

# Raspberries for the Home Garden

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Raspberries are one of the most delicate and delicious small fruits grown in New Mexico. Although red raspberries prefer cooler areas, everbearing varieties have successfully produced fall crops in warmer areas. Black raspberries (blackcaps) prefer moderate winters and may need to be protected in colder areas of the state.

## Types of Raspberries

The raspberry is an aggregate fruit composed of 75 to 125 drupelets. The fruit differ from the blackberry in that the core of the raspberry fruit remains on the plant when picked, while the blackberry core becomes part of the edible fruit when harvested.

Raspberries may be classified by color and/or fruiting habit. Raspberries may be red, black, purple, or yellow in color. Red raspberries tend to be more cold hardy than black raspberries; have larger berries and more erect canes; and sucker prolifically. Black raspberries are less cold hardy; have smaller, seedier and more aromatic berries and arching canes; and tend to form clumps of canes. Purple raspberries are hybrids of red and black raspberries and tend to respond in growth habit similar to a black raspberry, although canes may be more vigorous with larger berries. Most yellow raspberries are similar to red raspberries in growth habit.

Red raspberries may also be classified as “standard” (traditional, summer-bearing) or “everbearing” (fall-bearing) in fruiting habit. Standard varieties produce biennial canes on perennial root systems. Canes produced by standard raspberries in the first growing season will produce fruit during the following summer. The canes will then die back to ground level during the winter. Dead canes must be removed selectively to leave more space for one year old canes that will produce fruit the next summer. Standard raspberry canes must also be trained to a trellis or supported in some manner.

Fruiting canes of standard raspberry varieties tend to

break dormancy early in the spring and may be damaged by late spring freezes. Fruit produced on such canes in the summer will often shrivel and die. Standard varieties may need to be protected with straw in the early spring or planted on the north side of a house to keep plants dormant longer in the spring. Partial shade during the summer in hotter areas of the state will help reduce sunburn on the berries and increase sweetness.

Everbearing red raspberries differ from standard red raspberries in that they send up new canes during the spring and summer and produce berries during the fall of the same year. After frost, all canes can be pruned back 1–2 inches from ground level. New canes will emerge the following spring, eliminating the problem of freeze damage on overwintering canes that occurs with standard raspberry varieties. Berries produced on everbearing varieties in the fall are free of sunburn and are sweeter and redder than berries produced in the summer on standard varieties. Canes of everbearing raspberry varieties do not have to be trained to a trellis like standard varieties.

## Soil Preparation

Raspberries grow best in a loam or sandy loam soil with a pH of 6.5–7.5. Adding ample quantities of compost and peat moss will help buffer alkalinity, increase the water-holding capacity of the soil, and improve soil aeration. Turn the soil over to a depth of two or more feet for good drainage.

## Plant Establishment

Raspberries are normally propagated from dormant, bareroot plants (suckers). Certified, virus-free planting stock is recommended to minimize the introduction of disease and insect pests.

Plant dormant plants in the early spring before new growth begins. Upon receipt, soak plants in water with a root stimulator for 15 minutes to improve survival.

Raspberries are normally planted in rows and trained to form a hedge. Dig planting holes with a shovel, spreading raspberry roots evenly throughout the hole. Cover the roots with soil: be sure to firm the soil around plants for good contact between soil and roots. Water plants immediately after planting. Row width, plant spacing (in row), depth of planting, and clipping height (height of canes left in garden after planting) usually depend on the type of raspberry planted (table 1).

Plants that do not survive the first year can be replaced with new bareroot plants the following spring. Holes in a red raspberry hedgerow can also be filled in using rooted suckers for transplants from areas between rows during the early fall or spring. In both cases, a soil ball should accompany the roots to minimize transplant shock to the sucker. If transplanted in the fall, suckers should be cut back to balance root and cane growth.

Because black raspberries don't sucker as prolifically as red raspberries, they are usually propagated using a technique called "tip layering." Tips of new black raspberry canes produced in the summer can be buried in the soil (3–5 inches deep) in the fall. Firm soil around the tips and water. Rooted tips can be severed from the mother canes (leave 4–6 inches of the original cane with the roots) the following spring and transplanted to their new locations.

### Fertilizer

Preplant phosphorous fertilizer should be broadcast and rototilled into the centers of potential hedgerows at a rate of 0.1–0.2 pounds of  $P_2O_5$  (0.2–0.4 pounds of 0-46-0) per 100 square feet. Compost incorporated during soil preparation should contain enough organic nitrogen to get new plants off to a good start. Apply potassium only if a soil analysis indicates a potassium deficiency.

Apply nitrogen fertilizer at a rate of 0.05 pounds of elemental nitrogen (0.24 pounds 21-0-0) per 100 square feet 4–6 weeks after planting as a side dressing (6–8 inches away from plants, incorporated). Apply nitrogen in following years at rates of 0.1–0.23 pounds elemental nitrogen (0.45–1.1 pounds 21-0-0) per 100 square feet. All nitrogen should be applied in split applications (broadcast or side dressing)—half in late March and half in early May.

Apply phosphorous to establish planting in the spring

**Table 1. Row width, planting spacing, depth of planting and clipping height for new raspberry plants.**

Raspberry Type	Row Width	Plant Spacing	Planting Depth	Clipping Height
	Feet	Feet	Inches	Inches
Red	6–8	2–2 1/2	1–2	2–4
Black	8–10	3–4	0	0

Depth planted below soil surface as compared to its original depth when grown in the nursery. A change in coloration on cane will indicate soil line from nursery.

at a rate of 0.1–0.2 lb of  $P_2O_5$  per 100 square feet. As phosphorous does not move down through the soil profile with irrigation water, it should be incorporated as a banded application off to the side of the hedge (4–6 inches from hedgeline) 4–6 inches deep. Phosphorous can also be applied using a garden fork to punch holes in the soil between canes. Pour the fertilizer into the holes.

Plants that show symptoms of iron or zinc chlorosis should be treated with foliar applications of iron or zinc sulfate. Plants can also be treated with foliar or soil applications of iron or zinc chelates. Only chelated materials should be used for soil applications. Foliar applications of these materials should NOT be applied during flowering because flowers may be burned. Follow label rates for best results.

### Watering

Raspberries should never be stressed for moisture as irrigation is particularly critical during bloom and when the berries are sizing. Although sprinklers or furrow irrigation techniques can be used, drip irrigation tends to be more efficient. Because water is generally confined to the root area, weeds are not as prolific in the alleys. Using organic mulches will also help conserve moisture. Organic mulches also tend to cool the soil, as well as reduce soil crusting and weed competition.

### Pruning and Training

Everbearing raspberries tend to be more erect than standard raspberries and rarely need to be trained to a trellis. As berries are produced in the fall on terminal ends of canes produced in the summer of the same year, all canes can be pruned 2–4 inches from the soil level any time during the winter. No selective pruning is

necessary.

Standard raspberries may require some support. Stretching a wire on both sides of the hedge about 3 feet above the ground will confine canes to the hedge. Place wood or metal posts with supporting crossbars for the wires strategically in the hedge to keep the wires taut. Canes may be attached to the wires with twine.

Canes of standard raspberries can be cut off at ground level after they have fruited in the summer or during the following winter. During the early spring, weaker and smaller canes can also be removed, leaving stronger fruiting canes 6 inches apart in the hedge-row. Winter-damaged canes can also be removed. Do not top red raspberries during the summer. Hedges of both standard and everbearing types of raspberries should be no wider than 2–3 inches as wider hedges result in smaller berries and are harder to pick.

Top black and purple raspberries during the summer to encourage the development of lateral branches and to increase cane strength. Canes should be topped when they reach a height of 24–36 inches by removing 3–4 inches of growth.

All dead, damaged, or weak black raspberry canes should be removed at ground level during the dormant season. Lateral branches should also be headed back at this time (4–8 inches).

### Harvest

Raspberries can be picked every 2–3 days when fruit are well colored and can be pulled off the receptacle or plug quite easily. Collect fruit in a shallow tray to prevent damage. To extend the shelf life of the berries, pick when dry and refrigerate immediately.

### Diseases

Raspberries are susceptible to numerous virus diseases. Once they are infected, plants can't be cured. Viruses are commonly spread by aphids, nematodes or infected pollen. To prevent the spread of viruses, destroy all infected plants.

Verticillium wilt is a soil-borne fungus that can be a problem in some areas of New Mexico. When a plant is infected, its leaves turn yellow and eventually die. Canes often turn blue as the disease proceeds up the canes, while vascular tissues generally exhibit

red discolorations.

The most effective way to control viruses and Verticillium wilt is to plant certified virus- and Verticillium wilt-free planting stock. Soils should also be free of Verticillium wilt. Raspberries should not be planted in soils that have been planted to potatoes, tomatoes, peppers, eggplant, strawberries, or other cane berries that have been previously infected with wilt.

Test the soil for nematodes before planting. The root lesion, rootknot, and dagger nematodes will cause weak cane growth and small leaves, and will reduce fruit size. Foliage may also turn yellow and drop in hot weather.

### Insects

Few insect pests have been noted on raspberries in New Mexico, but stinkbugs have been noted in some areas of the state. Gardeners should keep a watch on their raspberries for insect damage. Report new insect infestations to your local county Extension agent for identification and suggested control techniques.

### Varieties

Everbearing raspberry varieties have proved to be the most successful raspberries grown in New Mexico. Because the canes can be damaged by frost in the spring, standard red and black raspberry varieties have only a limited place in the home garden.

#### Everbearing Red Raspberries

'Heritage'—Canes very vigorous, hardy, erect, sturdy; sucker prolifically; medium-sized berry with conic shape, firm flesh, good flavor, and excellent quality; rated number one everbearing red raspberry in nation.

'Redwing'—Canes vigorous, moderately dense, green with light red overlay; berries slightly larger than 'Heritage' at beginning of season but somewhat softer; more heat resistant than 'Heritage' and earlier.

'Autumn Bliss'—Canes moderately numerous, fairly erect, green with pink tinge; berries larger, slightly firm

and better tasting than 'Heritage'; earlier ripening.

### **Standard Red Raspberries**

'Boyne'—Canes vigorous, erect, sturdy, and very hardy; berries medium-sized, deep red, tender, juicy, aromatic, and medium sweet; good for processing and freezing.

'Nordic'—Canes are less thorny than canes of 'Boyne' and are very hardy; produces fruit both in the summer (last year's canes) and in the fall (this year's canes); fruit similar to 'Boyne' but lighter color with superior firmness, skin strength, and flavor.

'Killarney'—Medium-sized hardy canes; deep red, firm, sweet fruit with excellent quality; slightly larger than 'Boyne', ripens 4–5 days later.

### **Black Raspberries**

'Black Hawk'—Plants vigorous, resistant to anthracnose and hardy; fruit medium to large, firm, nearly round, and of good quality and flavor.

'Cumberland'—Canes with many stickers and susceptible to anthracnose; berries large, firm, high quality, and good flavor.

'Jewel'—Canes vigorous, erect, consistently productive; berries large, glossy skin, firm, superior quality and flavor; resistant to anthracnose.

### **Purple Raspberries**

'Royalty'—Vigorous canes; large-fruited, sweet berry can be picked in full red to purple stage; very productive.