Syzygium jambos

Alston

Myrtaceae

LOCAL NAMES
English (plum rose,rose apple,malabar plum); Filipino (yambo); French (jamboisie,jambo,pomme rose,pommier rose,pommier rose jambosier); Indonesian (jambu kraton,jambu air mawar); Khmer (châm'puu); Lao (Sino-Tibetan) (chièng,kièng); Portuguese (jambo amarelo,jambeiro); Spanish (manzana rosa,manzanita de rosa,poma rosa,pomo); Thai (jambu kelampok,yamu-panawa); Vietnamese (bô dào,roi,ly)

BOTANIC DESCRIPTION
Syzygium jambos may be merely a shrub but is generally a tree reaching 7.5-12 m in height, and has a dense crown of slender, wide-spreading branches, often the overall width exceeding the height.

The evergreen leaves are opposite, lanceolate or narrow-elliptic, tapering to a point,
10-22 cm long, and 2.5-6.25 cm wide; somewhat leathery, glossy, dark-green when mature, rosy when young.

The flowers are creamy-white or greenish-white, 5-10 cm wide, consisting mostly of about 300 conspicuous stamens to 4 cm long, a 4-lobed calyx, and 4 greenish-white, concave petals. There are usually 4 or 5 flowers together in terminal clusters.

Capped with the prominent, green, tough calyx, the fruit is nearly round, oval, or slightly pear-shaped, 4-5 cm long, with smooth, thin, pale-yellow or whitish skin, sometimes pink-blushed, covering a crisp, mealy, dry to juicy layer of yellowish flesh, sweet and resembling the scent of a rose in flavour.

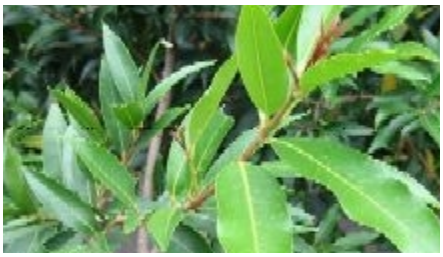
In the hollow center of the fruit, are 1-4 brown, rough-coated, medium-hard, more or less rounded seeds, 1-1.6 cm thick, which loosen from the inner wall and rattle when the fruit is shaken. Fragments of the seed coat may be found in the cavity.

The generic name is derived from the Greek syzygios (paired), on account of the leaves and twigs that in several species grow at the same point.

BIOLOGY
Fruiting can be expected within 4 years. In Jamaica and Puerto Rico, the rose apple trees bloom and fruit sporadically nearly all the year round, though somewhat less in summer than at other times. The main season in the Bahamas and in Florida is May through July. The fruiting period varies in different parts of India. In South India, blooming usually occurs in January, with fruit ripening in March and April, whereas in the Circars, ripening takes place in April and May. In the central part of the country, flowering occurs in February, March and April and the fruits ripen from June through July. Then again, it is reported that there are varieties that produce fruit in February and March.

Flower cluster (Trade winds fruit)

Ripening fruit and foliage (Trade winds fruit)



Flowers and fruit (Trade winds fruit)

ECOLOGY
The rose apple flourishes in the tropical and near-tropical climates only. In Jamaica, it is naturalized from near sea-level up to an altitude of 915 m; in Hawaii, from sea-level to 1 200 m. In India, it ranges up to 350 m, in Ecuador, to 2 300 m. At the upper limits, as in California, the tree grows vigorously but will not bear fruit. In India, it does best on the banks of canals and streams and yet tolerates semi-arid conditions. Prolonged dry spells, however, are detrimental.

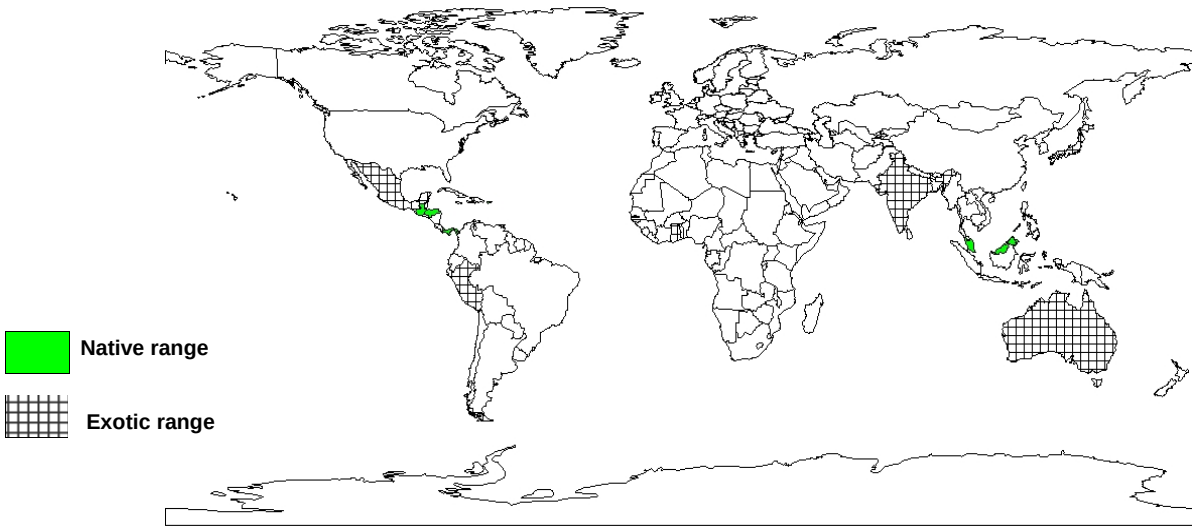
BIOPHYSICAL LIMITS
Altitude: 0-2300 m
Mean annual temperature: 18-27 deg. C
Mean annual rainfall: 1 100- 2 100 mm

Soil type: A deep, loamy soil is considered ideal for the rose apple but it is not too exacting, for it flourishes also on sand and limestone with very little organic matter.

DOCUMENTED SPECIES DISTRIBUTION

Native: Guatemala, Honduras, Malaysia, Panama, Puerto Rico, Virgin Islands (US)

Exotic: Australia, Fiji, Ghana, India, Jamaica, Japan, Mexico, Myanmar, Papua New Guinea, Peru, Reunion, Samoa, Solomon Islands, Sri Lanka, Taiwan, Province of China, Thailand, Tonga, US, Zanzibar



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS
Food: Around the tropical world, rose apples are mostly eaten out-of-hand by children. They are seldom marketed. In the home, they are sometimes stewed with some sugar and served as dessert. Culinary experimenters have devised other modes of using the cup-like halved fruits. One stuffs them with a rice-and-meat mixture, covers them with a tomato sauce seasoned with minced garlic, and bakes them for about 20 minutes. Possible variations are limitless. The fruit is made into jam or jelly with lemon juice added, or more frequently preserved in combination with other fruits of more pronounced flavour. It is also made into a syrup for use as a sauce or to flavour cold drinks. In Jamaica, the halved or sliced fruits are candied by stewing them in very heavy sugar syrup with cinnamon.

Apiculture: The flowers are a rich source of nectar for honeybees and the honey is a good amber colour. Much comes from the San Cristobal River Valley in Cuba.

Fuel: The tree grows back rapidly after cutting to a stump and consequently yields a continuous supply of small wood for fuel. Rose apple wood makes very good charcoal.

Fibre: The flexible branches have been employed in Puerto Rico to make hoops for large sugar casks, and also are valued for weaving large baskets.

Timber: The sapwood is white. The heartwood is dark-red or brown, fibrous, close-grained, medium-heavy to heavy, strong; and has been used to make furniture, spokes for wheels, arms for easy chairs, knees for all kinds of boats, beams for construction, frames for musical instruments (violins, guitars, etc.), and packing cases. It is also popular for general turnery. It is not durable in the ground and is prone to attack by dry wood termites.

Tannin or dyestuff: The bark has been used for tanning and yields a brown dye.

Essential oil: A yellow essential oil, distilled from the leaves, contains, among other properties, 26.84% dl-a-pinene and 23.84% l-limonene, and can be resorted to as a source of these elements for use in the perfume industry.

Poison: The seeds are said to be poisonous. An unknown amount of hydrocyanic acid has been reported in the roots, stems and leaves. An alkaloid, jambosine, has been found in the bark of the tree and of the roots, and the roots are considered poisonous.

Medicine: 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 anesthetic 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 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.

SERVICES
Ornamental: In Israel for instance, rose apple is of interest as an ornamental rather than as a fruit and in California, it is planted as far north as San Francisco for its ornamental foliage and flowers. The showy cream-coloured flowers, dark-green foliage, and moderate size contribute to its popularity.

Boundary or barrier or support: In Guatemala, the tree may be planted as a living fence post or in hedgerows around coffee plantations. For this purpose, it is drastically pruned to promote dense growth.

TREE MANAGEMENT
Rarely do rose apple trees receive any cultural attention. Some experimental work has shown that seedless, thick-fleshed fruits can be produced by treating opened flowers with growth regulators–naphthoxy acetic acid (NOA), 2,4,5-T, or naphthalene acetic acid.
In India, a mature rose apple tree is said to yield 2 kg of fruit each season. The fruits are, of course, very light in weight because they are hollow, but this is a very small return for a tree that occupies so much space.

GERMPLASM MANAGEMENT
Rose apples bruise easily and are highly perishable. They must be freshly picked to be crisp. Some studies of respiration rate and ethylene production in storage have been made in Hawaii. The fruit is non-climacteric.

PESTS AND DISEASES
The rose apple tree has few insect enemies. In humid climates, the leaves are often coated with sooty mold growing on the honeydew excreted by aphids. They are also prone to leaf spot caused by Cercospora sp., Gloeosporium sp., and Phyllosticta eugeniae; algal leaf spot (Cephaleuros virescens); black leaf spot (Asterinella puiggarii); and anthracnose (Glomerella cingulata). Root rot caused by Fusarium sp., and mushroom root rot (Armillariella tabescens) attack the tree.

FURTHER READNG

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SUGGESTED CITATION

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