

BLACKBERRY



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INDEX

1. Blackberry: An Introduction	1
2. Taxonomy	1
3. Popular Species	1
4. Plant Description	2
5. Blackberry Cultivars	2
6. Growing Blackberry	3
7. Nutrition in Blackberry	4
8. Food Uses	4



Blackberry: An Introduction

Blackberry plants are grown for their nutritious, delicious fruits. Blackberry is considered as one of the most nutrient-dense fruits. It is counted among top 50 nutrient-rich, plant-based foods. Blackberry fruits are commonly known as ‘bramble fruit’. Blackberry is believed to be a native of Europe, Africa, Asia and America. European blackberry is originated in Europe while American blackberry is originated in Americas; Himalayan blackberry is native to Asia. Mexico and the USA are among the leading producers of blackberries. Blackberry plants can thrive well even in very poor soils and the plants need very little care to flourish. In some parts of the world, blackberry plants are considered as invasive.

Taxonomy

Kingdom	Plantae
Order	Rosales
Family	Rosaceae
Genus	Rubus
Species	Ursinus/fruticosus/laciniatus/armeniacus

Popular Species

1. Rubus ursinus: American/Californian Blackberry
2. Rubus fruticosus – European Blackberry
3. Rubus laciniatus—Evergreen blackberry
4. Rubus armeniacus—Himalayan blackberry



Plant Description

Blackberry plants are perennials. During first year of vegetative growth, a new stem, called primocane, emerges and grow to a length of 6-9m. During second year, flower stalk, called florican, emerges and produces flowers during spring-summer season. Flowers are large with a diameter up to 3cm and either white or pink coloured with five petals.

Shoots and stems that appear during first and second year of vegetative growth have prickles. Now there are many prickle-free varieties available. Leaves of blackberry plants are large, palmately compound with five or seven leaflets. Blackberry is a cross-pollinated crop; pollination is done by honey bees. Presence of a healthy bee population in blackberry orchards is critical for the production of quality fruits.

Botanically, blackberry is an aggregate fruit, composed of small drupelets. Rich dark colour of the fruits is due to the presence of anthocyanins. Blackberry seeds contain healthy omega-3 (alpha-linolenic acid) and omega-6 (linoleic acid) fatty acids.

Blackberry Cultivars

There are mainly five types of blackberry varieties/cultivars. These are trailing, prickly types, thorn less/prickle-free types, erect types, Primocane types, and Illini Hardy types.

Major traits of trailing types of blackberry plants are that they are vigorous-growing, crown forming plants. Stems of these plants are trailing type that often needs support to grow. Training these plants on trellises or any similar support structures may help healthy growth and fruit production of the plants. They are less cold hardy than the erect or semi-erect types and are adapted to growing in a wide range of climates including the Mediterranean climate. Some of the popular trailing cultivars are Marion, Chehalem, and Olallie.

Prickle-free types of blackberry plants are semi-erect and their stems and shoots are prickle-free. These plants are also vigorous-growing and crown-forming. These plants will grow and flourish well if trained on trellises or similar support structures. Some of the popular prickle-free cultivars are Black Diamond, Black Pearl, Nightfall, Obsidian, Metolius, Black Satin, Chester Thornless, Dirksen Thornless, Hull Thornless, Merton Thornless, Smoothstem, Triple Crown, and Cacanska Bestrna (also called 'Cacak Thornless').

Black Diamond is a leading cultivar grown in the Pacific Northwest while Black Pearl and Nightfall are popular Prickle-Free cultivars in the USA. Obsidian and Metolius are early-ripening, prickle-free cultivars.

Erect types of blackberry plants are less vigorous-growing than the semi-erect and trailing types. They produce new canes from root initials and spread underground like raspberries. Both prickly and prickle-free erect cultivars are available now. Popular erect cultivars are Navaho, Ouachita, Cherokee, Apache, Arapaho, and Kiowa.

Primocane types of plants are erect growing. Popular cultivars are Prime-Jan and Prime-Jim. Illini Hardy types are semi-erect, prickly, and winter hardy.

Growing Blackberry

Climate and Soil: Blackberry plant is a hardy plant and it can be grown in all types of climate. The plants are sun-loving and prefer at least 8 hours of daily sunlight. Well-drained fertile and rich sandy loamy soils are suitable for raising commercial crops. However, the plant thrives well even in poor soils.

Propagation: Propagation by leafy stem cuttings and root cuttings are practiced widely. In case of cuttings, rooting may be induced with the treatment of growth hormones.

Planting and Training: Rooted cuttings are planted in the well-prepared fields during spring or early summer. Spacing of cuttings varies with cultivars. For trailing types, large spacing of about 8 feet x 8 feet is recommended. For other types, 5 feet x 5 feet or lesser spacing may be followed. Training is essential for trailing and semi-erect types of plants. Trellises or any other support structures may be used for training the plants. It takes two years to produce fruits; during first year, the plants produce vegetative canes and during the second year, they produce flowering stalks. A well-established blackberry plantation may remain productive up to 15 years.

Fertilizers and Irrigation Requirements: At the time of land preparation, 20-25 tons of farmyard manure/compost may be mixed with the top soil per one hectare area. Application of 10-10-10 nitrogen fertilizer is recommended during active vegetative growth phase. Frequent irrigations at critical growth stages are essential.

Pest-Disease Management: Major disease that affects blackberry plants is a fungal disease called anthracnose. It causes uneven ripening of fruits; application of Bordeaux mixture may control the disease up to some extent. Major insects are drosophila flies and blackberry aphids. Drosophila flies (*Drosophila suzukii*) attack fresh, ripe fruits, lays eggs under the fruit skin and the larvae that hatch infest the whole fruit. Blackberry aphids (*Amphorophora rubi*) infest and eat the whole fruits. Apart from these, raspberry beetles, moths and strawberry weevils also attack blackberry plants. IPM or integrated pest management may be adopted for total control of insect-pests.

Harvesting and Yield: It takes about 30 days from pollination of flowers to fruit maturity. Harvesting is done when the fruits are ripe and gain dark colour. Yield is about 9-10 tons/acre.

Nutrition in Blackberries

Blackberries are rich in dietary fiber (both soluble and insoluble fibers), vitamin C, and vitamin K. A 100 gram edible portion of raw blackberries provides 43 kilocalories of energy and 5 grams of dietary fiber. Blackberries are rich source of a number of vitamins and minerals. A detailed account of nutrients present in blackberries is given below:

Nutrient	Unit	Value/100 g
Protein	g	1.39
Fiber	g	5.3
Calcium	mg	29
Iron	mg	0.62
Potassium	mg	162
Zinc	mg	0.53
Vitamin C	mg	21
Thiamin	mg	0.02
Riboflavin	mg	0.026
Niacin	mg	0.646
Vitamin B-6	mg	0.03
Folate	µg	25
Vitamin A	IU	214
Vitamin E	mg	1.17
Vitamin K	µg	19.8

Food Uses: Blackberries are, most often, consumed fresh and raw. Desserts, jams, jelly, and wine may be prepared from blackberry fruits. It is also used as an ingredient in making pies. Blackberry candies are quite popular among all kinds of people.

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