

**Syzygium cumini (L.) Skeels**

Syn. *Eugenia cumini* (L.) Druce

*Eugenia jambolana* Lam.

*Syzygium jambolanum* DC.

**Family:** Myrtaceae

San: Jambu, Kan: Jambu nerale, Tel: Neredu, Tam:Nagai, Mal:Ramajambuk

The Jamun tree represents 'Rohini nakshatra'. According to Hindu tradition, Rama subsisted on the fruit in the forest for 14 years during his exile from Ayodhya. Because of this, many Hindus regard *S. cumini* as a 'fruit of the gods,' especially in Gujrat, where it is known locally as jamboon. Lord Krishna has been described as having skin the color of *S. cumini*. In Hindu mythology several protagonists have been described as having the color of *S. Cumini*.

The fruit of this could play an important role in meeting demand for nutritious, pleasantly flavoured and attractive natural food of high therapeutic value. Fruits are generally round in shape, deep purple or bluish in colour, having juicy, sweet pulp and a small stone.

**Other varieties of Jamun are:**

*Syzygium caryophyllum* - Kuntanera

*Syzygium Jambos* - Pannera

*Syzygium hemisphericum* – Bananera

*Syzygium heyneanum*- Simpina

*Syzygium malabaricum* – Nera

*Syzygium zeylanicum*-Guddanera

*Syzygium operculatum* - Nayinera



**Description:**

A slow growing species and can live more than 100 years., A large evergreen tree, growing upto 30 m tall. Bark pale brown or grayish, smooth, exfoliating into woody scales; the juice from the cut barks turning purplish-black on exposure. Leaves opposite, ovate or elliptic-lance shaped, narrowed at base, with numerous, fine, parallel lateral nerves, pinkish when young, changing to a leathery, glossy dark green with a yellow midrib as they mature. gland dotted. The leaves are with an aroma similar to turpentine, Flowers greenish-white, small, sweet-scented, in 3-flowered cymes, in axillary or terminal panicles. Fruits ellipsoid or egg-shaped, smooth, dark purplish-black when ripen; pulp pinkish, juicy. Seeds single, egg-shaped.

**Distribution:**

Distributed worldwide. In India, seen throughout the country excepting desert tracts. Very common in dry forests, especially along water course; also planted as an avenue tree in gardens and along the highways. In Karnataka, seen in districts

**Flowering and fruiting:**

*Syzygium cumini* trees start flowering from March to April. The flowers are fragrant and small, about 5 mm in diameter. The fruits develop by May or June and resemble large berries. The fruit is oblong, ovoid, starts green and turns pink to shining crimson black as it matures. A variant of the tree

produces white coloured fruit. The fruit has a combination of sweet, mildly sour and astringent flavour and tends to colour the tongue purple.

### **Cultivation:**

**Climate and soil:** Since Jamun is a hardy fruit crop, it can be grown under adverse soil and climatic conditions. It thrives well under both tropical and subtropical climates. It requires dry weather at the time of flowering and fruit setting. Early rains are beneficial for better growth, development and ripening of fruit. Young plants are susceptible for frost.

The Jamun trees can be grown on a wide range of soils-calcareous, saline sodic soils and marshy areas. Deep loam and well drained soils are ideal. It does not prefer very heavy and light sandy soils.

**Varieties for commercial cultivation:** Most common type grown in North India is known as Rajamun (large, Oblong, deep purple colour fruit). Another type in Varnasi without seed (Narendra Jamun 6).

**Propagation:** Propagated both by seeds and vegetative technique, the most common being by seeds. The seeds have no dormancy, hence fresh seeds can be sown (within 10-15 days) 4-5cm deep at a distance of 25cm×15cm. The seed germinate 10-15days after sowing. The seedlings become ready for transplanting in spring or next monsoon.

Seedlings plants bear fruits of variable size and quality. Therefore, vegetative method is desirable for propagation of improved or selected types. Budding is most successful for commercial raising of plants. It is done on one year root stock having about 10mm thickness. In low rainfall area, July-August is ideal time.

**Planting:** Pits of 1m×1m×1m size are dug 10m apart for seedling trees and 8m apart for budded plants in a properly cleaned field. Pit digging should be completed before the onset of the monsoon or spring season. They should be filled with a mixture of top soil and well rotten farmyard manure or compost in a 3:1 ratio. Monsoon season (July-September) is ideal time of planting. But it can also be planted with a good survival rate in spring (February – March) if irrigation facilities are available. About 100-150 plants are required for planting a hectare land.

**Training and pruning:** Young plants need training for development of framework. Keep the main stem or trunk clean up to a height of 60-90cm from the ground level by removing the basal branches and sprouts. Jamun plants do not require any pruning except removing diseased and dry and crisscross twigs.

**Manuring and fertilization:** In pre-bearing period, 20-25kgs well rotten farmyard manure/plant/year should be applied. For bearing trees, this dose is increased up to 50-60kg/plant/year. The ideal time for giving the organic manure is a month before flowering. Grown up trees should be applied 500g N, 600g P and 300g K /plant/year. This should be spread near the canopy of the plant and mixed in soil by hoeing.

**Aftercare:** Green manuring can be done during rainy season. Sprouts arising from base of its plants should be removed timely and the plantation should be kept weed free. Jamun is a cross pollinated crop hence raising of honey bees near the plantation is desirable for maximum fruit set and productivity.

**Irrigation:** Young plants require 6-8 irrigations for better growth. In bearing trees, irrigation should be given from September to October for better fruit bud formation and from May to June for better development of fruits. Normally 5-6 irrigations are required.

**Harvesting and Post harvest management:** Seedlings trees start bearing at the age of 9-10 years, where as budded one take 5-6 years. Fruits ripen during June-July or with onset of rains. It takes 3-5 months to ripen after full bloom. Fruit change colour from green to deep red or bluish black. Fruit does not ripen after harvesting. Fully ripe fruits are harvested daily by hand picking or by shaking and collecting the

fruits on a polythene sheet. Jamun trees needs number of pickings, since all fruits do not ripen at a time. The average yield of fully grown budded and seedling tree is 50-70kg and 80-100kg/plant/year.

Jamun fruits are highly perishable. They can be stored only up to 2 days at ambient temperature. Precooled fruits packed in perforated polythene bags can be stored for 3 weeks at 8-10C and 85-90% humidity.

Jamun fruits can be processed into excellent quality fermented beverages such as cider and vinegar, and non-fermented ready to serve beverages and squashes. A good quality jelly can also be prepared from its fruits. The seeds can be processed into powder which is very useful to cure diabetes.

The problem of flower and fruit drop can be minimized by spraying of GA<sub>3</sub> (60ppm) twice, one at full bloom and other 15 days after fruit set.

**Yield:** Fruits 80-100kg /tree/year.

**Economics:** Ripen fruits Rs.80 per kg. Rs.6400-8000/Tree/Year.

### **Medicinal uses:**

The seed is used in various healing systems like Ayurveda (to control diabetes, for example.), Unani and Chinese medicine for digestive ailments. The pulp of the fruit, extracts from the bark and seeds is of great benefit when it comes to lowering of blood glucose level. Taking dried extract of the seeds orally, greatly reduces the blood sugar and glucosuria.

Stem bark used for treating sore throat, bronchitis, asthma, thirst, diabetes, diarrhea, dysentery, ulcers and blood impurities. Seeds used for treating diabetes. Stem bark powder externally applied to prevent hemorrhage, leaves burnt ash in gum and teeth disorders. Root decoction in liver and splenic disorders. Root powder for skin affections. The leaves and bark are used for controlling blood pressure and gingivitis. Wine and vinegar are also made from the fruit. It has a high source in vitamin A and vitamin C.

### **Syzygium cumini fruits Nutritional value per 100 g (3.5 oz)**

<b>Energy</b>	251 kJ (60 kcal)
<b>Carbohydrates</b>	14 g
Dietary fiber	0.6 g
<b>Fat</b>	0.23 g
<b>Protein</b>	0.995 g
<b>Vitamins</b>	
Thiamine (B1)	(2%) 0.019 mg
Riboflavin (B2)	(1%) 0.009 mg
Niacin (B3)	(2%) 0.245 mg
Vitamin B6	(3%) 0.038 mg
Vitamin C	(14%) 11.85 mg
<b>Trace metals</b>	
Calcium	(1%) 11.65 mg
Iron	(11%) 1.41 mg
Magnesium	(10%) 35 mg
Phosphorus	(2%) 15.6 mg
Potassium	(1%) 55 mg
Sodium	(2%) 26.2 mg
<b>Other constituents</b>	
Water	84.75 g

Presence of various flavonoides, essential oils and molecules such as gallic acid, oxalic acid, malic acid, betulinic acid and tannins contribute to its medicinal properties and pharmacological activities such as antimalarial, anti-infective, antibacterial and gastro-protective.

- Dried seeds powder three times a day at one gram each dose could help support **blood sugar**.
- Two grams of dried seeds powder could help with Polyurea of any cause.
- Both seeds and leaves improve **uterine** function.
- Regular intake of fruits for 2-3 months could help with **hemorrhoids**.
- The fruit rind could be helpful in improving **liver** health.
- Seeds decoction with honey prevents thirst and **fatigue** due to physical strain.
- It is one of the best **detoxifying agents** when combined with certain herbs.
- Seeds decoction has **anti septic** activity.
- Fruits reduce excessive salivation.
- The fruit or when used as a supplement could help to enhance the insulin activity and sensitivity. The real benefit of this is at the stage of IFG (Impaired fasting glucose). The cumulative and rational combination of certain herbs could offer blood sugar support. When Jambolan extract is used in conjunction with Gymnema, Bitter Melon, Salacia, Cinnamon and Fenugreek the benefits are immense.
- For ringworm treatment, water diluted juice is used as lotion.
- A decoction of bark is used in cases of asthma and bronchitis and are gargled or used as mouthwash for the astringent effect on mouth ulcerations, spongy gums, and stomatitis.

#### **Other uses:**

The wood is water resistant. Because of this it is used in railway sleepers and to install motors in wells. It is sometimes used to make cheap furniture and village dwellings though it is relatively hard to work on. The leaves are used as food for livestock, as they have good nutritional value.