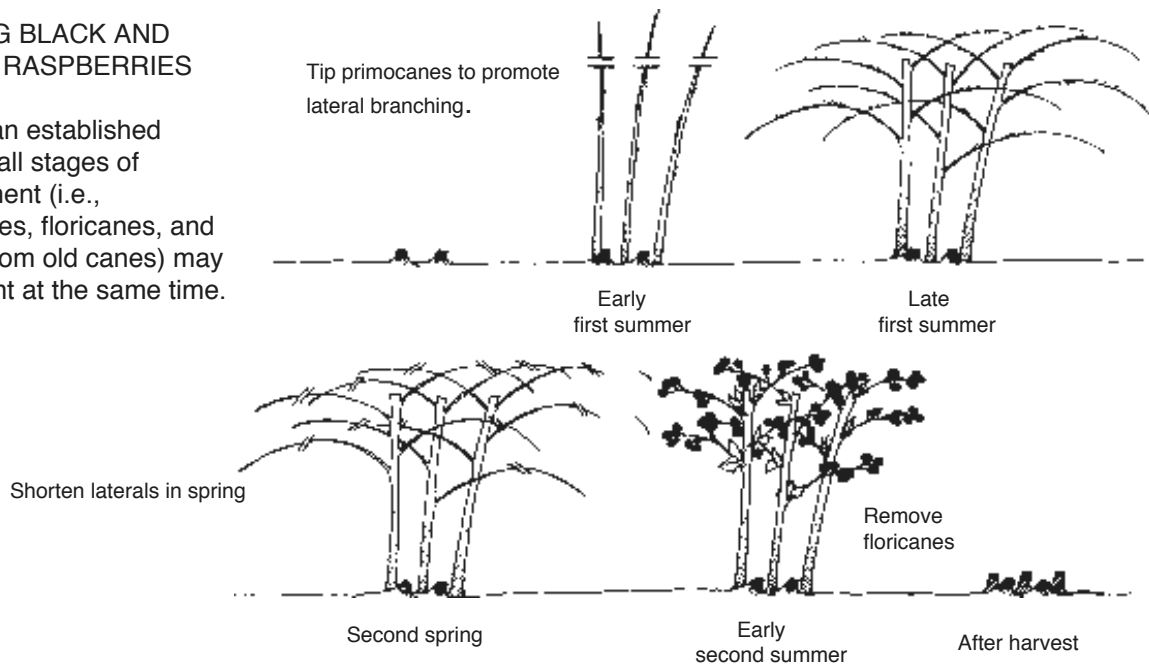


PRUNING EVERBEARING RED RASPBERRIES

Note: In an established planting, all stages of development (i.e., primocanes, floricanes, and stumps from old canes) may be present at the same time.

PRUNING BLACK AND PURPLE RASPBERRIES

Note: In an established planting, all stages of development (i.e., primocanes, floricanes, and stumps from old canes) may be present at the same time.



Spring: Before growth starts, remove all canes less than 1/2 inch in diameter. Most plants have four or five canes that are this large. However, if all canes are smaller than this, remove all but the two or three largest ones. Also remove diseased and insect-damaged canes.

Shorten the lateral or side branches to about 8 to 10 inches for black cultivars and to 12 to 14 inches for the purple cultivars. Cut unbranched canes to 2-1/2 to 3 feet.

Propagation

Red raspberries are propagated by the suckers that develop from the roots. These root divisions are separated by digging with a sharp spade and separating by hand.

Black and purple raspberries are propagated by tip layering. Usually by late August, the ends of the canes droop to the ground and root if buried in the moist soil. Cover the tips with 2 to 3 inches of soil to encourage good rooting. Cane tips can be inserted into slots made with a spade. The following spring, the rooted portion is severed from the mother plant and transplanted.

As previously cautioned, established raspberry plantings are often virus-infected. Conventional propagation from diseased plants will not eliminate the virus. To avoid yield loss and plant death from disease, fresh, virus-free stock should always be used in establishing new plantings.

Diseases and Insects

The three most common diseases of raspberries are mosaic virus, anthracnose, and verticillium wilt. To control virus, plant only virus-free stock and place red and black raspberries 300 feet apart if possible. Remove infected plants immediately. To control anthracnose, follow good sanitation practices and use a delayed-dormant spray of liquid lime sulfur. For control of verticillium wilt, avoid infected soils.

Insects are usually only a minor problem in raspberry culture. The raspberry cane borer makes 2 rows of punctures about 6 inches below the tips of new canes causing the tips to wilt. Control involves removal and disposal of wilted tips below the girdled area. Occasionally, the raspberry fruit worm is a nuisance, but it can be controlled by regular spraying. Sap beetles and picnic beetles can be a problem when fruit is allowed to become overripe. Japanese beetles will also attack soft and overripe fruit. Harvest regularly and completely to minimize damage.

Herbicides

No chemical herbicides are generally recommended for use in the home raspberry planting. Consult ID-146 Managing Pests in the Home Fruit Planting. Commercial growers should consult ID-169 Commercial Small Fruit and Grape Spray Guide for information on suitable herbicide materials.

For more information on the subject discussed in this publication, consult your local office of the Purdue University Cooperative Extension Service.