

Palmyra Palm- A Lesser-Known Fruit for Profitability and Nutritional Security for Marginal and Small Farmers

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OPEN ACCESS

Keywords

Palmyra Palm, Income, Farmers, Profitability

How to cite this article:

De, L.C. and De, T., 2024. Palmyra Palm- A Lesser-Known Fruit for Profitability and Nutritional Security for Marginal and Small Farmers. *Vigyan Varta* 5(10): 194-197.

ABSTRACT

Borassus flabellifer, known as the Palmyra Palm, is a versatile and celestial tree originating from Africa, Asia and Sri Lanka but flourishing in diverse drier regions. With its unique black trunk and fan-shaped leaves, this dioecious tree produces sweet jelly seed-filled fruits, enjoyed ripe or unripe. Cultivating Palmyra palms requires careful seed handling, precise planting, and patience due to their slow growth. Beyond agriculture, this palm offers numerous value-added products, from traditional uses like thatching and basket weaving to modern applications in beverages and handicrafts. The Palmyra Palm has a rich cultural and medicinal heritage, used for generations to treat ailments and as a vital part of local traditions and food, a remarkable and adaptable plant, benefits small and marginal farming communities with its diverse utility, making it a valuable resource for nutrition and livelihoods in various regions.

INTRODUCTION

Palmyra Palm or Toddy Palm or Wine Palm or Tala Palm (*Borassus flabellifer*) belongs to the family

Arecaceae is a native of drier areas of India, Burma and Sri Lanka. They are monocotyledonous plants and distributed in

Africa, Asia, New Guinea of the world and coastal areas of West Bengal, Bihar and Western and Eastern Peninsula.

The palmyra tree is the official tree of Tamil Nadu and highly respected in Tamil culture, it is called "katpaha tharu" because all its parts have a use. Panaiveriyamman, named after *panai*, the Tamil name for the Palmyra palm, is an ancient tree deity related to fertility linked to this palm. This deity is also known as Taalavaasini, a name that further relates her to all types of palms. The Asian palmyra palm is a symbol of Cambodia where it is a very common palm, found all over the country. It also grows near the Angkor Wat temple. In Indonesia the Palmyra tree is the symbol of South Sulawesi province. This plant has captured the imagination of Bengalis, especially in the words of Rabindranth Tagore whose nursery rhyme 'Tal Gach ek Paye dariye' literally Palmyra tree standing on a single leg ...) in Sahaj Path is a staple reading material in schools in Bangladesh and West Bengal. In the Hindu epic *Mahabharata*, a palmyra tree is the chariot-banner of Bheeshma and Balarama. In Myanmar, the tree is the symbol of Anyar (the dry zone of Myanmar), and is called "pa-de-thar-pin" meaning the tree from which anything you wish can be taken. There are many poems and traditional sounds related to this tree. Since the tree is predominantly found in the rural areas of tropical India, Mahatma Gandhi called the palmyra tree as "An Antidote for poverty" (Morton, 1988). In many parts of the country palmyra trees is the main essential source of livelihood for poor people as they earn substantial income from this tree (Krishnaveni *et al.*, 2020).

Description: These are tall dioecious palms, may attain a height of 30m with a hard black trunk, straight and up to 90cm in diameter. Leaves are large, fan shaped, 2m long and bluish green in colour. The petiole is stout. The female inflorescenceous rachis is 30 cm

long and 2.5 cm in diameter. Flowers are small, borne in densely clustered spikes. Fruits are round, brown or black in colour, 15 cm in diameter. Fruit is a fibrous drupe, 3-seeded.

Propagation: Plants are propagated from seeds and are hard seeded, which are difficult to germinate. Through scarification, germination is hastened. Seeds are normally monoembryonic, occurrence of polyembryony has also been reported.

Cultivation: It grows in tropical open forest near the coastal belt. A hot sunny location and well-drained soil is preferred. Trees are drought tolerant and cold sensitive. Seedlings are spaced at a distance of 5m x 5m. Annual application of FYM is beneficial. Plants above 8 years need 50 kg FYM per plant per year. In the first three years plants need irrigation during hot season. Old and dry leaves or excess leaves are to be removed yearly. Plants start fruiting from 15 years onwards and plants live for more than 100 years. Each plant yield 100 to 120 fruits yearly and each fruit weighs 2 to 5 kg. Mature fruits of bright yellow colour with black shoulders and pure black are to be harvested. After harvest fruit matures within a week. An improved variety called SVPR-1 Palmyra palm has been developed and released by the Palmyra Research Station in Srivaliputhur (T.N.A.U.). SVPR-1 exhibits characteristics of a semi-dwarf variety, with a notable high yield of 298 litres of padaneer per palm within a tapping period of 95 days. Notably, the padaneer from this variety boasts high jaggery content, measuring 144 grams per liter of padaneer (equivalent to 14.40% jaggery content), along with a high brix content (Ranjani and Vathsala, 2023). Average yield expectations include 150 litres of padaneer per tree per year, along with 24 kg of jaggery per tree per year. The jaggery recovery rate per litre of padaneer typically ranges from 180 to 250 grams.

Value added products

Sap: Traditionally the sap is obtained by tapping the top shoots and collecting the dripping juice in hanging earthen pots or in a plastic or bamboo bottle. The juice collected in evening or after fermentation becomes sour, and is called 'Tadi' in Marathi and Bengali, 'Hta-yay' in Myanmar and Bhojpuri. This sap was the main source of sugar production in Thailand before sugarcane was introduced, as can be seen in the Thai word for sugar, which literally means the water of the tala palm. A sugary sap can be obtained from the young inflorescence, either male or female and it is concentrated to a crude sugar called jaggery or Tal Patali in Bengali, hta-nyat in Myanmar and Pana Vellam or Karuppukatti or in Tamil, or it can be fermented to make an alcoholic beverage called toddy or hta-nyay hkar in Myanmar, or distilled to make a liquor arrack. The concentrated raw sugar obtained from palms is called *Gula Jawa* (Javanese sugar) in Indonesia, and is widely used in Javanese cuisine. In Thailand, it is called *nam tan pik*, referring to the pack of sugar obtained from drying the palm sap, though in the modern day *nam tan pik* is often made from coconut water because the convenient of farming and harvesting. In Thailand, there are techniques that utilize the anti-bacterial agents of some woods to keep the sap from becoming sour while tapping. After sterilization, the sap is available as a beverage called *nam tan sod*, lit. 'fresh tala palm water' or used to make an alcoholic beverage called *nam tan mao* lit. 'drunken tala palm water'). "Nam tan", literally means tala palm water, later acquired the meaning of "sugar".

Palmyra Sprout: In the Indian states of Tamil Nadu, Andhra Pradesh, Telangana and Bihar, and in Jaffna, Bengal, Sri Lanka, the seeds are planted and made to germinate and the fleshy stems (below the surface) are boiled or roasted and eaten. It is very fibrous and nutritious. It is

known as Thegalu or Gaygulu or Gengulu (especially in Telangana) in Telugu, as Panai Kizhangu or Panangkizhangu in Tamil, and as htabin myiq in Myanmar. The germinated seed's hard shell is also cut open to take out the crunchy kernel, which tastes like a sweeter water chestnut. It is called "Taal-Anti" in Bengali, "Sachi-Htway" in Myanmar, "Burangunju" in Telugu and "Thava nai" in Tamil. The white kernel of the ripe palm fruit after being left for a few months is used as an offering in Lakshmi Puja in various parts of Bengal and is also eaten raw. In Thai cuisine, it is used as an ingredient to a type of curry, called "Kaeng Hua Tan".

Leaves: Leaves are used for thatching; mats, basket, fans, hats and umbrella. The leaf stalks are used for making writing and printing paper. The stalks are used to make fences and also produce a strong fibre for cordage and used for construction. The fibre is used for preparing brushes and brooms. The young plants are cooked as a vegetable or roasted and grounded to prepare meal. In the eastern part of India, the leaves are used to make hand fans, baskets, hat, umbrella etc. In Myanmar, the leaves are used to make hand fans for the Buddhist monks and are called "Yap".

Trunk or stem: The stalks are used to make fences and also produce a strong, wiry fibre suitable for cordage and brushes. The black timber is hard, heavy, and durable and is highly valued for construction of houses, boats and irrigation purposes. It is superior to coconut timber, or red palm.

Fruits: Fruits are rich source of sugar and vitamin A and B. Palms with red skinned or yellow skinned fruits tend to have a higher number of fruits and nuts per trees but typically less sweet than black skinned fruits. The fruits are eaten roasted or raw and the young jelly seeds are eaten also. Fruits are processed into delicious cakes and breads.

Fruit pulp is used for making ‘Sweets’, ‘Jam’, ‘Toffee’, ‘Puri’, ‘Roti’, ‘Kheer’, ‘Flakes’, ‘Bara’ and ‘Petha’ in Bengali.

Crown: When the crown of the tree is removed, the segment from which the leaves grow out is an edible cake. This is called *htan-ohn-hnauk* in Myanmar, *pananchoru* in Tamil or *thati adda* in Telugu.

Medicinal value

- Medicinally, the palmyra palm has a multitude of applications, including treating various ailments such as biliousness, dysentery, gonorrhoea, heartburn, and respiratory issues. Its parts are used as mouthwash, dentifrice, tonics, and remedies for coughs, ulcers, dermatitis, and inflammatory skin problems. It is also employed as a laxative and liver tonic.
- Palmyra fruit, in various forms, can be used for skin health, reducing symptoms of chickenpox, and soothing conditions like prickly heat and boils.
- It helps to maintain hydration and replenishes lost minerals during hot weather, aids digestion, and serves as a laxative.
- Palm jaggery is a natural sweetener with a low glycaemic index, providing sustained energy, and is rich in vitamins B and C.
- Sandalwood powder mixed with sugar palm fruit can be applied as a remedy for boils, prickly heat, and redness of the face, especially effective after sun exposure. A cotton cloth soaked in sugar palm fruit pulp can alleviate inflammatory skin.

Related Edible Species:

Borassus aethiopum (African Palmyra Palm): Native to Africa. Plants are 15 to 18m tall with

palmate leaves; smooth, greyish trunk and, oblong fruits.

Illustrations



Palmyra tree



Palmyra fruit



Palmyra Jaggery



Palmyra fruit pulp



Palmyra Flakes (Sun dried)



Palmyra Puri



Bara of Palmyra Palm



Palmyra Palm Candy



Palmyra Palm Cake

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