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GENERAL PROPERTIES AND PHARMACOLOGICAL BENEFITS OF *Syzygium jambos*

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Abstract

Jambos is an evergreen tree with a regular shaped, dense crown of wide-spreading branches, it can grow 6 - 10 metres tall. An attractive tree with showy cream-coloured flowers and dark-green foliage, it is often grown as an ornamental and hedge plant in tropical gardens. The genus is native to India, Malaysia, Myanmar, Philippines, Sri Lanka, Bangladesh, Pakistan, Guangdong, Guangxi and Thailand. Fruit - usually eaten raw, the fruit can also be stewed, made into jams, jellies, confections etc. Several parts of the tree are used medicinally as a tonic or a diuretic. In India, the fruit is regarded as a tonic for the brain and liver. The leaf decoction is applied to sore eyes, also serves as a diuretic and expectorant and treatment for rheumatism. The *Syzygium jambos* (Rose apple) fruits have wide range of medicinal properties to human being like control diabetes, reduce toxicity and boosts immune system etc. Plants develop massive root systems and can be useful for stabilizing soils on river banks. With the above information the plant *Syzygium jambos* have significant medicinal properties against bacterial and fungal infections as well as drug candidate for non-communicable disease.

Key words: Jambos, Rose apple, Medicinal properties and *Syzygium jambos*.



1. Introduction

Jambos is an evergreen tree with a regular shaped, dense crown of wide-spreading branches, it can grow 6 - 10 metres tall. The bole can be 50cm in diameter, often branching from low down (Figure 1). A multipurpose tree that has been cultivated for around 2,500 years. It provides food, medicines and a range of commodities for the local population. An attractive tree with showy cream-coloured flowers and dark-green foliage, it is often grown as an ornamental and hedge plant in tropical gardens. It is also sometimes cultivated for its Edible fruit (Chittenden, 1951).

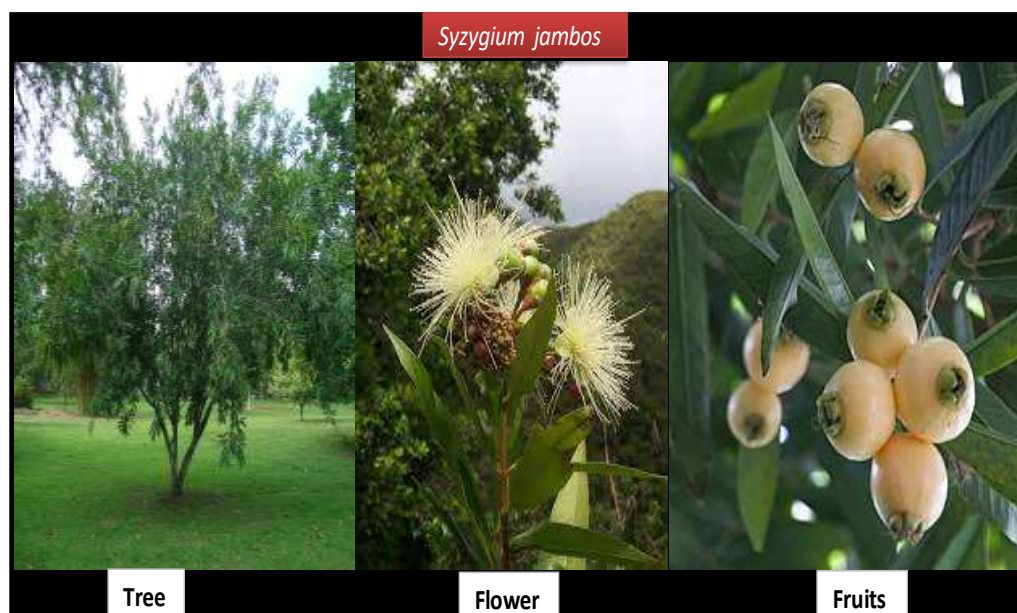


Figure – 1: *Syzygium jambos* – Tree, Flower and Fruits

The edible fruit of *Syzygium jambos* is shaped like some kinds of guava; in fact, the fruit is so like the guava in appearance that people unfamiliar with it may mistake it for a guava on sight. However, the fragrance, flavour and texture are different, and instead of containing dozens of small, hard seeds set in a jelly-like tissue, as a guava does, the fruit of *Syzygium jambos* usually contains one or two large, unarmoured seeds about a cm in diameter, lying loose in a slightly fluffy cavity when ripe. Shaking a fruit to feel whether the seeds rattle, gives some indication whether it is ripe. The skin is thin and waxy. The flowers are described by some as fragrant, though this appears to be a variable attribute. The ripe fruit, however, has a strong, pleasant floral bouquet, hence such common names as "Rose apple" and "pomarrosa" (Hargreaves *et al.*, 1964).



2. Common Names

Syzygium jambos has several common names, reflecting the large number of regions in which it occurs as a garden or fruit tree or as an invader. The names include *Guljamun*, *madhura nelli*, Malabar Plum, *Panineer Champakka*, *Mountain Apple* (*champoo*), *chom pu* or *chom-phu*. Terms like "plum rose", "water apple", "Cloud apple", "Wax apple", "Malay apple", "jambrosade", "PauTêe" (Penang Hokkien spelled with Taiwanese Romanisation System), "pomarrosa", or the English equivalent, "rose apple". Several of these names also are applied to other species of *Syzygium*, while "*jambu*" can also mean a guava. In Bangla, the fruit is called "golap-jaam". In Karnataka the English common name is "rose apple", and the vernacular name is Pannerale (Paneer hannu), while the name for the other one is Nerale.

3. Geographic Distribution

The genus is native to India, Malaysia, Myanmar, Philippines, Sri Lanka, Bangladesh, Pakistan, Guangdong, Guangxi and Thailand. It is considered as exotic in Algeria, Antigua, Barbuda, Australia, Bahamas, Barbados, Colombia, Cuba, Dominica, Ghana, Grenada, Guadeloupe, Guatemala, Guyana, Jamaica, Kenya, Martinique, Mexico, Montserrat, Nepal, Netherlands Antilles, Nicaragua, Panama, South Africa, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Sudan, Tanzania, Trinidad and United States of America (Panggabean, 1991; Venkata Ratnam, 2008).

4. Edible Uses

Fruit - usually eaten raw, the fruit can also be stewed, made into jams, jellies, confections etc. A sweet flavour with a crisp and crunchy texture, the fruit is somewhat to very juicy and has a delicate, rose-water fragrance. When cooked with custards or puddings, they impart a rose-like flavour. The large, hollow seed cavity is sometimes utilized to stuff the fruits and bake them. The fruit has to be handled very carefully after harvesting because it bruises easily and then loses its crispness. The fruit is up to 4 cm x 6 cm, around the tropical world, the fruit is mostly eaten out-of-hand by children. It is seldom marketed. In the home, it is sometimes stewed with some sugar and served as dessert. The fruit can be distilled to yield a rosewater that is said to be equal to the best obtained from rose petals (Huxley 1992).

5. Medicinal Uses

Several parts of the tree are used medicinally as a tonic or a diuretic. In India, the fruit is regarded as a tonic for the brain and liver. An infusion of the fruit acts as a diuretic. A sweetened preparation of the flowers is believed to reduce fever. The



seeds are employed against diarrhoea, dysentery and catarrh. In Nicaragua, it has been claimed that an infusion of roasted, powdered seeds is beneficial to diabetics. They say in Colombia that the seeds have an anaesthetic property. The leaf decoction is applied to sore eyes, also serves as a diuretic and expectorant and treatment for rheumatism. The juice of macerated leaves is taken as a febrifuge. Powdered leaves have been rubbed on the bodies of smallpox patients for the cooling effect. The bark contains 7 - 12.4 % tannin. It is astringent, emetic and cathartic. The decoction is administered to relieve asthma, bronchitis and hoarseness. Cuban people believe that the root is an effective remedy for epilepsy (Manandhar, 2002; Suranant, 2001).

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6. Agroforestry Uses

Plants develop massive root systems and can be useful for stabilizing soils on river banks. However, the dense top growth can stop any plant growth underneath, and this has sometimes led to sheet erosion unless the crown is thinned. Bees produce a heavy, consistent flow of amber honey from the flowers (Francis 1990).

7. Benefits of *Syzygium jambos* fruit (Rose apple)

The *Syzygium jambos* (Rose apple) fruits have wide range of medicinal properties to human being like control diabetes, reduce toxicity and boosts immune system etc. (Figure – 2).





Figure – 2: General medicinal uses of *Syzygium jambos* fruits

Controls Diabetes

Rose apples contain Jambosine, an alkaloid type that can block or regulate the exchange of starch into sugar. This is essential for those people who are at risk of developing diabetes.

Helps in Digestion

The high fiber content present in rose apples makes it great for regulating the food passage through the digestive tract. This helps to relieve constipation and other health problems. In addition, the seeds of the rose apples have been used for preventing diarrhea and dysentery.

Prevents Cancer

Rose apples contain active organic compounds, together with Vitamin C and A. Early studies and traditional medical research proves prostate cancer and breast cancer is reducible with the addition of rose apples to your diet.

Reduces Toxicity

Rose apple decoction have been utilized as a diuretic substance for many years. This has been helpful in removing toxins from the liver and kidney while improving overall health and metabolism in our body.



Improves Heart Health

Rose apples contain fiber and nutrients that show positive effects on controlling cholesterol levels, reduce the risk of atherosclerosis, and prevent cardiovascular problems like strokes, heart disease, and heart attacks.

Boosts Immune System

Rose apples contain active and volatile compounds that have been connected with having anti-microbial and anti-fungal effects. Studies have proven that it can protect the skin from developing several infections and can improve immune system against various diseases.

Treats Bladder Infections

People suffering from bladder infections should include rose apples in their diet. The fruit contains chemical compounds that help in flushing out toxins. It is a natural diuretic which can stimulate the disposal of urine for people suffering from bladder problems. In addition, consuming rose apples can also help in preventing kidney stones formation.

Prevents Dehydration during Pregnancy

Pregnant women get dehydrated quite often as they get nauseous. During that period, drinking rose apple juice is an effective way to prevent dehydration. In addition, rose apples contain vitamins and minerals that are essential for pregnant women.

Strengthen Bones

Rose apples have strong calcium content to maintain bone health. A 100 gram serving of rose apples can provide 29 mg of calcium. Consuming this fruit daily can provide calcium requirement and make bones stronger.

Treats Coeliac Disease

People suffering from coeliac disease should consume rose apples daily. It is said to repair stomach lining that is damaged by coeliac disease.

Hydrates Skin

Rose apples hydrate and cleanses skin. You can apply the juice of rose apple on your face until it dries up. This can help in balancing the oil production and serve as a hydrating mask.



Promote Healthy Hair

Rose apples contain a compound known as procyanidin B-2 which stimulates hair growth and thickening. Using its extract can prevent hair thinning and baldness.

8. Conclusion

Medicinal plants are generally known and popular for a number of health benefits such as decreasing of blood pressure, prevention of cardiovascular diseases, or reducing the risk of cancer also due to their antioxidant activity because the plants hold numerous phytoconstituents. Equally, our plant *Syzygium jambos* also have significant medicinal properties against bacterial and fungal infections as well as drug candidate for non-communicable disease.

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