

Underutilized Multipurpose Uses of Manilla Tamarind

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In India there are quite a large number of indigenous and underutilized fruit and vegetable crops, which are used by the local inhabitants. In fact, these fruits and vegetables are the only source of

protective food to meet the need of vitamins and minerals of people living in villages. Owing to curative properties, these fruits are used in Ayurvedic and Unani medicines since time immemorial. Apart from their nutritive and medicinal values, a few underutilized fruits and vegetables have excellent flavour and very attractive colour. They play a major role in the diversification of diet leading to more balanced source of micronutrients. Their cultivation is very restricted and they grow mainly as wild. Being tolerant to biotic and abiotic stresses, these crops are suitable for growing in the drought prone areas. Since India has a rich heritage of indigenous fruit types, some of them have already been recommended for commercial planting. These crops are known as underutilized but they are locally abundant and restricted to their geographical location owing to dearth of scientific knowledge. The major underutilized crops are viz., Manilla tamarind, bael, jamun, tamarind, khirni custard apple, karandas, etc

The Manila tamarind an underutilized and unexploited crop of the world, which has value in terms of food, fodder, fuel and green manuring. It also has high antioxidant potential, nutritive and medicinal value. Due to hardy, drought tolerant, it is a potential climate smart crop for agroforestry system in dry lands and it is one of the fast growing, hardy and evergreen, nitrogen fixing tree species which can resist drought and high temperature. In India, it grown in different forms such as wild, near road side, waste land plantations, farmlands, plateaus and in forests.

Manilla tamarind belongs to Fabaceae family and genus Pithecellobium. The word Pithecellobium is derived from geek language "Pithecos" meaning monkey and "ellobium" means earring. Hence it is known as monkey earrings due to resemblance with twisted pod. It has wide adaptability in terms of soil and climatic requirements. The plants can resist

nutritionally poor and harsh sites, and can grow in sandy, loamy, clay, acid, neutral, alkaline and saline soils. due to wide adaptability, it grows well dry hot tropical and subtropical climates with maximum temperature tolerance limit of 48 °C and can grows well with annual rainfall of 700-1800 mm and survive in as low as 250 mm. It is a forest species whose full potential has not been utilized in terms fruit, fodder, green manure, production of lac and fuel purpose. Beside these it can also produce good quality honey from its flower due to sufficient amount of nectar.

It has a different name in different language. In English it's called, Manila Tamarind, Monkey Pod, Madras Thorn, Blackbead Tree, Sweet Inga, Bread and Cheese Tree. In hindi VilayatiMli, Jangal Jalebi, Singri, Vilayati Babul, DakhaniBabul and in kannada SeemeHunase, Ilaichi Kai, D ora Hunase, Ilach-Hunchi Kai.

Table 1: Proximate composition

Sl.no	Nutrients present	Percentage of composition
1	Carbohydrate	18.2- 76.87g
2	Protein	12.47- 23.3 g
3	Fat	0.4-0.5 g
4	Fibre	1.1-1.3 g
5	Ca	13-21 mg
6	Fe	0.5-1.1 mg
7	Calories	78.8 K
8	Vitamins	Vitamin A thiamine, riboflavin, niacin & ascorbic acid
9	Essential amino acids	Valine, lysine, phenylalanine & tryptophan

In Karnataka its distribution is in Bengaluru, Davanagere, Mandya, Mysore. The plants are evergreen and can grow up to 10-15 m, The leaves are greenish, pinnate, the flowers are sessile, fragrant, greenish white in colour, The flower produces fleshy pods, which are constricted between two seeds and form spiral shape. The pods are initially green in colour which on maturity becomes light green to light pinkish. There are two types of Manilla tamarind i.e. white aril type and pinkish red aril type. The seed are shiny black in colour with circular and flat shape and usually on an average in one pod 4-5 seeds are present.

It has wide used and nutritional importance. Its pods and seeds are having high nutritive value. The aril contains different nutrients which are mentioned in the table 1. The seed contains 13.5 % moisture, 17.6 % protein, 17.1 % fat, 7.8 % fibre, 2.6 % ash, and 41.4 % starch.

Uses

- **Fodder:** Due to high nutritive value of leaves as it contains crude protein (29 %), ash, (5.6 %) calcium & phosphorus (1.14%, 0.35 %) hence they are used for fodder for goats, sheep's, horse and cattle.
- **Green Manure:** It can also use for green manure crop due to leguminous nature. It adds 4.9 % nitrogen, 0.78 % phosphorus and 2.67 % potassium in the soil.
- **Medicinal uses:** The different plant parts of Manilla tamarind such as leaves, bark, fruit,

seed and roots have medicinal as well as traditional uses.

Thus, the increase in climate induced stress in present era had led to serious loss in plant and animal biodiversity. Due to huge yield losses and increased in the population pressure every year, it is impossible to feed to the population in coming era. Now days, due to harsh climatic conditions, the plants are unable to survive and to overcome this, it is become essential to introduce the new crops in our diet which can not only provide food but also give fodder and energy. The introductions of these under-utilized crops are not only having the wider adaptability to harsh climatic conditions but also have ability to fight against the malnutrition problems. Manila tamarind is one of the underutilized potential crop, hence need to be utilized fully in terms of food, fodder, fuel and green manuring.

Table 1: Medicinal uses of Manila Tamarind

Sl. No.	Plant parts	Medicinal use	Traditional use
1	Leaves	It can cure gall ailments and indigestion (leaves + salt) prevent miscarriage, convulsions, reduce inflammations (leaf paste)	Fodder
2	Bark	Used for treating the Astringent, antipyretic, dysentery, chronic diarrhoea, haemostatic, tuberculosis, gum ailments, toothache and haemorrhages.	Tannin extracted from the Bark is used to soften leather
3	Fruit/ Aril	For prevention of gum ailments, toothache and boosting the immune system it staves off strokes and as it contains cancer-fighting antioxidants, reduce haemoptysis and haemorrhages	Used in the preparation of jam, beverage and squashes
4	Stem & branches	Combats dysentery	It used as avenue tree and topiary, wood of branches and stem used for furniture implements and also as fuel
5	Seed	For cleaning ulcers and it reduce chest congestion by inhaling the seed juice into the nostrils.	Seeds are edible & eaten in curries in India and the pressed seed is used to form seed cake and used as a seed meal for stock feed. MTSO Manila tamarind seed oil can be extracted and has anti-microbial and anti-inflammatory properties
6	Root	For curing the diarrhoea and dysentery.	-
7	Flowers	-	Excellent quality honey is produced from the high-quality nectar and pollen of flowers
