



# Raspberry Variety Review

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Raspberry varieties are classified as floricane (summer) or primocane (fall) bearing. (A few primocane bearing types are described as everbearing, which produce a small to intermediate fall crop and can be managed in a double cropping system.) Raspberries are naturally biennial with a perennial crown. Primocanes grow the first year, go dormant in fall, get chilled in winter, and fruit the following summer (the primocanes are now called floricanes, which die after fruiting). New primocanes are growing as the floricanes fruit. Floricane varieties must be pruned in the spring to thin the fruiting canes and remove dead canes for better disease management and fruit size. There are red (*Rubus idaeus*), black (*Rubus occidentalis*), and purple (red x black hybrid) raspberry varieties suitable for production in temperate states.

Primocane varieties fruit on the first year's growth in the fall of the year. Currently, only red varieties (and some a few yellow) are available of this type although developments in black and purple raspberries include primocane fruiting. The strength of fruiting in primocane types varies widely from tips only on some floricane varieties to nearly the whole cane in varieties such as 'Autumn Britten' and 'Himbo Top'. Later primocane varieties such as 'Ruby' and 'Heritage' can have yield reductions from early frosts in more northern growing regions. Pruning in primocane varieties is done by mowing spent canes to the ground before primocanes emerge in early spring.

Currently available black and purple raspberry varieties are floricane bearing with most developed in New York or derived from germplasm from the region.

New raspberry varieties are actively being developed in about 11 public breeding programs around the world with the majority suitable for production in the temperate regions of the U.S. coming from Cornell University ('Heritage', 'Encore', 'Prelude', 'Titan', 'Ruby', 'Taylor'), University of Maryland ('Caroline', 'Anne', 'Jaclyn') and Ag Canada in Nova Scotia ('Nova', K81-6). Increasingly, new varieties from European programs are being introduced in to the U.S. ('Autumn Bliss', 'Autumn Britten', 'Polana', 'Polka', 'Himbo Top' and others). No variety will work well in all locations, soil types, and production systems, but many have proven to be useful in many different situations. By planting a series of varieties, it is now possible to have fruit from mid to late June until fall frost (or longer with protection) in much of the temperate U.S. with only a short late-summer lag in production. Cornell's newest variety, 'Crimson Giant', released in 2011, extends the season in the fall to the end of October and beyond with large, high quality, bright red fruit.

## **PRIMOCANE RED RASPBERRIES**

**Autumn Bliss** (Great Britain, Plant Patent #6597) is an early ripening raspberry with large, highly flavored fruit. It ripens 10 to 14 days before Heritage. Much of the crop is produced within the first two weeks of harvest, which is an advantage in northern climates. It produces short canes with few spines. The fruit is dark red and darkens with storage and is fairly soft. It is susceptible to raspberry bushy dwarf virus.

**Autumn Britten** (Great Britain) is early ripening with large, firm, good flavored fruit. The fruit tends to be dark and darken in storage. It is taller than 'Autumn Bliss' with better fruit quality but lower yields. It produces sparse cane numbers.

**Caroline** (University of Maryland, Plant patent #10,412) is a large, good flavored, conical fruit. The fruit will darken with storage. It produces tall upright canes. The short fruiting laterals can be challenging to pick, but yields are very good for the fall. It has moderate to good resistance to Phytophthora root rot.

**Crimson Giant** (Cornell University-NYSAES, Plant patent applied for) is the latest release from the Cornell program and has large, bright red fruit with a conical shape. The berries are firm and flavorful. It ripens after 'Heritage' and extends the season until late October or later with high tunnels. There is a significant risk to the crop from early frost with outdoor production.

**Heritage** (Cornell University-NYSAES) is considered the standard for fall bearing varieties. These tall, rugged canes have prominent thorns and can be very high yielding if the complete crop can be harvested. The primocane crop ripens relatively late. Fruit is medium-sized and has good color and flavor, firmness, and good freezing quality. It is resistant to most diseases. Due to its late ripening, this variety is not recommended for regions with cool summers or a short growing season with frost before September 30 unless high tunnels or other cold protection is used.

**Himbo Top™** (variety 'Rafzaqu') (Switzerland) produces good quality, large fruit. The fruit is bright red with good flavor. Plants are vigorous and upright and medium in height with very long fruiting laterals that require trellising. Sucker production is somewhat sparse leading to moderate yields.

**Jaclyn** (University of Maryland, Plant Patent #15647) is an early season variety with large firm berries ripening 2 weeks before Heritage. The fruit is dark red with superior flavor and will darken with storage. The fruit is very long conical and adheres tightly until fully ripe. Plants are vigorous and erect but susceptible to yellow leaf rust. Potato leaf hoppers show a strong preference for this variety and can cause significant damage.

**Joan J** (Great Britain) is an early season variety with very firm fruit with a thick texture. The fruit is conic and dark red and will darken with storage. The canes are vigorous, upright and spineless making picking easy. Yield and fruit size is very good. The fruit skin is thin and can be damaged easily, especially in high temperatures.

**Josephine** (University of Maryland, Plant Patent #12,173) fruit is large with very good flavor ripening in the late season. Berries are firm and cohesive. The color is dark red. Plants are upright and vigorous needing little containment trellising. It is resistant to leaf hopper and Phytophthora root rot. This variety will extend the season in a high tunnel system.

**Polka** (Poland) has medium large primocane fruit that ripen in the mid-fall season. The fruit is somewhat soft with good quality and a shiny red appearance. It is a vigorous variety with good sucker production. Potato leaf hoppers so a strong preference for this variety and can cause significant damage.

### **PRIMOCANE YELLOW RASPBERRIES**

**Anne** (University of Maryland, Plant patent #10,411) produces large, conic, pale yellow fruit that ripen mid- to late season. It has very good flavor and texture. Tall upright canes sucker sparsely requiring higher planting density. It is resistant to Phytophthora root rot but susceptible to leaf hoppers and rust.

**Kiwigold** (New Zealand, Plant patent #11,313) and **Goldie** (cv. Graton Gold) (California, Plant Patent #7,625) are amber sports of Heritage, similar in all characteristics except fruit color. Fruit blushes pink when overripe with Goldie slightly darker. The fruit is medium-sized and has good flavor and firmness and ripens relatively late. They are resistant to most diseases.

### **FLORICANE RED RASPBERRIES**

#### ***Early Season***

**Boyne** and **Killarney** (sibling varieties from Manitoba) perform very similarly. Both have are early season with small to medium sized fruit with good eating and freezing quality but can be somewhat dark and soft. The plants are spiny and produce many suckers. They have excellent winter hardiness but are susceptible to anthracnose. Boyne is moderately resistant to late yellow rust and tolerant to Phytophthora root rot and crown gall, but is susceptible to raspberry fireblight. Killarney is moderately resistant to Phytophthora root rot and is susceptible to mildew.

**Prelude** (Cornell University-NYSAES, Plant Patent #11,747) is the earliest summer fruiting variety available. The fruit is medium sized, round, and firm with good flavor. It is very resistant to Phytophthora root rot and has good cold hardiness. A moderate fall crop is large enough to warrant double cropping. It is the best early season variety available for the northeast.

#### ***Mid Season***

**Canby** (Oregon) canes are tall, nearly spineless, and moderately productive. The fruit ripens mid-season, is medium to large in size, firm, and bright red with excellent flavor. It has moderate to poor cold hardiness, and buds may winter kill in cold climates. It is susceptible to Phytophthora root rot. It is also susceptible to powdery mildew making it unsuitable for tunnel production.

**Moutere** (New Zealand) is large fruited variety with very firm fruit. The canes are vigorous and tend to weep with the heavy fruit load. The fruit is light red with a waxy, dull appearance. The yields are very high but the flavor is poor. Hardiness in NY has been good.

**Nova** (Nova Scotia) is vigorous and upright with long, fruiting laterals. The canes have very few spines. The fruit ripens in mid-season and is medium sized, bright red, firm, and somewhat acidic in taste. It is considered to have better than average shelf life. The plants are very hardy and appear to resist most common cane diseases, including rust. It will set a late fall crop.

**Titan** (Cornell University-NYSAES, Plant patent # 5404) produces large canes with very few spines with suckers that emerge mostly from the crown, so it is slow to spread. It is susceptible to crown gall and Phytophthora root rot but is 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. It is resistant to the raspberry aphid vector of mosaic virus complex.

### ***Late Season***

**Encore** (Cornell University-NYSAES, Plant patent # 11,746) is one of the latest summer fruiting raspberry varieties available. It produces large, firm, slightly conical berries with very good, sweet flavor. The fruit quality is considered very good. It is moderately susceptible to Phytophthora root rot and has good cold hardiness.

**K81-6** (Nova Scotia) produces canes that are medium tall with spines only at the base. The fruit is very large with good flavor that ripens very late summer with average firmness. It is resistant to late yellow rust but is susceptible to leaf curl virus and raspberry fire blight. It has shown good cold hardiness in NY trials.

**Octavia** (Great Britain) is a new late season variety that promises to close the summer gap before primocane varieties begin. The fruit is large and generally round shaped and light red. The flavor is poor to average with adequate sun. The canes are semi-spineless with good resistance to aphids and cane botrytis. It is susceptible to spur blight, raspberry bushy dwarf virus and Phytophthora root rot.

### **FLORICANE BLACK RASPBERRIES**

**Black Hawk** (Iowa State University) fruit is small and glossy with good firmness. Plants are vigorous, similar to wild types. The canes are relatively hardy, and resistant to anthracnose. Yields are moderate. This variety is generally falling out of favor due to its small fruit and wild growth habit.

**Bristol** (Cornell University-NYSAES) fruit is medium to large and firm, with excellent flavor. Plants are vigorous, high yielding for black raspberry and hardy. It is susceptible to anthracnose and tolerant to powdery mildew.

**Haut** (USDA-ARS, Maryland) fruit is large sized but soft. The dark shiny black color makes them very attractive. It ripens over a long period producing good yields. The plants are vigorous and upright with good productivity.

**Jewel** (Cornell University-NYSAES) fruit is large, firm, glossy, and flavorful. Plants are vigorous, erect, hardy, and productive. This variety appears to be more disease resistant than others including resistance to anthracnose.

**Mac Black** (Michigan) ripens medium large berries 7-10 days later than most varieties. The fruit is large, moderately firm and flavorful. The canes are vigorous, erect, and hardy.

## **FLORICANE PURPLE RASPBERRIES**

**Brandywine** (Cornell University-NYSAES) ripens later than most red varieties and are large, reddish-purple, and quite tart. Berries are best used for processing. This is a high yielding variety. Canes are very tall with prominent thorns, and suckers grow only from the crown so the plant will not spread. It is susceptible to crown gall but partially resistant to many other diseases.

**Royalty** (Cornell University-NYSAES, Plant patent # 5405) is the most widely planted purple variety. Fruit ripen late and are large and reddish-purple to dull purple when fully ripe. Berries tend to be soft but sweet and flavorful when eaten fresh. It is excellent for processing and can be harvested when fruit is red for fresh eating. 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.

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