

## ***Tamarindus indica* – Introduction in India and Culinary, Medicinal, and Industrial Uses**

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### **Abstract**

*Tamarind or imli is a well-known commodity of Indian cuisine, and has medicinal and industrial uses. The distribution, botany, and uses of its different parts are discussed. It is envisaged that tamarind was introduced in India by the Ethiopian traders before the Arabian traders reached India.*

Tamarind (*Tamarindus indica*) is an introduced plant, naturalized in India. The fruit of the tamarind tree or ‘Assam tree’ is known as ‘*imli*’ or ‘Indian date’. The sticky acidic pulp of tamarind fruit has been used as a food ingredient and medicine for many years. The edible fruits, and especially the pulp, can be eaten raw or used as sherbet or as an ingredient in curries, pickles, etc. The seeds contain starch and are eaten raw or cooked in times of scarcity and used in cloth mills.

During the period of Akbar the Great, the Mughal king, the fruit was known as *ambli* and was grouped under the acidic fruits and sold at 2 dirhams per seer (Abul Fazl Allami, 1596–97 in Blochmann, 1873).

Hoffmeister (1848), while visiting Ceylon (Sri Lanka) and India in 1845, had the following remarks about tamarind. While in Ceylon he wrote, “Our cottage was shaded by a beautiful and gigantic tamarind tree (*Tamarindus indica*), the pods of which contain semi-fluid pulp of a most agreeable

acid, which is a favourite refreshment in this country and resembles Acacia.” While in India at Gaya he remarked, “Here too flourishes that most beautiful of all Indian trees, the tamarind. Its tender and fragrant verdure, as it spreads its graceful shade, here, over a white, conical, Hindoo temple – there, over a group of simple clay-built cottages, or again, over the colonnades of English country seats – adds an indescribable charm to the scene.”

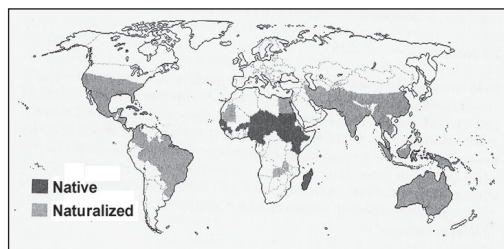
Tamarind wood is used as timber, firewood and for charcoal. Other uses of tamarind include in medicines, dyes, and as an ornamental tree in road avenues. Due to its importance as food the seeds of tamarind have been saved in the millennium seed banks worldwide, focusing as food plants of the future and in these banks, seeds are dried, packaged, and stored at a subzero temperature in the seed bank vault.

The plant is not only well-known in Asia, Africa, and Europe but also in the Americas,

where it has been traded and cultivated. In this paper, an effort has been made to discuss the distribution of the plant, its introduction in India, the botany, and uses of its different parts, including culinary, medicinal, and industrial uses.

### Geographical distribution and nativity

Tamarind is indigenous to tropical Central Africa and is a very adaptable species, drought hardy, preferring semi-arid areas and woody grasslands, tolerating salty conditions, coastal winds, and even monsoon climates. It grows naturally in Burkina Faso, Cameroon, Central Africa Republic, Chad, Ethiopia, Gambia, Guinea, Guinea-Bissau, Kenya, Madagascar, Mali, Niger, Nigeria, Senegal, Sudan, Tanzania, and Uganda (Salim *et al.*, 1998 quoted by Gunasena and Hughes, 2000; <http://www.infonetbiovision.org/default/ct/618/agroforestry>). Farmers usually cultivate it in parklands in the arid and semi-arid zones of West Africa. It was introduced in India, Ceylon, and Southeast Asia millennia ago (Fig. 1).



**Figure 1.** The native (original) and naturalized distribution of *Tamarindus indica* (Source: Gunasena and Hughes, 2000).

### Unique traditions and customs

Morton (1958) has revealed a few unique traditions and customs from various parts of the world. There is a superstition that it is harmful to sleep or tie a horse beneath a tamarind tree. Some African tribes venerate the tamarind tree as sacred. In Burma (Myanmar) natives believe that the 'Rain God' dwells on the tree. In Nyasaland (Malawi), tamarind bark soaked with corn is given to domestic fowls with the belief that if they stray or are stolen, it will cause them to return home. In Malaya a little tamarind and coconut milk is placed in the mouth of a newborn child and the bark and fruit are given to elephants to make them wise.

### Botany

*Tamarindus indica* belongs to the monotypic genus *Tamarindus* (Caesalpinoideae). Tamarind is a diploid species with chromosome number of  $2n=24$  ( $x=12$ ) (Purseglove, 1987 quoted by Gunasena and Hughes, 2000). It is a spiny, large, evergreen tree reaching up to 20–30 m in height having a spreading crown up to 12 m in diameter with a good shady canopy (Fig. 2). It provides shade and shelter because of its extended crown. Further, due to its ability of resistance to storms, it is also used as a windbreaker. It is also known to exhibit allelopathic effects, which does not allow any other plant to grow beneath or beside it. It is an excellent evergreen ornamental plant bearing beautiful flowers and makes it suitable for planting in parks, along roads, and riverbanks as an avenue. It is a good nitrogen-fixing tree and due to its spiny nature it also serves as a live fence.



**Figure 2.** A dense tree of tamarind; (inset) compound leaves and a bunch of fruits.

The stem is stout, short, fissured, gray and brown in color, and very rough and scaly. The leaves are compound, measuring up to 6–15 cm long, composed of numerous small leaflets, which close at night, and arranged in pairs along a central axis. The flower buds are rose red, beautiful, and small, when in bloom about 2.5 cm across and have three petals that are golden with yellowish red or pink veins with two tiny thread-like petals that are barely visible. The flowers are borne on inflorescences up to about 20 cm long.

The fruits are sausage-shaped pods (4–20 cm long), scurfy brown, and pithy green inside, when unripe. The fruit contains an acidic pulp, which is a much-prized

ingredient of confectioneries, curries, and pickles. When fully ripe it is brown and contains many hard-coated seeds. Seeds are dark brown or black and yield starch.

Usually, the tree bears fruit within a period of 8–10 years. It fruits in *Asad-Bhado* (June to September) and ripens in *Magh-Chait* (January to April). Further, pulp from the unripe fruit is stated to be harmful (Trivedi, 1961). A mature tree may annually produce 330 to 500 lbs (150–225 kg) of fruits, of which the pulp may constitute 30 to 55%, the shells and fiber, 11 to 30%, and the seeds, 33 to 40% (Gunasena and Hughes, 2000).

### Food value and main constituents

Analyses of the pulp data are many and varied from place to place and country to country. Roughly, they show the pulp to be rich in calcium, phosphorus, iron, thiamine, and riboflavin and a good source of niacin. Ascorbic acid content is low except in the peel of young green fruits. The food value of tamarind pulp and date (*khajur*) in India is tabulated for comparison (Table 1).

Ripe tamarind contains sugars (50%) whose sweet taste is however, outweighed due to tartaric acid, which has an intensively acidic taste. It is a good source of tartaric acid (up to 20% content) and also of pectin (2.8%). The fruits also contain essential oils; these are terpenes (limonene, geraniol), phenylpropanoids (safrole, cinnamic acid, ethyl cinnamate), methyl salicylate,

**Table 1. Food value per 100 g of edible portion of tamarind and date.<sup>1</sup>**

Constituent	Tamarind				
	Pulp (ripe fruit)	Leaves (tender)	Flowers	Seeds (roasted)	Date (dried)
Energy (Kcal)	283	115		387	317
Moisture (g)	20.9	70.5			15.3
Protein (N × 6.25) (g)	3.1	5.8		16.1	2.5
Fat (g)	0.1	2.1		7.3	0.4
Minerals (g)	2.9	1.5			2.1
Fiber (g)	5.6	1.9	1.5	1	3.9
Carbohydrates (g)	67.4	18.2		64.1	75.8
Ash (g)	2.9	1.5	0.72		
Calcium (mg)	170	101	35.5	121	120
Magnesium (mg)	41	26			12 <sup>2</sup>
Phosphorus (mg)	110	140	45.6	237	50
Iron (mg)	17	0.3	1.5		7.3
Copper (mg)	0.2	0.02			0.05 <sup>2</sup>
Manganese (mg)	0.55	0.12			0.03 <sup>2</sup>
Zinc (mg)		0.26			0.03 <sup>2</sup>
Carotene (µg)	60	250			26
Thiamine (mg)		0.24	0.072		0.01
Riboflavin (mg)	0.07	0.17	0.14		0.02
Niacin (mg)	0.7	4.1	1.14		0.9
Vitamic C (mg)	3	3	13.8		3
Essential amino acids (mg per g N)					
Arginine	450	370			150
Histidine	143	140			50
Lysine	475	300			190
Phenylalanine	318	370			170
Tyrosine	287	220			50
Methionine	–	80			50
Cystine	106	60			120
Theonine	200	290			180
Leucine	531	580			260
Isoleucine	313	330			150
Valine	–	360			220

1. Source: Gopalan *et al.* (1996); Gunasena and Hughes (2000).

2. Values are for fresh date.

pyrazine, and alkyl thiazoles (Source: Journal of Essential Oils Research 15:318, 2004).

### Introduction of tamarind in India

The nativity of tamarind is tropical Central Africa. But when was it introduced into India and by whom? The following main points are considered and discussed: (i) The theory of introduction of the plant in India; (ii) Who introduced and from where it was introduced; and (iii) Introduction of the plant into Ayurvedic medicine.

#### The theory of introduction

The Indian botanist Brandis (1906) stated that tamarind is an introduced plant and not indigenous to India and Burma (Myanmar) and was introduced through sea route. According to Rachie (1979), the plant was introduced in India and other countries in Asia in ancient times by the Arab traders. If so, from where was it introduced as it does not grow in the Arabian countries. There were two types of Arabian traders, who were trading with India; one who used to come through sea routes to Gujarat and the other who followed the land routes from

Nile to Indus river and they were called the Sabaeans, who hailed from the southwest region of Arabian desert (Thorwald, 1962). They had the monopoly of the trade as the other competitors did not know the desert routes.

#### The Ethiopian traders

Some records indicate that the Ethiopians also traded with India much before the Arabs and they were the contemporary and rival traders when the Ethiopian Empire existed. The navigation history of East Africa has a number of records of naval communications described in the *Periplus of the Erythraean Sea* and also in *Ptolemy's Geography* of the first and second centuries AD, respectively, in *Pseudo Callisthenes* in third century AD, and later *Cosmos Indicoplestes* in sixth century AD by the Ethiopian Empire. Further, the presence of Ethiopian merchants in India and Ceylon (Sri Lanka) had been reported by Ibn Batuta. He had also reported the presence of Abyssinian (Habshis) from the port of Calicut and Ceylon in the fourth century AD (Tolmacheva, 2008).

The tropical Central Africa is also the home of tamarind, where it is known by a number of vernacular names (Table 2). When the

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**Table 2. Vernacular names of tamarind in different countries.<sup>1</sup>**

Country/Language	Names
<b>Africa</b>	
Ethiopia	<i>Hemor, homor, humar, komar, tommar, broka, racahu, dereho, dindie, ghromaglanke, omar, mushishi, mwemba, musika, roka, roqa</i>
Kenya	<i>Ukwaju (Bajun), mukai (Boni), roqa, groha (Boran), mkwazdu (Digo), muthithi (Embu), mkwaju, kwaju (fruit) (Giriama), chuzaa, kithumula, kikwasu, nthumula (fruit), nzumula (fruit), ngwasu (fruit) (Kamba), lemecwhet, lamaiyat (Kipsigis), kumukhuwa (Luhya, Bukusu), ochwaa, chwaa (Luo), ol-asamburai, oloisijoi (Maasai), morhoqa (Malakote), aron, oron (Marakwet), muthithi (Mbeere), muthithi (Meru), limaiyus, lamayuet (Nandi), roqua (Orma), mkwayu (Pokomo), oron, arol (Pokot), lemaiyua (Sabaot), rogei (Samburu), roka (Sanya), harmaar, harmar, raqee, roge, roqhe (Somali), mkwaju, msisi, ukwaju (fruit) (Swahili), mkwachu (Taita), mase, muzumura (Taveta), epeduru (Teso, Turkana), muthithi (Tharaka), aryek (fruit), arwe (Tugen)</i>
Senegal	<i>Dakar, dhakar<sup>2</sup></i>
Somalia	<i>Hamar</i>
Sudan	<i>Shekre, kuashi, danufi, aradeib (Arabic)</i>
Uganda	Leaves: <i>esuuru, esuguguru</i> ; fruit: <i>e/apedura, iti, chwa/o, pitie</i>
Zambia	<i>Mushishi, mwemba, musika</i>
<b>Arabian countries</b>	<i>Aradeib, tamar</i>
<b>India</b>	
Hindi	<i>Imli, katare</i>
Marathi	<i>Chincha, chinckoa</i>
Gujarati	<i>Ambli, chincora</i>
Kannada	<i>Amla, huli, hunase-hannu; hunase-mara (tree)</i>
Tamil	<i>Puli</i>
Telugu	<i>Chinta chettu (tree); chintapandu (fruit)</i>
Malayalam	<i>Puli, pulimaram, valanpuli</i>
Oriya	<i>Teetuli</i>
Bengali	<i>Tentul, tinturi, amlı</i>
<b>Nepal</b>	
Nepali	<i>Ttri, imli</i>
Newari	<i>Titis, paun</i>
<b>Sri Lanka</b>	
Sinhala	<i>Siyambala, maha siyambala</i>
Tamil	<i>Puli</i>

*continued*



Table 1. *continued*

Country/Language	Names
<b>Southeast Asia</b>	
Myanmar	<i>Maggyi, magyee majee-pan</i>
Cambodia	<i>Ampul, ampil, khoua me</i>
Malaya	<i>Asam jawa</i>
Thailand	<i>Ukwaju, makham, bakham, somkham, Thai-kham, ma kham peak, met ma kham</i>
Vietnam	<i>Me, trai me, me chua</i>

1. Source: Baumer (1980); Coronel (1991) and Salim *et al.* (1998) quoted by Gunasena and Hughes (2000); <http://www.infonet-biovision.org/default/ct/618/agroforestry>
2. Dhakar, the capital of Senegal, is also named after this plant.

Ethiopian merchants traveled on long sea journeys they possibly might have kept the pulp of tamarind (*tommar*), as it is tasty and nutritive as a food and could be kept for long time and also quenches the thirst during sea journeys. The Ethiopian merchants were in good contact with India and Ceylon since 100 AD to 600 AD, long before the Arabians (600 AD) came to India. Perhaps, they introduced the plant in India. The period of 200 to 500 years was enough to grow and naturalize the plant in India, where the climate very well suited the tamarind tree. The people of India and Ceylon well adopted the plant in their cultural life and used it in their traditional culinary foods.

When the Arabian traders reached India they saw the plant growing well in India and seeing its useful fruit pulp they might have thought of trading it back to the Arabian and European countries. They traded it under the name '*Tamar-e-hind*'; '*Tamar*' also refers to date (*khajur*) that grows in Arabia and is also similar to '*tommar*', the Ethiopian vernacular name of tamarind. However, the Arabian traders were very intelligent and shrewd

and always looked for a novel item of trade. The ancient records show that the Arabians perhaps knew the plant well before they saw it in India. *Tamarindus indica* was possibly brought by the Arabian traders from its native land the tropical Central Africa, where expeditions were sent to collect medicinal and other useful plants as there is a record that in 1493 BC the Egyptian queen sent an expedition to Punt (Thorwald, 1962). Later, when the Arabian traders visited India via sea route, they saw the juicy, sticky, black pulp and seeds of the tamarind fruit, which was well-known to them.

*Phoenix dactylifera* (date-palm) is indigenous to Euphrates and Tigris plains and is also

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known as *tamar*. According to Farooqi (2003), many fruit plants have been mentioned in Holy Qura'n but the date-palm is mentioned about 20 times. The tree is known as *nakhi* and the fruit is known as *tamar* in Arabic. Further, dates have immense nutritional value and medicinal properties and are used as a laxative, diuretic, aphrodisiac, and for checking loss of memory.

Basra, the port city of Iraq once was an important trade center for two types of *tamar*: one the actual *tamar*, i.e., the date (*khajur*) and the other was the Indian date or tamarind, *Tamar-e-hind* imported from India as a food article and as an ingredient in sherbet, a sweet and nourishing drink (Farooqi, 2003).

#### Introduction of tamarind in Ayurveda

After the introduction of the plant in India then the question arises: When was it introduced in Ayurveda? In ancient Ayurvedic literature, like *Caraka Samhita* (125–150 AD) (Sutra 23-37, 27-149, C.S.Viman. 8-147, C.S.Chikitsha 14-124, 200) and *Sushruta Samhita* (800–900 AD) (Sutra 46-139, 160) it is mentioned under the name of '*amla*'. It is also opined that the acidic plant which possibly Caraka mentioned and used was not *Tamarindus indica* but *kokam*. Further, it is also mentioned in Amarsimha's *Amarkosha* (600 AD) (Amarsimha, 2001) as *tintidi*, *cinca*, and *amlika*. In Sanskrit the *Garcinia* species (Guttiferae) *G. cambojia* or *G. indica* (*kokam*) is known as *tintidi*, *tintdik*, and *vriksha amla* and these names also stand for tamarind.

#### Plantation on Grand Trunk Road

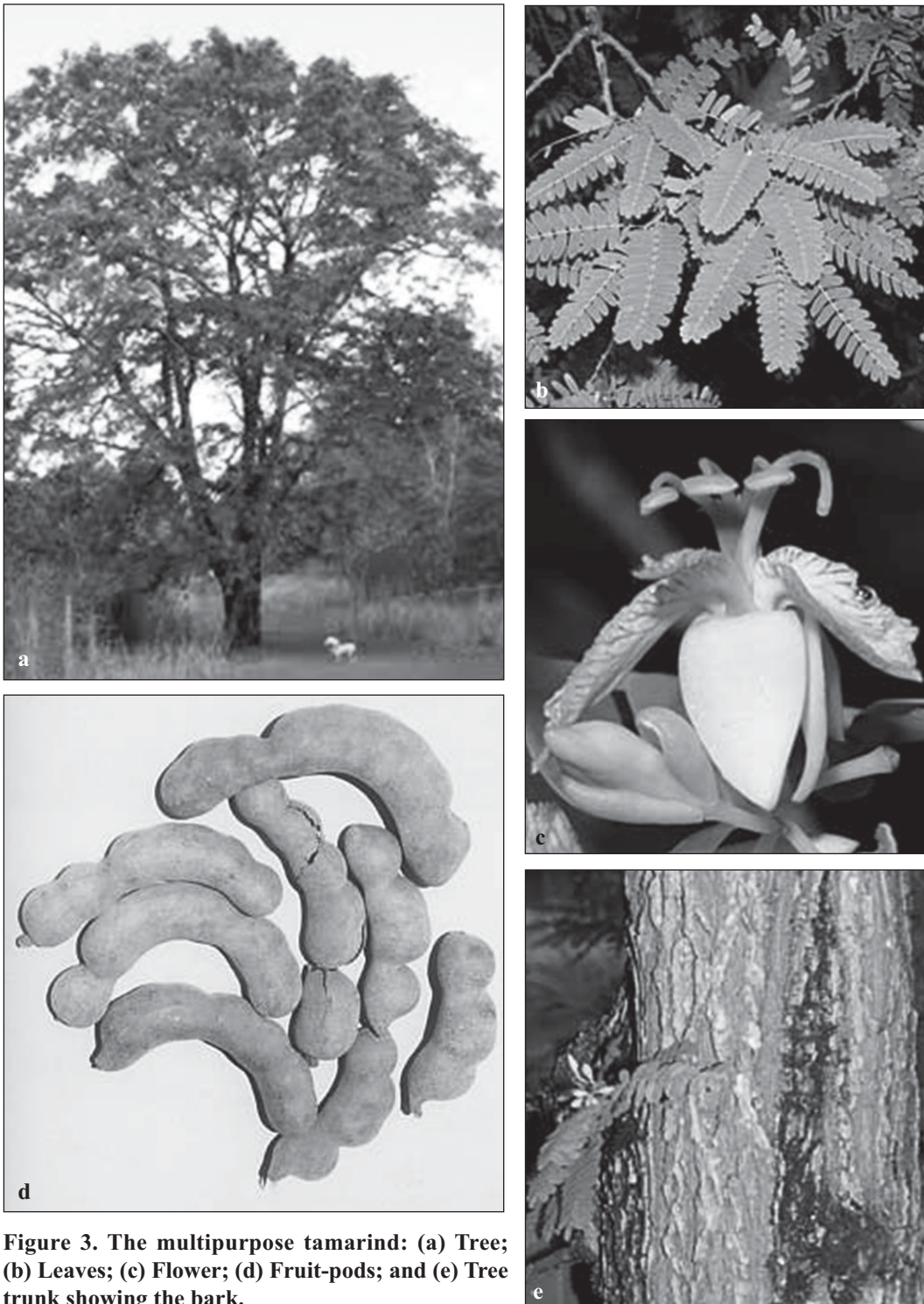
The tamarind tree was planted as an avenue by Sher Shah Suri (1540–45), while renovating and repairing an ancient road, which connected Peshawar to Kolkata, India even farther into present Bangladesh so that the travelers could take a siesta in the shade of the tree and have the pulp of tamarind fruit as a refreshment. The avenue was named as '*Sadak-e-Azam*' ('Great Road'). At that time, small inns, called '*sarai*' were constructed at every 20 miles to facilitate the postal runners and the travelers. Big canopy trees were also planted. These mainly included the tamarind and wild mango trees, which not only provided shade but also refreshing and nutritious fruit-pulp during hot months, when water was not available and the pulp quenched their thirst. The Britishers named the road as 'Grand Trunk Road'. During the British period and afterwards, the tamarind trees were cut and removed for widening and repairing the road. The practice of planting tamarind trees as an avenue on important roads was also adopted by the Nawabs of Avadh in Uttar Pradesh.

#### Uses

In India, practically all parts of the tamarind tree are used for various purposes (Fig. 3). Earlier, in South India the natives used the pulp as a constant ingredient in all their curries and sherbet. At present, the pulp of ripe fruits is widely used mostly for culinary purposes in a number of preparations like *sambar*, *rasam*, curries, and *chutneys*.

The leaves are also cooked as vegetable or mixed in curry to make it sour. In South





**Figure 3. The multipurpose tamarind: (a) Tree; (b) Leaves; (c) Flower; (d) Fruit-pods; and (e) Tree trunk showing the bark.**

India the nectar obtained from tamarind flowers is rated very high; it is golden-yellow and slightly acidic in flavor. Flowers are sour and sweet, tasty, appetizing and are cooked as vegetable. The flowers are also used to prepare *chutney*.

In Assam, tamarind pulp is used variously. The ripe pods are cracked, and pulp and seeds are extracted out. A little salt or sugar may be added and the pulp is ready to be used for cooking as a condiment or as a *chutney* and in deserts, sweets, and chilled drinks. It is an important ingredient in the local favorite – Assam fish! Boiled with an equal weight of sugar, the pulp becomes a jam. A syrup can also be made. The pulp is also used for medicinal purposes. It is a gentle laxative; sometimes the roots are used instead. The salted pulp may also be made into balls and steamed, then dried in the sun and exposed at night to the dew for a week. These are then packed into earthenware jars which are well closed. A liquid, running thickly like oil, drains from them in storage, especially if the jars are allowed to stand in the sun. The liquid is used for medicinal purposes such as treating mouth ailments, etc.

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The starchy seeds may be eaten after the outer skin is removed by roasting or soaking. The seeds are boiled or fried, and sometimes made into flour. The flowers and leaves may be eaten as a vegetable. The bark is used in treating sores, ulcers, boils, and caterpillar rash. Leaves may be used to treat fever. Young leaves are used to treat rheumatism and sores and wounds. The tree is even used to treat elephants! The bark and fruit are used for stomachache and to make an elephant sagacious (Burkill, 1935).

#### Medicinal uses

The first medicinal use was reported from India by Ainslie (1813). The pulp is considered as cooling and laxative; decoction of leaves is used in fomentation. The Tamil practitioners used it with other ingredients to treat jaundice.

The pulp had been official in old British, American, and other pharmacopeias. In British Pharmacopeia it was used as laxative and refrigerant and in the preparation of confection of senna, a leguminous herb (Nayar and Chopra, 1951). Generally, the pulp is made into a big ball or kept in gunny bags for years. The old pulp is preferred in medicine. The hakims use the pulp in preparation of *churna* (powder) of various mixtures, which is used as an appetizer.

Medicinal uses of tamarind are innumerable. However, Watt (1893), Morton (1958), Trivedi (1961), D'Souza (1993), and Gunasena and Hughes (2000) have dealt in detail the medicinal as well as its industrial uses. In

India, two types of pulp are recognized; one from Gujarat region, which is red in color due to the pigment chrysanthemine and this one is preferred for medicinal uses. The other type is lighter in color, which comes from the rest of the country. A few branded medicinal preparations sold in the market are *Cincadi leham*, *Panchmala telam*, and *Kotamcakkdi telam* (Sivarajan and Balachandran, 1994). Chopra *et al.* (1958) report that the pulp is boiled with water and sweetened and is used as refrigerant, carminative, and laxative and much prescribed in febrile affliction. The ripe pulp is an effective laxative in habitual constipation.

Tamarind leaves and dried flowers are boiled and are used as poultice on swollen joints, sprains, and boils. Leaves are used as astringent, as gargle, and also made into a poultice to treat inflammatory swellings (Chopra *et al.*, 1958).

Morton (1958) stated that the bark of the tree is regarded as an effective astringent, tonic, and febrifuge. In olden days, the powder of bark was used to clean brass utensils. Twigs are sometimes used by the tribal people as 'chew-stick' and the bark of the tree as a masticator all alone or with lime just as areca nut. The paste of powder of the bark is used topically for loss of sensation in paralysis. According to Trivedi (1961), the ash of bark is used for urinary discharge and gonorrhoea and healing ulcers. Decoction of the bark is used for excessive menstruation.

An infusion of the roots is believed to have curative value in chest complaints and is an important ingredient in prescription for leprosy (Morton, 1958).

Seeds are regarded as an aphrodisiac and useful in giddiness and vertigo and applied topically in liver complaints. The powder of seeds is made into a paste and tied over a boil to extract the pus. The powdered seeds mixed with cumin seeds and palm sugar are used in chronic diarrhoea and dysentery. The seed coat is a valuable remedy in diarrhoea and dysentery (Chopra *et al.*, 1958). D'Souza (1993) reported that seed is used for scorpion sting, bark decoction for bleeding from nose and excessive menstruation, and decoction of leaves for low grade fever.

#### Industrial uses

The bark contains about 7% tannin and often employed in tanning hides and in dyeing. Earlier, it was also used for making ink. The galls from the tree are also used for tanning. The tree also yields lac which is used in lacquers and varnish.

The wood is used in making furniture, paneling, wheels, axles, gears of mills, plough-knife, and handles of various tools. It is also used as fuel especially for brick-kilns. Its charcoal is used in making gunpowder.

In 1970s it was estimated that 3000 tons of tamarind seed powder is used annually in only the jute industry in India (Pruthi, 1976). Now the quantity has increased twofold. It is also used for dressing homemade blankets. The starch from the seeds is well adopted in the Indian textile industry as it is more efficient and economical and cheaper (₹ 22 per kg) than the cornstarch used for sizing and finishing cotton yarn and jute ([www.rajnco.com](http://www.rajnco.com)).

The seed oil is used as varnish preferred for painting dolls and idols. The oil is also considered palatable.

Tamarind leaves and flowers are used as a mordant in dyeing. A yellow dye is derived from the leaves to color wool. The foliage is used for mulching tobacco seedlings when young.

### **Innovative commercial production of tamarind**

In Annigeri, a village in Naval-gund taluka of district Dharwad in Karnataka, Abdul Khadar Nadakattin, an innovative farmer has established a tamarind grove in 16 acres of poor land with 1800 tamarind trees – the biggest plantation of tamarind trees. He has also constructed underground tanks to preserve the pulp of tamarind. The pulp preserved in such a manner had a long shelf life and could retain the original quality and flavor for a longer period. And for value addition he has started manufacturing pickles and jam from the raw fruit and markets his product as far as Hyderabad (Source: Honey Bee, 11(4) & 12(1):11–12; 2000–2001).

### **Discussion and conclusion**

In studying the distribution of tamarind it is observed that in tropical Central Africa, it grows in its natural state, while in India it is being grown and naturalized. Certainly, Sher Shah Suri might have noticed the apparent characters of the tree like extended dense crown, which provides shade and shelter, and the edible pulpy fruits. Therefore, he had planted the tamarind trees for travelers as

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an avenue on an ancient important old road presently known as Grand Trunk Road.

The tabulated and comparative analyses of the nutritive chemical compounds present in tamarind pulp and date (*khajur*) reveal that the energy, fat, and carbohydrates are more in date, while the contents of protein, minerals, calcium, carotene, and essential amino acids are more in tamarind pulp. Thus the Arabians rightly named the tamarind tree as ‘Date-palm from India’ and tamarind fruit as ‘Indian date’.

Further, it is believed that the Arabian traders introduced tamarind into India and presently the nativity of the plant has been proved to be the tropical Central African countries

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and Ethiopia is one among them. There are records that show that the Ethiopian navigators traded with India well before the Arabian traders. No doubt, the Arabians had set the trade of the tamarind pulp to the Arabian and European countries, which still exists today. In Malaya, tamarind is known as *Asam jawa*, referring either the plant or its use must have been brought from Assam.

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