

**LOCAL NAMES**

English (Wax-apple, water apple, malay apple, Java apple); Filipino (makopa); Indonesian (jambu klampok); Malay (jambu air mawar); Thai (chomphu-khieo); Vietnamese (roi)

**BOTANIC DESCRIPTION**

*Syzygium samarangense* is a tree to 15 m tall, with short and crooked trunk, 25-50 cm diameter, often branched near the base and with wide, irregular canopy.

Leaves opposite, elliptic to elliptic-oblong, 10-25 cm x 5-12 cm, coriaceous with thin margin, pellucid dotted, rather strongly aromatic when bruised; petiole thick, 3-5 mm long.

Inflorescences terminal and in axils of fallen leaves, 3-30-flowered; flowers 3-4 cm in diameter, calyx-tube ca. 1.5 cm long, ventricose at apex, lobes 3-5 mm long; petals 4, orbicular to spatulate, 10-15 mm long, yellow-white; stamens numerous, up to 3 cm long; style up to 3 cm long.

Fruit a berry, broadly pyriform, crowned by the fleshy calyx with incurved lobes, 3.5-5.5 cm x 4.5-5.5 cm, light red to white; flesh white spongy, juicy, aromatic, sweet-sour in taste.

Seeds 0-2, mostly suppressed, globose, up to 8 mm in diameter.

**BIOLOGY**

Shoot growth proceeds in flushes which are more or less synchronous, depending on the climate. The juvenile period lasts for 3-7 years. Bearing of clonal trees starts after 3-5 years. There are definite flowering seasons, often two, sometimes three in a year, but the timing varies from year to year. Wax jambu commonly flowers early or late in the dry season; the flowers appear to be self-compatible and the fruit ripens 30-40 days after anthesis.

**ECOLOGY**

The trees are at home in fairly moist tropical lowlands up to 1200 m elevation. Wax jambu grows best in areas with a fairly long dry season. This does not mean that this species is drought-resistant. The species require a reliable water supply and are often planted along streams or ponds.

**BIOPHYSICAL LIMITS**

Altitude: Up to 1200 m.

Soil types: The trees prefer heavy soils and easy access to water instead of having to search for water in light deep soils.

**DOCUMENTED SPECIES DISTRIBUTION**

Native: Fiji, India, Indonesia, Malaysia

Exotic:



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: The tree is grown for their fruit, which substitute for one another in the marketplace. It is not easy to distinguish between the various *S. aqueum* and *S. samarangense* fruits. The ripe fruit is sweet and is mainly eaten fresh. In Indonesia wax jambu is used in fruit salads ('rujak') and they are also preserved by pickling ('asinan'). Eighty per cent or more of the fruit is edible. The composition the species per 100 g edible portion: water more than 90%, protein 0.3 g, fat none, carbohydrates 3.9 g, fibre 1 g, vitamin A 253 IU, vitamin B1 and B2 traces, vitamin C 0.1 mg, energy value 80 kJ/100 g (analysis for wax jambu in Thailand).

Medicine: Various parts of the tree are used in traditional medicine, and some have in fact been shown to possess antibiotic activity.

Timber: The wood is reddish, hard and grows to dimensions large enough for construction purposes.

**SERVICES**

**TREE MANAGEMENT**

Tree spacing ranges from 8-10 m. The trees receive little attention after the first year or two when manuring, weeding, mulching and watering ensure rapid increase of tree volume. Trees which bear well benefit from compound fertilizers applied after harvest and supplemented with a top dressing as soon as the inflorescences are being formed. There appears to be no experience with pruning or fruit thinning. The fruits have a thin skin and are delicate; they need to be picked by hand twice a week and handled with care. The fruit should be consumed or preserved within a few days from harvest. A five-year-old wax jambu may yield 700 fruit.

**GERMPLASM MANAGEMENT****PESTS AND DISEASES**

There are no specific recommendations for crop protection, but the incidence of pests and diseases certainly warrants a study of the causal organisms and their control.

**FURTHER READNG**

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**SUGGESTED CITATION**

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