
Multipurpose Tree Manila Tamarind

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ABSTRACT

The Manila tamarind (*Pithecellobium dulce* (Roxb.) Benth) belongs to the family Fabaceae. This species have several medicinal and nutritional properties. The fruits are having sweet and sour pulp which is eaten as fresh in India. It is one of the minor fruit tree and highly suitable for alley cropping. This can be planted as ornamental shade trees in pathways and hedges in gardens. It is a fast growing medium size tree grown up to a height of 10-15m. This species is drought tolerant and grown in wide range of soil and climatic conditions. Naturally this plant species can be multiplied by seeds and grafting techniques also standardized for propagation.

INTRODUCTION

The Manila tamarind (*Pithecellobium dulce* (Roxb.) Benth) belongs to the family Fabaceae and sub-family Mimosoideae. The pods are resembles the shape of Tamarind and plants are widely found in Manilla. So this plant is named as Manilla Tamarind. This tree has multiple uses; fruit, firewood, honey, fodder, soap oil, tannin, hedges and shade. The genus name means curly pod, that imitates an ape's earring (pithekos ellobium), and the species name "dulce" means sweet pod. This species are widely cultivated for protein rich fodder and fire wood in Asia, South America and African countries. This pod are known as "Monkey pod" in English "Seema Chintakaya" in Telugu, "Kona puliyankaai" or Kodukka Puli" in Tamil and "Jungle Jalebi" or "Ganga Imlı" in Hindi "Seeme hunase" and "Vajipkai" in Kannada.

ORIGIN AND DISTRIBUTION

This species is native to South America and cultivated in many tropical Asian and African countries. In India, this species is present throughout the tropical parts of the country except North Eastern parts and Kashmir.

MEDICINAL USES

This species have several medicinal and nutritional properties. The pitheduloside separated from the plants are anti-inflammatory, anti-microbial, anti-tubercular, spermicidal, protease inhibitor, anti-venom and abortifacient. The leaves can be used as poultice with alcohol to treat bile, and to prevent abortions/miscarriage.

The extracts of leaves are used to relieve pain, convulsions, indigestion and diabetes. The fruits are used to prepare refreshing cool drinks. The fruits, seeds, leaves, and bark are possess antioxidant properties and capable to cure intestinal problems and cancer.

FOOD USES

The pods can be eaten as fresh fruit in Mexico and India. In India, the seeds are used for curry preparations. The fresh fruits are tasted by monkeys and cattle.

AGRO FORESTRY USES

It is one of the minor fruit tree and highly suitable for alley cropping. The wood can be strong and durable yet soft and flexible. It is used for providing support in construction of buildings as posts. The wood is used for manufacturing of panels, boxes, trays, farm implements and cart wheels. The heartwood is reddish-brown in color, dense and difficult to cut. Irregular growth, short thorns and branching restrict the use as a timber. The fire wood is not high quality due to smokiness and low calorific values. The wood is used as a domestic fuel as fuel for brick kilns in India. If wounded, the bark releases a reddish-brown gum and soluble in water to prepare mucilage. The bark is used for tanning and produces a yellow dye.

ORNAMENTAL USES

It is commonly raised as an ornamental, shade tree planted on paths and roads and hedges in gardens. It is usually pruned to be an avenue tree, and rarely used for more making large size topiary. Regular pruning produces a hedge which quickly forms a dense spiny fence and is barrier to livestock. It can withstand severe pruning. The trees are commonly used as a shade or shelterbelt tree and which is tolerance to drought and problem soils. Coppicing usually increases the presence of spines.

ENVIRONMENTAL BENEFITS

This species are having nitrogen fixing ability and commonly planted on problem soils for reclamation. Trees are used as a host for rearing lac insects.

BOTANY

HABIT

It is a fast growing medium size tree grown up to a height of 10-15m. Irregular branching patterns with bi-pinnate leaves and leaf bases are surrounded by pairs of thin spines. The

development of fresh leaves compensate the loss of old leaves and thus provide the tree an evergreen.

HABITAT

This species is drought tolerant and grown in wide range of soil and climatic conditions.

INFLORESCENCE

Inflorescence type is panicle and it can be formed in axillarily or terminally from the leafy branches. Flowers borne on terminal compound inflorescences with a length of 10 to 20 cm. Each panicle is roughly having 20 to 30 fertile flowers.

FLORAL BIOLOGY

Flowers are greenish white, sessile, calyx and corolla are small, single thread like tubular pistil longer than stamens, pink color with capitate stigma; and stamens are fifty numbers that provide hairy appearance. The flowers are pollinated by honey bees and honey collected from these flowers are in good quality.

FRUIT

Plumpy fruits, constricted between the seeds, white spongy flesh with 5 to 12 black glossy seeds in the pod. The flesh of the pod is sour and sweet in taste. The color of flesh is mostly white rarely red also.

SEED

The birds eat the fruits and disperse the seeds. The oil present in the seed (20%) is used for soap making, and the oil cake is used as an animal feed.

SOIL AND CLIMATE REQUIREMENTS

It grows well in semi-arid regions and temperature ranging from 7 to 8°C in January to 40 to 42°C in May and June. It survives in hot climates and annual rainfall ranging from 40 to 165 cm. This species can be grown above 1,500 m MSL in Mexico and East Africa. This species perform well in wide range of soil type viz., clay, limestone and sands. Manilla tamarind is tolerant to heat, salinity and moisture stress

PROPAGATION

Naturally this plant species can be multiplied by seeds. The softwood grafting performed on nine months old rootstocks during August month recorded the highest survival percentage, grafted during September recorded the less number of days taken to first sprouting with highest number of leaves per plant and highest chlorophyll content,

CONCLUSION

Manila tamarind is one of the versatile trees. It provides food, medicine, fodder, fuel, fire wood, timber wood, aesthetic value, soil fertility and conserving the environment. This is drought tolerant grown under varied climatic conditions. These kinds of trees are highly suitable for changing climate scenario. This can be promoted for large scale cultivation among farming community.