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**Review Article**

# A BRIEF REVIEW ON ETHNOMEDICINAL VALUES OF SELECTED SACRED PLANTS IN INDIA

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**A R T I C L E I N F O**

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**A B S T R A C T**

The dependence of man on his environment is well understood since the beginning of our civilization. Early man's inquisitiveness about plants was necessitated by his inherent desire and instinct to seek food and medicine for his survival. Thus, plants played a vital role in the progress and evolution of civilization. In India, all the religions adore plants or make use of their parts in several ways to fulfil their socio-religious ceremonies. The traditional worship practices exhibit the symbiotic connection of human beings and nature. Ancient scriptures like *Rigveda*, *Yajurveda*, *Samaveda* and *Atharvaveda* also implicates the importance of worshipping of plants and trees as a part of Indian tradition since 1500 BC. Sacred trees establish a principal portion of the ecological heritage of India. Apart from, there is credence that the plants which are holy or being worshipped have medicinal potential too. The scientific documentation of these sacred plant species having ethnomedicinal importance is essential for widening the horizon of research in this field. The present review is an attempt to give a brief description on the importance of certain plants mainly seen in India, which are having a significant role in rites and rituals dealing with cultural heritage, festivals and religious ceremonies standing from birth till death in Indian tradition along with a small enlightenment on their medicinal importance. The study attempts to bring out the rationale of their cultivation enlightening on the important role these plants in human life for their well-known ethnomedicinal values, rather than seeing their cultivation as a mere ritual practice. The study concludes that, the pinnacle of religious pursuit linked with plants having ethnomedicinal importance can upraise the conservation of biological resources and their sustainable use.



## INTRODUCTION

Vedic literature is perhaps the earliest written document on plant life. It has been recorded that plant life began to flourish on Earth three *yugas* ago, before the time of the *Devas*. Vedic scholars had deep insight and intuition by which they unravelled the hidden values and greatness of plants. They considered plants to be of divine origin and worshipped them as *Mother Goddess* by chanting verses in praise of them. The *Rigveda* signifies "*Brahma tat vanam*, *Brahma savrikshaasa*", where the term *Brahma* denotes as 'Divine Forest or Trees'.[1] *Brahma* is considered as the ultimate energy and sustainer of the Universe. Hence the ancient Indians worshipped plants or trees by chanting '*Oushadhisooktha*'.

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The term '*Vriksha*' was derived from the term '*Vishura*', means spreading in nature or widely distributed. According to Indian Mythology, the term '*Vishnu*' also denotes the same meaning; hence, it is believe that Lord *Vishnu* is omnipresent in the whole life system of our planet including plant life.

Plants have played an important role in human civilization and was connected with their culture since time immemorial. Human beings recognized their dependence on plants at the very beginning of their life on earth, primarily for food, shelter, medicine etc., at the same time plants were considered dear to Gods and hence planting them were considered as a ritual of worship.[2] According to Hindu scriptures, there is mention of the *Kalpa-vriksha* (*Adansonia digitata* L.) and *Chaitya-vriksha* (*Ficus religiosa* L.), indicating that the worship of the tree is an ancient Indian tradition.[3]In India, many trees are worshipped in the temple and are associated either with the village, temple or the deity. Later these trees

became the *Sthalavrikshas* - the sacred trees. All religions in India worship plants in their respective ways and promote the practice of plantation and conservation.[4]Hindu epics like *Ramayana* and *Mahabharatha* emphasised on preserving forests as a part of cultural heritage.[5]The Indian ethnic communities are very much concerned about the use of plants for every occasion from birth to death as part of their socio-cultural heritage. There is also a belief that the plants which are sacred to the Gods and Goddess, have the medicinal utilities and the power of relieving a person from the disease.

Ethnomedicine is concerned with the cultural interpretations of health, disease and illness and also addresses the health care seeking process and healing practices.[6]The indigenous knowledge of the use of plant resources for cure of various ailments, being used since time immemorial is still persisting among the Indian communities. Inspite of having such imperative traditional socio-religious value, literature regarding sacred plants and their ethnomedicinal uses by Indian communities are very scanty. Moreover, proper scientific study and documentation in this field is of utmost importance. The ethnomedicinal importance of these plants were cited in ancient vedic literature and ayurvedic classics and transmitted from generation to generation primarily through the *Gurukula vidyabhyasam*. But due to the modernization and influence of western culture, younger generations are less concerned on such belief systems and practices. Keeping all in view, an attempt has been made to study selected sacred plants used by different Indian communities focusing how such socio-cultural-religious beliefs and practices are contributing to ethnomedicinal significance.

## MATERIALS AND METHODS

The data for the present study were comprised from an extensive literature search from *Vedas*, *Puranas*, *Vrikshaayurveda*, Ayurvedic classics, Contemporary texts, Internet resources, Research papers and various publications.

## RESULTS AND DISCUSSION

### *Ashoka tree*

Botanical name: *Saraca asoca* (Roxb.) de Wilde
Family: Caesalpiniaceae
Common names: Ashoka tree (E); Asok, Asoka (H); Asokam (M); Asoka (T); Asoka, Gatasoka (S)
Description: It is a small evergreen tree (Fig. 1) about 5-8 m in height. The bark is with warty surface and dark brown to grey or almost black. Leaves are equally pinnate and 15-20 cm long; leaflets 6-1, oblong-lanceolate, glabrous and 7.5-20.5 x 1.3 cm. The flowers are orange or orange yellow and very fragrant and are borne in axillary corymbs. The pods are flat, oblong, woody and 7.5-25.0 x 3.8-5.0 cm. seeds are ellipsoid-oblong and compressed.
Distribution: It grows wild along streams or in shady evergreen forest up to an altitude of 750 m in Central and Eastern Himalayas as well as in the Khasi, Garo and Lushai hills; also planted sometimes near temples or for its medicinal use.
Sacred uses:The Asoka means deprived of grief, is one of the sacred trees of the Hindus. The tree is the symbol of love and is dedicated to *Kamadeva*, the Indian God of Love and its flowers are compared with the arrows of *Kamadeva*.[7]Like the *Agnus castus*, it is believed to have a certain charm in preserving chasity. As mentioned in Hindu mythology *Ramayana*, *Seetha* - the wife of *Rama*, when abducted by *Ravana* escapes from the caresses of the demon and finds refuge in a grove of *Ashokas*. It is also known to be associated with the *Buddha*. In the legend of *Buddha*, when *Maya* is conscious of having conceived the *Buddisattva*, she retires to a wood of *Ashoka* tree and sends them for her husband.
Parts used: The stem-bark, flowers and the seeds are used medicinally.
Systems of Medicine: Ayurveda, Folk, Homoeopathy, Siddha and Unani
Medicinal uses: The stem-bark of the plant is used to cure colic, dysentery, dyspepsia, piles and ulcers and is also used to cure the uterine problems, particularly the menorrhagia due to uterine fibroids, leucorrhoea and menstrual pain.[8]The plant flowers are used in diarrhoeal disorders, diabetes mellitus, as excellent uterine tonic and in syphilis. Besides, the seeds are considered diuretic and their powder is given in gravels and strangury. Its bark is adulterated with the bark of *Polyalthia longifolia* and the fruits are chewed as substitute of *Areca* fruits, which has a role in promoting the oral hygiene due to its antimicrobial activity.[9]The Experimental studies demonstrated its astringent, haemostatic refrigerent, alexiteric, anthelmintic, antibacterial, demulscent, diuretic, anti-estrogenic, anti-inflammatory, anti-implantation, antioxidant, anti-tumour, oxytocic, anti-progestational, CNS depressant, anti-cancer and antimicrobial activity.[10]

### *Bael tree*

Botanical name: *Aegle marmelos* (L.) Corr.
Family: Rutaceae
Common names: Bael tree, Bengal quince, Holy fruit tree, Indian Bael, Wood Apple (E); Bel, Sirphal (H); Koovalam, Koolakam, Mavilavu (M); Vilva, Vilvam (T); Bilva (S)
Description: This is a small or medium-sized deciduous and aromatic tree(Fig. 2) about10 m high with straight sharp, axillary and 2.5 cm long spines. Leaves are trifoliolate, petiole 2.5-6.0 cm long and terete; leaflets are ovate-lanceolate, lateral sessile, terminal long and acuminate, 5.0-10.0 x 2.5-6.0 cm, cuneate to obtuse at the base. The flowers are greenish-white, sweet scented and about 2.5 cm in diameter and are borne in axillary panicle; fruits are 5.0-10.0 cm across, globose, grey or greyish-yellow, hard with orange coloured sweet pulp. The seeds are numerous, oblong and compressed and are embedded in aromatic pulp; testa woolly and mucilaginous.
Distribution: The plant areseen commonly throughout India in dry hilly areas, gardens and along roadsides; also cultivated in various places.
Sacred uses: This plant is considered as one of the most sacred trees in India.It is generally cultivated near Lord *Shiva* temple and its leaves are used in worship of *Shiva*. It is also sacred to the *Parvati* and is the *Vilvarupra*, one of the *Patricas*, or nine forms of *Kali*. The cultivation and proper nurture of this plant is considered to give one long life and destruction of the plant is considered to be inauspicious.
Parts used: Fruit, seeds, flowers, leaves, bark and roots are used medicinally.
Systems of Medicine: Ayurveda, Folk, Homoeopathy, Tibetan and Unani

Medicinal uses: The ripe fruits are alterative, cooling, laxative and nutritive and are useful in habitual constipation, chronic dysentery and dyspepsia. The unripe fruits are used as antidiarrheal, astringent, demulcent, digestive and stomachic.[11]The seeds are considered as laxative. The flowers are antidiarrheal and antiemetic. The leaves are expectorant, febrifuge and the fresh ones are used in dropsy and also effective in treatment of bronchial asthma. The fresh leaf-extract is reported to reduce the period of convalescence in patients suffering from cholera or choleric diarrhoea. The leaf-juice is applied externally in abscess and ash of the leaves is to kill worms and injuries caused by animals.[12]The root-bark and stem-bark of the plant is used beneficially in intermittent fever, melancholia and palpitation of heart and in stomach pain. The pulp of its fresh fruits mixed with milk when administered with Cubeb powder acts as diuretic and astringent on the mucous membranes of the genital organs, therefore, useful in gonorrhoea. The different parts of the plant extract established to have pharmacological activities like anticonvulsant, antioxidant, antihyperglycemic, anxiolytic, antidepressant, antihistaminic, antimicrobial, hepato protective, analgesic, immuno modulatory, cardio protective and antithyroidactivity in various studies.[13]

***Banyan tree***

Botanical name: *Ficus benghalensis* L.
Family: Moraceae
Common names: Banyan tree (E); Bat, Bargad (H); Alamaram, Peraal, Vadavriksham (M); Aal, Ichchi, Peral (T); Nyagrodha, Vata (S)
Description: It is a large evergreen tree(Fig. 3) up to 30 m in height and extending laterally by sending down aerial roots. Aerial roots are many and sometimes develop into accessory trunks and assist the lateral spread of the tree indefinitely. The bark is light grey-white, smooth and about 1.25 cm in thickness. Leaves are coriaceous, 10.0-20.0 x 5.0-12.0 cm, ovate-elliptic with subcordate or round base. Male flowers are many near the mouth of the receptacle: sepals 4; hall flowers: perianth as in male and fertile flowers: perianth shorter than in male, style elongate; male and female flowers are in same receptacle. Fruits are sessile in pairs, puberulous, sub-globose, 1.3-2.0 cm across and red when ripe.
Distribution: These plants are seen throughout the plains and forest tracts of India; also planted in avenues for shades. Epiphytic when young and develops from seeds dropped by birds on walls or on other trees.
Sacred uses: According to Indian mythology, it is considered that, Lord *Brahma* was transformed into this tree and the God *Vishnu* was born under the shade of this tree. Polynesian mythology explains that, the shadows on the moon as the branches of a huge-banyan tree from which *Hin-i-aa-i-te-marama* (Hina - who stepped into the moon) took bark to make cloth for the gods. To place a piece of silver money under the Banyan trees is also customary. Hindu traditionis against cutting down of this tree due to its sacred nature.[14]Its dried twigs are also used as a *Samhidas* for producing sacred fire. The leaves are employed as one of the *Panch Pallava* or platters, and also for pouring libations. In the *Vratraj*, the women are ordered to worship this tree on *Jeshtshudh* 15$^{th}$ (May or June), to water it, to wind a thread round it, and to worship it with Indian marigold (*Tageteserecta*) flowers. They are further ordered to make *Pradakshanas* (to go round it a certain number of times, to praise it and to pray to it for the survival of their husbands and for the fulfilment of their wishes). They are told that by this worship by the tradition that *Savitri*, the wife of *Satyawan* got back her decreased husband through the adoration of this tree. They are also recommended to perform the thread ceremony of this tree and its marriage with the *Durva* grass (*Cynodon dactylon*).[15]
Parts used: Its seeds, latex, bark and the tender ends of the aerial roots are used medicinally.
Systems of Medicine: Ayurveda, Folk, Homoeopathy, Siddha, Tibetan and Unani
Medicinal uses: The seeds are used as cooling agent and tonic. Its leaves are applied as poultice to abscesses and tender leaves pasted with honey are considered beneficial in *raktapitta*.[16]The milky juice obtained from its branches is applied externally for pains, in rheumatism and lumbago, sores and ulcers and soles of the feet when cracked or inflamed. The latex of the plant is also used in toothache and after mixing with sesamum oil is applied on burns and is genital diseases. The root-fibers are used in gonorrhoea and the tender ends of hanging roots as antiemetic.[17]A paste of its roots is applied to scalp to grow long hair and for menorrhagia. An infusion of the bark is considered to be a good tonic, effective in diabetes dysentery, gonorrhoea and in male infertility. Its bark with black pepper is used in snakebites.[18]Aqueous extract of its bark and leaves is used as a depressant on uterine and cardiac muscle and also on cholinergic blocking of smooth and skeletal muscle. The fruit juice of this plant is often used as an aphrodisiac.This plant is reported to possess many useful pharmacological activities *viz*. anti-inflammatory, ant hyperglycemic, ant diabetic, anti-arthritic, antihyperlipidemic, hypocholesterolemic, analgesic, antibacterial, antifungal, larvicidal, anti-diarrheal, ant mutagenic, antioxidant, cytotoxic, hepatoprotective, ant allergic and immunostimulatory in experimental studies.[19]

***Betel pepper***

Botanical name: *Piper betle* L.
Family: Piperaceae
Common names: Betel, Betel leaf vine, Betel pepper (E); Pan, Tambuli (H); Kodinjali, Vettilakodi (M); Tambulam, Vettilai, Vettilaichurul (T); Tambula (S)
Description: It is a perennial dioecious creeper(Fig. 4)with woody and climbing stem, which climb by means of short adventitious root. Leaves are 10.0-20.0 cm long, broadly ovate, slightly cordate and often unequal at the base, shortly acuminate, glabrous and glacous on both sides and bright green or yellowish; petiole stout and 2.0-2.5 cm long. Male spikes are cylindrical and dense and female spikes are 2.5-5.0 cm long and pendulous. The fruits are rarely produced and often sunk in the fleshy spikes, forming nodule-like structures.
Distribution: A native of Malaysia now cultivated all over India except the dry north-western parts.
Sacred uses: The Hindus chew the betel leaves on many religious and festive occasions. Besides, its leaves are also offered to Lord *Vishnu* and other Gods in *puja*. In Assam, the leaves of this plant along with *Musa* species, *Alpinia nigra* or *Phyrynium capitatum*are tied in special manner with the nuts of *Areca catechu* and are used as offerings.[20]
Parts used: Its leaves and roots are used medicinally.
Systems of Medicine: Ayurveda, Folk, Siddha, Tibetan and Unani

Medicinal uses: Its fresh leaves are generally used for chewing in form of packets made with the addition of burnt lime, catechu and pieces of betel nut and tobacco. Those who can afford can also add cardamoms, nutmegs, cloves, camphor and other aromatics. They sweeten the breath, improve the voice and remove foetor of the mouth; also increases the salivary secretion. Hindu folk practitioners recommended betel leaves to chew early in the morning. A liquid extract may be used in catarrhal inflammation of throat, larynx and bronchitis in small doses; also in cough, dysponea and indigestion in children.[21]Its tender leaves are smeared with ghee or medicated oil and are applied as a dressing for blistered surfaces or inflamed areas of wounds. Syrup made of its leaves with spices is also given three times a day in small dosesin general debility and as aphrodisiac. An essential oil obtained from its leaves is used in respiratory disorders, catarrh and also an antiseptic. Its leaf juice helps in digestion, also used as cathartic, in the treatment of night-blindness, and also to relieve sinus congestion and to allay the thirst. The roots are used to produce sterility in women; also chewed by public to improve the voice. Besides, the tender stalks of its leaves are dipped in castor oil and are introduced into the rectum of children suffering from simple constipation and tympanities. Experimental studies have shown that it possess diverse biological and pharmacological effects, which includes antibacterial, antifungal, larvicidal, antiprotozal, anticaries, gastroprotective effects, free radical scavenging, antioxidant, anti-inflammatory hepatoprotective, immunomodulatory, antiulcer and chemopreventive activities.[22]

***Champak***

Botanical name: *Magnolia champaca* (L.) Baill. ex Pierre
Family: Magnoliaceae
Common names: Champak, Golden champa, Yellow champa (E); Campa, Champaka (H); Chempakam (M); Shenbagam (T); Champaka (S)
Description: It is a large and evergreen tree (Fig. 5) with dark grey bark. Leaves are 20.0-25.0 x 3.5-10.5 cm, acuminate, lanceolate, coriaceous, entire, glabrous, dark green and shining above. The flowers are pale-yellow with a strong odour, solitary, axillary, bracteates and 2.5-5.0 cm in diameter. The sepals and petals are 15-21. Stamens are numerous. The fruits are 5 to 10 cm long, ovoid or ellipsoid capsules, dark brown in colour. Seeds are 1 to 12 in number, brown rounded on the back with pink fleshy aril.
Distribution: The tree is found in the Eastern Himalayas, Northeast India and Western ghats. It is also cultivated in greater parts of India for its foliage and fragrant flowers.
Sacred uses: Its flowers are used by Hindus in religious ceremonies and are indispensable on certain rituals. Owing to its religious importance, this tree is often planted in the vicinity of the temples.
Parts used: Flowers, fruits, seeds, roots, root-bark and leaves are used medicinally.
Systems of Medicine: Ayurveda, Folk, Siddha, Tibetan and Unani
Medicinal uses: Its flowers are considered stimulant, antiseptic, tonic, stomachic, carminative, cooling and bitter and are used in dyspepsia, nausea and fever and also in gonorrhoea and renal problems.[23]Their decoction is used in flatulence. Flowers mixed with sesame oil are used externally in vertigo. The oil of the flowers is useful in cephalalgia, opthalmia and gout. The fruits of the plant are used in dyspepsia and renal diseases and are applied for healing cracks in feet.[24]Its seeds are also applied for healing cracks in feet. The dried roots and root-bark of the plant are known for their purgative and emmenagogue properties and are used to clear the bowels in menstruation troubles. Besides, the bark alone is diuretic, stimulant and febrifuge and is chewed with betel as stimulant.Its young leaves are contused and macerated in water and instilled into the eyes to clear the vision. These are also applied to indolent swellings. Leaves anointed with ghee and sprinkled over with cumin seed powder are placed round the head to relieve puerperal mania, delirium and maniacal excitement.[25]The juice of the leaves with honey is also given to relieve colic. The bark of the root is used as adulterant of Cinnamon. The plant possesspharmacological activities such as anti-diabetic, anti-microbial, anti-inflammatory, diuretic, anti-ulcer, analgesic, burn wound healing, anti-helmintholytic, Procognitive activity, anti-oxidant and some other activities proved in experimental studies.[26]

***Coconut tree***

Botanical name: *Cocos nucifera* L.
Family: Arecaceae
Common names: Coconut tree (E); Nariyal-ka-ped, Nariyal (H); Nalikeram, Thengu (M); Tenkaimaram (T); Narikela (S)
Description: This is a tall palm(Fig. 6) with a straight curved stem, marked by annular scares upto 12-24 m high. Leaves are 1.8-4.5 m long; leaflets equidistant, 60.0-90.0 cm long, linear-lanceolate, coriaceous and petioles 0.9-1.5 m long and stout. Spadix is 1.2-1.8 m long, stout, androgynous and simply panicled. Lower spathes are 60.0-90.0 cm long, oblong, hard and splitting lengthwise. Male flowers are unsymmetrical having small and valvate sepals and oblong, acute and valvate petals. Female flowers are with 2.5 cm long gloves broad bracteoles and round, concave and imbricate sepals and convolute, imbricated tipped petals. The fruits are20.0-30.0 cm long, trigonously obovid or subglobose and green or yellowish filled with a sweet somewhat milky fluid, called as coconut milk.
Distribution: It is chiefly cultivated in Kerala, Tamil Nadu and Karnataka; also found wild in south India up to 1000 m above sea level.
Sacred uses: The fruits of this plant are used as offerings to the God in Hindu traditions. Coconut day (the full moon in the month of August or *Bhadon ki Purnima*) is celebrated throughout India.[27]Its fruit nuts are broken into two halves in the start of all ceremonies (*Muhurat*) as an offering to Lord *Ganesha* to avoid inauspicious events and any hindrances in the start of a new venture. The dried kernels of the fruits are also sometimes cut into ornaments such as flowers or garlands and Hindu women on religious ceremonies wear these garlands. The coconuts are also offered by the higher classes of Hindu (*Brahmans*) to appease the sea on the coconut fair day and at the weddings of the bridegroom and bride carry the nuts in their hands.[28]
Parts used: The fruits, flowers, bark and the roots are used medicinally.
Systems of Medicine: Ayurveda, Folk, Siddha, Tibetan and Unani
Medicinal uses: Its fruits are known to possess aphrodisiac, cardiotonic, diuretic laxatie and sweet properties. The water of its unripe fruits is taken as cooling in thirst, fever and urinary

disorders. Its flowers possess astringent property and are used in diabetes, dysentery, leprosy, urinary discharges and in constipation.[29]The bark of the plant is good for the teeth and also used in scabies. The root is used as astringent, diuretic and in uterine diseases. Besides, the coconut oil is also used to promote the growth of the hairs; especially in alopecia and loss of hairs after fevers and debilitating diseases. Some uses of the plant were partially confirmed by previous studies demonstrating analgesic, antiarthritic, antibacterial, antipyretic, antihelminthic, antidiarrheal, and hypoglycemic activities. In addition, other properties such as antihypertensive, anti-inflammatory, antimicrobial, antioxidant, cardioprotective, antiseizure, cytotoxicity, hepatoprotective, vasodilation, nephroprotective, and anti-osteoporosis effects were also reported.[30]

***Conch grass***

Botanical name: *Cynodon dactylon* (L.) Pers.
Family: Poaceae
Common names: Bahama grass, Conch grass, Bermuda grass, Dog's Tooth grass, Dhub grass, Hariali grass (E); Dub, Durba (H); Balikaruka, Belikaruka, Karuka, Karukapullu (M); Arugampullu (T); Durva (S)
Description: It is a perennial and creeping herb(Fig. 7) with underground rhizomes. Culms are decumbent-ascending and nodes are glabrous. Leaves are linear-subulate and scabrid on the upper surface and the margin. Ligule is a minute, scarious, erose and ciliate rim. The sheaths are compressed, keeled and glabrous except hairy throat. Spikes are 2-4 and 1.5-3.0 x 0.1-0.2 cm. Spikelets are 0.2 x 0.1 cm. Lower glume is linear-lanceolate, acute, 1-nerved and 0.1 cm long. Upper glume is about 0.1 cm long. Lemmas are 3-nerved, dentate, marinate and ciliate on the keel in the upper half. Paleas are 2-keeled and 0.1-0.2 cm long. Stamens are 3. Grains are oblong and free within the glumes.
Distribution: It is found throughout India, even in mountain areas up to 2438 m in the Himalayas.
Sacred uses: It is considered as a sacred plant and its first reference is met in the *Atharvaveda*. In the *Atharvaveda* it is said, 'May *Darba*, which rose from the water of life which has a hundred roots and a hundred stems, efface a hundred of my sins and prolong my existence on earth for a hundred years. This elegant and most useful grass has a niche in the temple of Hindu religion, especially in worship of Lord *Ganesha*. This is used in many religious ceremonies, especially in *Satyanarayana pooja* and the *Hawan*.[31]
Parts used: Whole plant in the form of *panchanga*is used medicinally.
Systems of Medicine: Ayurveda, Folk, Homoeopathy, Tibetan and Unani
Medicinal uses: A decoction of its root is considered diuretic and is used in dropsy and in secondary syphilis and the infusion of the roots is used for stopping the bleeding from piles and crushed roots mixed with curds are used in chronic gleet.[32]Besides, the juice of plant is said to be astringent and is used externally to fresh cuts and wounds and internally as diuretic, it is used in dropsy and anasarca, hysteria, epilepsy, insanity, chronic diarrhoea and dysentery. This is also considered useful in catarrh and opthalmia and is used to stop nose bleedings. Previous studies showed that *Cynodondactylon* possessed central nervous, cardiovascular, antidiabetic, gastrointestinal, antioxidant, immunological, antiallergic, antiinflammatory, antipyretic, analgesic, anticancer, dermatological, diuretic, protective, antimicrobial, antiparasitic, insecticidal and repellent.[33]

***Flame of the Forest***

Botanical name: *Butea monosperma* (Lam.) Taub.
Family: Fabaceae
Common names: Bastard teak, Bengal kino tree, Flame of the Forest (E); Dhak, Palas (H); Brahmavriksham, Chamatha, Mukkappuyam, Plasu (M); Porasu (T), Palasha (S)
Description: It is a moderate sized deciduous tree(Fig. 8)up to 15 m high and1.5-1.8 m in girth. The bark is fibrous, bluish-grey or light brown and exuding a ruby red vitreous gum. Leaves are pinnately 3-foliate, large, unequal and 10.2-20.4 cm. The flowers are 38-5.0 cm long and orange-red and are fasicled on rigid axillary and terminal recemes. The pods are silvery-white and broad. Seeds are flat, elliptic, reddish-grey and 3.2 cm across.
Distribution: It is common throughout India up to 1219m from sea level, except in very arid parts.
Sacred uses: This tree is sacred to *Soma*, the moon; which is sacrificial and is frequently mentioned in the *Vedas*. Its flowers are offered to the Gods. It is sometimes represented as a sacred tree of Buddhists. The *Dhak* tree is supposed to be imbued with the immortalizing *Soma*, the beverage of the Gods. This tree is supposed to have sprung from the feather of a falcon imbued with the *Soma*.[34]The *palas* was much employed by the Hindus in religious ceremonies, particularly in one connected with the blessing of calves to ensure them proving good milers. The leaves of this plant are trifoliate, the middle leaf-let is supposed to represent *Vishnu*, the left *Brahma* and the right one *Shiva*; hence its worship is enjoined in *Chatrumas Mahatma*.
Its flowers are called *tesu* or *kesu*, yield a brilliant but fleeting yellow dye, which is frequently used in India, particularly during the *Holi* festival. Its leaves are used as platters on the occasion of the investiture of the sacred thread, when a particular part of the ceremony, called *Chewul*(when the barber removes last tuft of hairs from the head of the child to be invested), is performed. Its dried twigs under the designation of *Samhitas*, are used for the feeding of *homa*, or sacred fire, in the ceremony which goes under the name *navagrahas*, celebrated to secure the pacification of the nine planets on the occasion of *vasth shanti*, i.e., entrance into newly built house of one acquired from a *non-hindu*. Besides, the stems are used as stuff on the day of *Sodmunj*, a part of the thread ceremony.[35]
Parts used: The seeds, flowers, bark, roots and leaves are used medicinally.
Systems of Medicine: Ayurveda, Folk, Siddha, Tibetan and Unani
Medicinal uses: The seeds are anthelmintic, acrid, bitter, aperient and rubefacient and they are used in flatulence and piles. A decoction of seeds is given in gravel and paste of powdered seeds with lemon juice is applied in herpes and as a cure of ringworms and also for cooling effect. Fine powder of its seeds along with *Acorus calamus* rhizome or mixed with juice of *Cyperus rotundus* rhizomes is used as a cure for delirium.[36]The flowers are diuretic, depurative, astringent and aphrodisiac. These are used as emmenagogue and as poultice in orchitis and to reduce swellings in bruises and sprain also. A decoction of its flowers is given in diarrhoea and to puerperal

women. A lotion is prepared after distilling its flowers, which is used for some eye diseases. The flowers with leaves and roots of *Hygrophila auriculata* are given with milk in leucorrhoea and their juice is given to induce sterility in women. The bark is useful in tumours, bleeding piles and ulcers. The decoction of bark is used in cold, cough, fever, haematuria and menstrual disorders and in bloody diarrhoea. The gum is astringent and is used in diarrhoea and dysentery. Fresh gum is applied on ulcers and septic sore throat and an infusion of the gum is used as local application in leucorrhoea.[37]The gum-solution is applied to bruises, ring worms and erysipelatous inflammation. Its leaves are known to possess diuretic and aphrodisiac properties and are used to cure pimples, boils, tumours and haemorrhage. These are also given in flatulence, colic, worms and piles. The juice of its leaves is used in skin diseases and with cow's milk is used as slow sterilizer. The roots are used in night blindness and to cause temporary sterility in women. The root-bark is considered as aphrodisiac and is used in elephantiasis as analgesic and anthelmintic and is also applied in sprue, piles, ulcers, tumours and dropsy. Its boiled flowers are tied over abdomen in pain and swelling of kidney and to relieve urine and roots rubbed with water are dropped in nostrils in epilepsy fits. Previous studies showed that *Butea monosperma* possessed hepatoprotective, antifertility, antifilarial, anti-diabetic, antiviral, anthelmintic, anticonvulsant, antifungal, antimicrobial, antiestrogenic, anticancer, antiinflammatory, antioxidant, antiulcer, wound healing, anti-diarrhoeal, anti-implantation, antidopaminergic, antimycobacterial, osteogenic and osteoprotective activity.[38]

***Gigantic swallow wort***

Botanical name: *Calotropis gigantea* (L.) R. Br. ex Ait
Family: Asclepiadaceae
Common names: Crown Flower, Giant Calotrope, Swallow wort, Milkweed (E); Madar (H); Dinesam, Erikku, Erikkalachedi, Vellaerikku, Yerikku (M); Arkkam, Erukku (T); Arka (S)
Description: It is usually a shrub(Fig. 9), rarely small tree. Its young branches, inflorescences and underside of leaves are covered with soft, white, adpressed and woolly tomentum. Leaves are10.0-15.0 cm long, sessile orsub-sessile, obovate or obovate-oblong with cordate base. Flowers are purplish-lilac or white and are borne in axillary pedunculate - corymbs; corolla lobes spreading or reflexed. The follicles are 8.0-10.0 cm long, recurved and turgid. Seeds are numerous and broadly ovate.
Distribution: It is chiefly found in waste lands upto 1000 m on the Himalayas and extends from Punjab to South India and Assam.
Sacred uses: It is frequently mentioned in the vedic literature under the name *Arka*, alluding to its form of leaves which were used in sacrificial rites. Its flowers are used in the worship of God *Mahadeva* and God *Hanuman*. In Bengal, its flowers are carefully picked from the corolla and strung into the garlands, which are worn at certain religious ceremonies. In *Skanda Purana*, it is mentioned as the transformation of *Surya* (the Sun) and it is used in *Chaturmas Mahatma* performed in the narration of *Gallava Rishi*.[39]The leaves of this plant are used as *patri*, in the worship of *Ganapati*, *Haritalika* and *Pitchri*etc. The women also employ them in Shustipujan. When a Hindu is to marry third time, it is believed that the third wife will soon die-in order to avoid such a calamity, the man is first married to this tree, which is then cut down. This ceremony is believed to ensure the longevity of the fourth, but really the third wife whom he now marries. It is ordered in the *Shravan Mahatma*, to worship *Maruti* (the *Hanuman*), on every Saturday, with a garland of its flowers, which are then offered to him. Its twigs are also ordered to be used as the substitutes for tooth-brush in the *Smritsar Granth* and also employed as *Samhitas*, for the feeding of sacred fires (the *Havan*).
Parts used: Flowers, leaves, latex and root bark are used medicinally.
Systems of Medicine: Ayurveda, Folk, Homoeopathy, Siddha, Tibetan and Unani
Medicinal uses: The flowers of the plant are known to possess digestive and tonic properties and in powder form, used for treatment of common cold, cough asthma and indigestion. The leaves of the plant are roasted and are applied to painful joints or Swellings; and in powder form after boiling in sweet oil are applied in eczema, skin eruptions, ulcers and on wound and their tincture is given in intermittent fevers.[40]The latex, obtained from the plant is considered a violent purgative and gastro-intestinal irritant and is used for producing abortion and uterine contraction by simply by inserting a stick smeared with the latex into vagina of women. *Charaka*[41]recommends its root bark to be taken for piles and leaves to cover boils and *Sushruta*[42]mentions its use in earache, asthma and in dog bite. The root bark is diaphoretic, emetic and expectorant and is applied in elephantiasis and hydrocele in the form of paste. The floss of the plant is employed to adulterate Indian kapook (*Bombax ceiba*) and latex as an adulterant to Persian opium; also as an adulterant or substitute of Ipecac (*Cephaelis ipecacunha*). The plant is reported to have antimicrobial, antioxidant, analgesic, anti-pyretic, insecticidal, cytotoxic, hepatoprotective activities, purgative properties and wound healing activity.[43]

***Neem tree***

Botanical name: *Azadirachta indica* A. Juss.
Family: Meilaceae
Common names: Indian lilac, Margosa tree, Neem tree (E); Nim, Nimb (H), Ariyaveppu, Ayurveppu, Kaippanveppu, Nimbam, Veppu (M), Vepa (T), Nimba (S)
Description: It is a large tree(Fig. 10)up to 18 m high with almost a straight trunk. Leaves are imparipinnate, crowded at the ends of branches, 22.0-40.0 cm long and glabrous; leaflets are 5-15, opposite, sub opposite or alternate, lanceolate or ovate-lanceolate, acuminate, serrate or dentate and glabrous. The flowers are scented and are borne in numerous axillary panicles and pedicels, which are shorter than the leaves. The drupes are one seeded, oblong and greenish-yellow when ripe.
Distribution: The plant is commonly cultivated in various parts of India and also grows wild in Sub-Himalayan tract and forests of other areas.
Sacred uses: It is said that when nectar was being taken to heaven from the world below for the use of Gods, a few drops fell on the Neem. Hence, on New Year's Day of *Shak samvat*, Hindus eat its leaves in the hope that they will acquire freedom from diseases. The Hindus hold every portion of this tree assacredand it is used in many religious ceremonies. *Shitala*, the goddess of small pox is said to inhabit in this plant. When a person suffers from smallpox, the leaves of this tree are used in several ways to relieve his ailment. In the bright-half of the

month of *Chaitra* (March-April), which is known as *Navratra*, women worship the plant by offering flowers, vermillion and other fragrant objects.[44]Besides, among certain castes of the Hindus, the leaves of this tree are placed in the mouth as an emblem of grief returning from funerals.

Parts used: Fruits, seeds, flowers, twigs, bark and gum are used medicinally.

Systems of Medicine: Ayurveda, Folk, Homoeopathy, Tibetan and Unani

Medicinal uses: Its fruits are antiperiodic, antihelmintic, astringent, emollient, purgative in nature and these are used in piles and urinary diseases.[45]These are also used to cure rheumatic pains. The seeds are poisonous in large doses to man and some animals, producing gastro-intestinal irritation and severe purgation. The oil obtained from its seeds is considered antiseptic and is used in treatment of eczema and leprosy. The kernel oil known as oil of Margosa or Neem oil possesses antifertility, antifungal, antimicrobial and antiseptic properties and is useful in chronic skin diseases, leprosy and ulcers. Warm oil is used to get relief in ear, dental and gum troubles.[46]Hair oil containing neem oil is used to prevent baldness and greying of hairs. It is also stated that the neem oil is an effective oral abortifacient agent, but its effect decreases as the pregnancy advances. The flowers are stomachic, tonic and purgative. These are one of the constituents of indigenous drug, *Amber mezhugu* useful against rheumatism and its indigenous preparation with *Piper nigrum*is used as antihelminthic. The leaves are antifungal, antiperiodic, antiseptic and antiviral in nature and are applied in the form of poultice in boils, abscesses, adenitis, eczema and ulcers. A hot infusion of the leaves is used as anodyne for formatting brusies, sprains and swollen glands. The tender leaves with *Piper nigrum*are used for intestinal helminthiasis. The leaves are also used as one of the constituent for treatment of diabetic patients. Aqueous extract of the leaves along with the leaves of *Zizyphus mauritiana* is used against hair falling. The twigs are widely used as tooth brush for its antipyorrheal property and as also act as carminative and digestive. The bark is used in treatment of anorexia, colic, liver disorders, malaria, sprueandpyresis.[47]The sap from the stem-tip is beneficial inatonic dyspepsia, debility and skin diseases and also act as refrigerant, nutritive and tonic in nature. The ashes of the leaves are taken with water to remove urinary calculi and their extract to stop vomiting. The bark of the plant along with that of *Ficus bengaenesis*, *Ficus glomerata*, *Ficus religiosa*, *Thespesia populanea*, *Ficuslacor* constitutes '*Panchavalkala*' which is used for gargle in salivation, as a wash for ulcers and leucorrhoea.[48]Besides, the gum obtained from this plant is considered as proteolytic, demulcent, stimulant and tonic; which is used in catarrh and splenic enlargement. The plant in various studies reported to have pharmacological activities like anti-inflammatory, antimalarial, anti-bacterial, anti-allergic, antidermatic, antiulcer, antifungal, insecticidal, larvicidal activities.[49]

***Peepal tree***

Botanical name: *Ficus religiosa* L.

Family: Moraceae

Common names: Peepal tree, Pipul tree, Sacred fig tree (E); Pipar, Pippal, Pipli (H); Arayal, Arasu, Bodhivriksham, Thullal (M); Arasu (T); Ashwattha, Pippala (S)

Description: It is a large or medium-sized deciduous tree (Fig. 11) with spreading branches and about 10-12 m high. Bark is grey with brownish specks, smooth and 1.3 cm thick. Trunks are irregularly shaped. Leaves are alternate, 10.0-17.5 X 7.5-12.5 cm, broadly ovate or rotund, caudate and somewhat pendulous, upper surface glaucous, 5-7 veined and long petioled. Male flowers are very few and sessile: sepals 3, stamen 1 and filament short. Female and gall flowers: sepals 5, style short and lateral. Fruits are sessile in axillary pairs, depressed-globose, 1.3 cm across and dark purple when ripe.

Distribution: It is found in wild or cultivated throughout India; also as an avenue tree, or along road-sides. It is an important host-plant for the summer brood of lac insects and epiphytic when young.

Sacred uses: The *Peepal* tree is believed to be inhabited by the sacred triad, *Brahma*, *Vishnu* and *Maheshwara*. It is held in so much veneration that to cut a *Peepal* tree is looked upon as a great sin, second only to that of killing a *Brahmin*. Mythologically, Hindus are viewing it as the female to the Banyan tree. According to the *Valkhiya*, the marriage of the *Peepal* and *Tulasi*(*Ocimum sanctum*) is gone as a custom.He further remarked that it is the transformation of the Gods and Guru, and is termed as *Ashwattha*. It is specially worshiped on every Saturday of the month of *Shrawan*and on every*Somavati*; an every Monday on which a new moon falls.[50]The Hindu whoplants a *Peepal*tree does so by expecting that, he thereby affords shade to his fellow-creatures in this world and so after death, he will not be scorched by excessive heat in his journey to the kingdom of *Yama*. A good Hindu who on a journey sees a *Peepal* tree, take off his shoes and walks five times around the tree from right to left (*pradakshana*) as a worship to the plant. While doing so he repeats the verse 'the roots are *Brahma*, the bark *Vishnu*, the branches *Mahadeva'*. 'Hail to three, King of trees'. In its bark, it is believed to have presence of Goddess Ganga and the leaves are considered to beminor deities.[51]The spoons are made from its wood which are used to pour clarified butter on the sacred fire, vows are made to it. The plant is worshipped to get male offspring for pious women after performing *pradakshinam* around its trunk for 108 times under its shade. Besides, its bark along with the barks of *Ficus bengaenesis*, *Ficus glomerata*, *Thespesia populanea* and *Ficuslacor*pass by the name *Panchavalkala*.

Parts used: The fruits, seeds, leaves and bark are used medicinally.

Systems of Medicine: Ayurveda, Folk, Homoeopathy, Siddha, Tibetan and Unani

Medicinal uses: The bark of this plant is considered as an astringent and is used in treatment of gonorrhoea. Pulverised bark is applied externally on unhealthy ulcer and wounds to promote granulation and found very efficacious when rubbed with honey to apthous sores of children. The dried bark in powdered form is used in anal fistula and in the form of a paste used as an absorbent in inflammatory swellings.[52]Tender and fresh leaves are beneficial when used along with butter fat to cover the inflammatory ulcers. The oil medicated with its leaves is used as eardrops in earache. The leaves and its twigs are also considered as laxative. The fruits are mild laxative and digestive. Besides, its seeds are known for their laxative property and in powder form, these are given for three days during menses and to sterilize women if given for long time. Besides, various parts of the plant are used in otitis media,

suppurativa, mouth sores, atrophy, emaciation or cachexy, rheumatism, small pox, carbuncle, mucus in urine, spermatorrhoea, gravel, cholera and rinderpest. Previous pharmacological studies revealed that *Ficus religiosa* possessed antimicrobial, anti-parasitic, anti-Parkinson's, anticonvulsant, anti-amnesic, anticholinergic, antidiabetic, antiinflammatory, analgesic, cytotoxic, anti-ulcer, wound healing, antioxidant, anti-asthmatic, reproductive, hepato-, nephro-and dermato-protective effects.[53]

***Sacred basil***

Botanical name: *Ocimum tenuiiflorum* L.
Family: Lamiaceae
Common names: Holy basil, Sacred basil (E); Kalatulasi, Tulsi (H); Karuthathrithavu, Krishna tulasi, Tulasi (M); Nallathulasi, Tulsi (T), Tulasi (S)
Description: It is an erect and much branched herb(Fig. 12)with about 30-90 cm height and sometimes woody at the base. The stems and branches are clothed with soft hairs. Leaves are ovate or elliptic-oblong, entire or subserrate and hairy on both surfaces. The flowers are closely whorled in recemes. The bracts are not exceeding the calyx. Calyx is whorled in racemes. The bracts are not exceeding the calyx. Calyx is 2-lipped. Corolla is hardly longer than the calyx and pale purple. The nutlets are 4, dry, small, reddish brown, ellipsoid and smooth.
Distribution: It is cultivated throughout India; often runs wild.
Sacred uses: The plant is considered most sacred plant that's why it is grown in or near every Hindu house. *Brahmins* hold it sacred to the god *Krishna* and *Vishnu*. It is supposed that, it is the transformed form of nymph*Tulasi*, beloved of *Krishna* and for this reason near every Hindu house, it is cultivated in pots or on brick or earthen pillars with hollows at the tops in which soil is deposited. It is daily watered and worshipped by all family members. The beads are also made from the woody stem of the plant by Hindus and made into rosaries, which are used to count the number of recitations of their deity's name.
In *Vratkaumudi*, a ceremonly called the *tulasi laksh vrat*, is ordered to be performed, when a vow is made, which consists in offereing a *lac* of the leaves one by one to *Krishna*, the performer fasting till the ceremony is complete. *Nayavad*, another ceremonial sacrifice among the *Hindus*, consists in taking a brash dish containing some cooked food, and placing it before the God in a square (*Chauk*) previously marked out on the ground with the fingers dipped in water.[54]The worshipper then squats on a low stool and taking two leaves of the *tulasi* in his right hand he closes his eyes with his left, dips the leaves in water and throws one upon the food and the other, after five peculiar motions of the hand, on the God. In Assam, some *Ahoms*, *Khamtis* and *Khamyangs*living near Ahom villages, worship this plant on '*Kati Bihu*' festival and continue the offerings for a month. The leaves make one of the constituents of *Charnamrit* offered to Lord *Vishnu* in *Satyanarayankatha*. Besides, its leaves are also used in the funeral ceremonies of the Hindus.
Parts used: Whole plant is used medicinally.
Systems of Medicine: Ayurveda, Folk, Homoeopathy, Siddha and Unani
Medicinal uses: The whole plant is considered expectorant, diuretic, antiseptic and cardiac stimulant and its decoction is used in treatment of catarrh, cough and bronchitis.[55]The root-decoction is given in malarial fevers as a diaphoretic. The leaves are known as stimulant, diaphoretic and expectorant and are used again in catarrh and bronchitis, ringworm and other cutaneous diseases. The leaves of this plant are also known to possess antifertility and abortifacient activities and their infusion is used in gastric disorders of children and in hepatic infections. The juice of leaves is dropped into ear as a remedy in earache, also used as demulcent and in genito-urinary disorders.[56]Its flowers with honey, ginger and onion juice are used in cough as expectorant. The juice of the leaves with ginger is given in colic to children. The juice of the leaves, flower tops and tender roots is used as an antidote in snake poisoning. Its leaf-paste mixed with black pepper is used to cure toothache. Besides, an aqueous extract of its leaves 100 mg/kg is said to have anti-implantation and abortifacient actions. The plant is reported to have a variety of biological/pharmacological activities such as antibacterial, antiviral, antifungal, antiprotozoal, anti-malarial, anthelmentic, antidiarrhoeal, analgesic, antipyretic, anti-inflammatory, antiallergic, antihypertensive, cardioprotective, central nervous system (CNS) depressant, memory enhancer, antihypercholesterolaemic, hepatoprotective, antidiabetic, antiasthmatic, antithyroidic, antioxidant, anticancer, chemopreventive, radioprotective, immunomodulatory, antifertility, antiulcer, antiarthritic, adaptogenic/ antistress, anticataract, antileucodermal and anticoagulant activities.[57]

***Sweet flag***

Botanical name: *Acorus calamus* L.
Family: Araceae
Common names: Sweet flag, Sweet root (E); Bach, Gorbacc (H); Vayambu (M); Vasambu (T); Vacha (S)
Description: It is a semi-aquatic plant(Fig. 13)with underground stem and rootstocks. Leaves are bright green, acute, thickened in the middle with wavy margins and 0.9-1.8 cm long. Spathe is 15-75 cm long and spadix is 5.0-10.0 x 1.3-2.0 cm, obtuse and slightly curved. Sepals are as long as the ovary and scarious; anthers yellow. The fruits are turbinate and prismatic with pyramidal tips.
Distribution: This is found almost throughout India in marshy places, ascending in the Himalayas up to 1828 m in Sikkim.
Sacred uses: A necklace made of its rhizomes is worn around the neck of child to keep away evil spirits and leaves are kept under the bed for same purpose.
Parts used: Its rhizomatous rootstocks are used medicinally.
Systems of Medicine: Ayurveda, Folk, Siddha, Tibetan and Unani
Medicinal uses: In *Ayurveda*, its rootstocks are known to possess antihelmintic, bitter, carminative, diuretic, emetic, laxative and pungent properties and are used to improve appetite and in treatment of abdominal pains, inflammations, fevers, epilepsy, bronchitis, delirium, hysteria and dysentery; whereas in *Unani* system of medicine, its rootstocks are described as alexiteric, carminative, expectorant and laxative and are used for general weakness, stomatitis, leucoderma and kidney problems. An infusion of rootstocks of this plant is given in dyspepsia, flatulence and in loss of appetite; also in hysteria, neuralgia and as antispasmodic in tertiary fevers.[58]This is administered with liquorices in cough, fever, capillary bronchitis and colic. In cases of irritation of throat and cough, its rootstocks are simply chewed for copious salivation. Besides, these with *bhang* and *ajowain* in equal parts are used as a fumigation to get relieve in painful piles.

The plant possess a wide range of pharmacological activities such as sedative, CNS depressant, behavior modifying, anticonvulsant, acetylcholinesterase inhibitory, memory enhancing, anti-inflammatory, antioxidant, antispasmodic, cardiovascular, hypolipidemic, immunosuppressive, cytoprotective, antidiarrheal, antimicrobial, anthelmintic, insecticidal, adulticidal, diuretic, antioxidant, genotoxic, and mutagenic activities in past studies.[59]

***Utrasum-bead tree***

Botanical name: *Elaeocarpus sphaericus* (Gaertn.) K. Schum.
Family: Elaeocarpaceae
Common names: Utrasum-bead tree (E); Rudraki (H); Rudraksham (M); Ruttiratcam (T); Rudraksah (S)
Description: It is a large tree(Fig. 14) up to 18 m high and generally buttressed at the base. The bark is fairly smooth and greyish-brown outside with light reticulate fissured and white blotches. Leaves are lanceolate, obscurely serrulate, nearly glabrous and 7.5-15.0 x 2.5-5.0 cm. The flowers are white and are borne in compact drooping racemes. The drupes are about 1.2-2.5 cm across, globose, bluish-purple and succulent when ripe. The stones are 5-celled, strongly tubercled and are marked with as many longitudinal furrows as there are cells in the stone.
Distribution: It is found distributed in Bihar, Bengal, Assam, Central India and Mumbai; occasionally cultivated as an ornamental tree at other places.
Sacred uses: Its nuts are polished and made into rosaries and bracelets, which are worn by *Brahmins* and *Fakirs*. The beeds or *malas*of *Rudraksha* are also used in *japas*(repeated lip and mental chanting of sacred names or the *mantras)*. The garland of its nuts is used during chanting by old Buddhists devotees also.
Parts used: Fruits, stone and stem-bark are used medicinally.
Systems of Medicine: Ayurveda, Folk, Siddha and Unani
Medicinal uses: Its fruits are considered as sour, thermogenic, appetizer and sedative which are useful in coughs, neuralgia, bronchitis, cephalalgia, anorexia, manic conditions, neurologic conditions and vitiated conditions of *vata* and *kapha*.[60]Its fruit-stones are considered sweet, cooling emollient, cerebral sedative, expectorant, liver tonic and febrifuge and are also used in epileptic fits, manic conditions, melancholia, mental disorders, convulsions, insomnia, cephalalgia, hepatopathy, hypertension, bronchitis, fever and vitiated conditions of '*vata*' and '*kapha*'. Besides, an aqueous extract of its fruits is also said to be used as hypotensive, sedative, anticonvolusions, spasmolytic, choleretic, bronchodialatory and cardio-stimulant.[61] The nuts of *Elaeocarpus lanceifolius* and *Elaeocarpus tuberculatus* are also used in the same way as *Elaeocarpus sphaericus*. In the field of research, *rudraksha* has been found to possess various biological activities like anti-hypertensive, anti-depressant, anti-inflammatory, anti-microbial, analgesic, anti-diabetic and antioxidant activity.[62]

***White sandal tree***

Botanical name: *Santalum album* L.
Family: Santalaceae
Common names: Sandal, White sandal tree (E); Safedchandan, Santal (H); Chandanam (M); Sandanam, Selegam, Srigandam (T); Swetachandana, Chandana, Srikhandha (S)
Description: It is a small, evergreen, glabrous and semi-parasitic tree(Fig. 15) with slender branches attaining a height up to 18 m with dark grey or nearly black or reddish and rough bark. Sapwood is unscented and white but heartwood is scented and yellowish-brown or dark brown. Leaves are opposite, ovate or ovate-lanceolate, glabrous, 1.5-8.0 x 1.5-3.0 cm or larger and thin. The flowers are brownish purple, violet or straw-coloured, unscented and are borne in terminal and axillary paniculate cymes. The fruits are globose drupes, 1.2 cm across and purple black with hard ribbed endocarp. Seeds are ovoid or globose.
Distribution: occurs from Vindhya mountains southward, particularly in Karnataka and Tamil Nadu ascending up to 1200 m. These plants were also introduced in Madhya Pradesh, Orissa, Rajasthan and Utter Pradesh where it became naturalized.
Sacred uses: Hindus consider this plant sacred since the ancient times. A paste obtaining by rubbing its wood on a stone with little water is used for painting the body after bathing and is applied for making the *Shardana* or caste-marks of the natives. An emulsion of its wood is given as an offering to the Gods and incense made of the wood is burnt before them by the Hindus.[63]The Persis in their fire temples use large quantities of its wood. Rich people sometimes employ Sandal-wood for cremating their dead relatives, and all both rich and poor, add at least one piece of the wood to the funeral pile.
Parts used: The heartwood and sandal wood oil are used medicinally.
Systems of Medicine: Ayurveda, Folk, Homoeopathy, Tibetan and Unani
Medicinal uses: Its woods ground up with water into a paste that is applied to the temples in headache, fevers and local inflammations and to skin diseases to allay heat and pruritus and also used as diaphoretic.[64]A decoction of the wood mixed with that of dried ginger is used in haemorrhoids. Besides, the sandalwood oil is considered as cooling, diuretic, diaphoretic and expectorant. This is used in symptomatic treatment of dysuria, gonorrheal urethritis and cystitis. The oil mixed with its double quantity of mustard oil is used for pimples on the nose. The plant is also used in Unani medicines as germicide, blood purifier, antiseptic and fungicide.[65] An emulsion of its wood is used as a cooling application in erysipelas and prurigo. *Ilaj-ul-gurba* recommends a paste made of equal parts of sandal oil and borax with sufficient quantity of water as useful application in pityriasis versicolor and similar infections. Its oil is frequently adulterated by mixing Cedar wood oil or Castor oil in the market. Modern pharmacological studies have demonstrated a wide range of pharmacological activities ranging from antibacterial to anti-cancer.[66]

## CONCLUSION

Plants are the oldest creation of God on earth and the consciousness about them is as old as the human civilization itself. Man, when he was in his natural form of religion, rendered divine honour and worship to the plant. Tree or Plant worship was found in ancient societies all over India and continued to be an element of current tradition also. In one way or the other, many of plants are being worshipped and various religious ceremonies and rites are performed with the help of them. Such plants are considered as the sacred plants.
They also found to have the medicinal values and are used in the treatment of various disease conditions. As stated in *Ayurveda* - The traditional Indian system of medicine, there is no plant on earth without a medicinal virtue. After extensive

**Figures of Indian Sacred Plants**


review of literature on ethnomedicinal significance of selected Indian sacred plants, it was found that many evidences reported in *Vedas*, *Puranas*, *Vrikshaayurveda*,Ayurvedic classics and Contemporary texts along with their pharmacological basis on support of experimental studies have neither been explored, nor presented in a systemic manner. This treasure, if explored, can serve as a lead to researcher for the extensive study of Indian sacred plants and the diverse medicinal uses of them along with the necessity for their proper cultivation and conservation.

**Conflict of Interest**

The authors declare no conflict of interest.

**Abbreviations**

E: English name of the plant
H: Hindi name of the plant
M: Malayalam name of the plant
T: Tamil name of the plant
S: Sanskrit name of the plant

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