

Spondias pinnata Linn.- An underutilized 'Kalpavruksha'

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Introduction

Spondias pinnata Linn. (Synonym: *Spondias mangifera* Willd.) is a member of Anacardiaceae family, commonly known as Wild mango, Bile-tree, Hog-plum, Amrata (Ayurvedic system name). It thrives in evergreen to moist deciduous forests, which can be found in abundance in India's eastern and north-eastern regions. It grows well in warm sub-tropical climates with little frost, and in the Himalayas at altitudes of 550-1500 metres. It's a deciduous tree with a medium to large size range. It contains fragrant bark and compound scented leaves. The tree remains leafless for longer periods till April-May or even later, during this period tree looks very attractive with whitish flowers from March to April. Fruits are acidic in nature and available from June till September. Fruits have fleshy mesocarp with hard fibrous stone at the centre.



Wild mango has been brought under cultivation in 34 countries. The tree yields fruit only once in a year. Generally, fruits are harvested by hand and often by shaking the tree and picking up the fruits from the ground. In West Bengal, on an average, the fruits are sold in the market at Rs. 22-30 kg⁻¹.

Natural population of Wild mango is shrinking due to lack of natural regeneration. This tree can be propagated artificially using seeds as well as cuttings. Fresh seeds and seeds soaked in water facilitate higher germination. Direct sowing of seeds can also be a good option in this species as these plants are quite fast growing and capable of overcoming the competition with grass. Semi-hardwood cutting of length 15-25 cm can also be used for the multiplication of

selected trees. It grows best in well-drained fertile soil. Irrigation is preferred throughout the first year of planting for establishment, however, mature trees do not require irrigation and can tolerate drought also.

Benefits

Each and every part of the tree is being used by human for one or the other purpose, hence, it is called “Kalpavruksh”. Almost every part of the tree has been traditionally used as medicine for household remedies against several human diseases. Apart from human, other animals like deer, pig, monkeys, squirrels and others also get benefited by feeding on its fruits.

Fruit

When ripe, fruits are tasty and sweet-scented. About a quarter of the fruit is made up of pulp. Ripe fruits, which are high in acids, micronutrients, and macronutrients, are used to make a variety of traditional very energising and refreshing drinks. In culinary preparations such as sauces, curries, jams, sherbet, and beverages, juicy and edible pulp is widely employed. Acidic immature fruits, rich in vitamins and nutrients are preferred for the pickle industry having high commercial values. Chutney and pickle are prepared from unripe fruits in West Bengal (India).



Spondias pinnata pickle



Curry made with *Spondias pinnata*



Spondias pinnata fruits

Wild mango fruits are packed with many natural compounds and used as medicines all around the world in various forms of medical systems. Unripe fruits are used as astringent, sour, thermogenic, appetizer and aphrodisiac, and are good for rheumatism and sore throat. While, ripe fruit is sour, astringent, cooling, emollient, tonic, constipating and antiscorbutic, and is used to treat bilious dyspepsia, diarrhoea, and vitiated conditions of tri-dosha. Powdered ripened fruits of the plant are used as an antidote for the wounds of poison arrows and also act as antitubercular. Moreover, its paste is used as an embrocation for both articular and muscular rheumatism.

Leaves

The compound pinnate leaves are aromatic and acidulous. Leaves and flowers are consumed raw or cooked, especially in curries and also used in flavouring. The leaves and fruits are employed in tenderization of the meat at the same time they make it delicious.

Leaves' biologically active components work as astringent and appealing agents. Leaves juice is used as earache drops in Bangladesh. In Nigeria, a decoction of mashed leaves is used to wash a bloated face, while in India, the same decoction is used to cure gonorrhoea. A leaf infusion is a common remedy for cough, dysentery and is used as a laxative for fever with constipation.

Wood

Wood is soft and light and used for making boats, floats, matches, packing cases, tea chests, physician's spatulas, stick for sweetmeats, pencils, etc. The wood is used as fuel in Costa Rica and Puerto Rico, while in Africa, the ashes from the burnt wood are utilized in dyeing. The dark brown coloured gummy exudates from the wood is used as demulcent, adhesive and fumigating agent.

Bark and root

The aromatic bark of this tree functions as an astringent, purgative, and refrigerant. Dysentery, diarrhoea, and vomiting are treated with a bark infusion. The bark is used to treat leprosy on a local level. The root is