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Traditional uses of *Sthalavriksham* in and around Lord siva temple, Mayiladuthurai, southern India

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ABSTRACT

The tradition of associating trees with gods and goddesses in Tamilagam can be traced back to Sangam literature, which is full of references to more than a hundred plants that dominated the life of the ancient Tamils. The present study documented the Sthalavirkshas of 5 siva temples in and around Mayiladuthurai, Southern India, 5 plant species were recorded. These have been arranged by binomial name, vernacular name, family name with age of trees, ICBN norms and medicinal uses. The phenology of Sthalavrikshas was documented by interview and direct observation of plants. Medicinal information of Sthalavriksha had been gathered from the available literature. There are more references to plants with special significance. The Sthalavrikshas have played a vital role in the well-being of humanity. Tamil tradition and culture have successfully preserved biodiversity through the ages. The Sthalavrikshas are symbolic of a single genetic resource and play an important role in the conservation of biodiversity. The process of conserving economically, ecologically and medicinally important plants by declaring them as sacred also protected the genetic value of several plant species. Thus the preservation of Sthalavrikshas may also help in the conservation of local floral wealth.

Keywords: Sthalavirksham, Lord siva temple, Medicinal uses, Conservation, ethnomedical

1. INTRODUCTION

Sthalavrikshams in Temples indicate the importance given for plants and trees in those days. Every temple has one plant or tree as Sthalavriksham. While these are protected in some

temples, they are not seen in some. The need to know about them and protect them and what plant or tree a temple had as Sthalavriksham has been vividly described in a book that was released in Thanjavur recently.

The word “herb” has been derived from the Latin word, “*herba*” and an old French word “*herbe*”. Now days, herb refers to any part of the plant like fruit, seed, stem, bark, flower, leaf, stigma or a root, as well as a non-woody plant. Earlier, the term “herb” was only applied to non-woody plants, including those that come from trees and shrubs. These medicinal plants are also used as food, flavonoid, medicine or perfume and also in certain spiritual activities. Medicinal plants are essential natural resource which constitutes one of the potential sources of new products and bioactive compounds for drug development, (Jayakumar, 2017).

The use of plants as medicines predates written human history. Ethnobotany is recognized as an effective way to discover future medicines. In 2001, researchers identified 122 compounds used in modern medicine which were derived from "ethnomedical" plant sources; 80% of these have had an ethnomedical use identical or related to the current use of the active ingredients of the plant. Many of the medicines currently available to physicians have a long history of use as herbal remedies, including aspirin, digitalis, quinine, and opium, (Jayakumar, 2013a; Jayakumar, 2016a &b).

Plants have the ability to synthesize a wide variety of chemical compounds that are used to perform important biological functions, and to defend against attack from predators such as insects, fungi and herbivorous mammals. The use of plants as medicines predates written human history. Ethnobotany is recognized as an effective way to discover future medicines. (Fabricant and Farnsworth March 2001). All plants produce chemical compounds as part of their normal metabolic activities. These phytochemicals are divided into primary metabolites such as sugars and fats, which are found in all plants; and secondary metabolites compounds which are found in a smaller range of plants, serving a more specific function, (Meskin and Mark 2002).

Aegle marmelos (L.) tree is held sacred by hindus and offered in prayers of deities Lord Shiva and Parvati and thus the tree is also known by the name Shivaduma (The Tree of Shiva). It has tolerance to arid conditions (Chundawat, 1990) as well as high rainfall. Exploration undertaken in eastern Uttar Pradesh and adjoining urea of Bihar indicated wide range of variability in thorniness on stem, fruit shape, scull thickness and pulp characteristics. Promising lines in respect to high yield and quality fruits were identified (Rai et al., 1991).

Aegle marmelos is a spiritual, religious and medicinal plant, native of India and Bangladesh and spread throughout South East Asia. The fruit takes about 10 to 11 months to ripen. Wood Apple is a sweet, aromatic and astringent in nature. Bel has many benefits and uses such as to cure tuberculosis, hepatitis, dysentery, constipation, peptic ulcer, piles and many more, useful in worm infestation and stomach related problems. Bael or *Aegle marmelos* is also known as Bengal quince, golden apple, Japanese bitter orange, stone apple, etc. It is also known by various names such as Wood apple, Kaitha, Maredu Pandu, Vilam Palam, Belada Hannu, Koovalam, Kothu, Koth Bel, etc. It's one of the few Ayurvedic plants whose entire parts from root to leaves are used for different diseases. The fruit balances Kaph and Vata doshas, its roots improve digestion, leaves are good for pain, stem for heart and bel flower's for curing of diarrhea.

Azadirachta indica is a medicinal plant is native to India and the Indian subcontinent including Nepal, Pakistan, Bangladesh, and Sri Lanka. And typically is grown in tropical and semi-tropical regions. The fruits, leaves, and seeds are used for producing neem oil. In India, the products of neem tree are being used for medicinal applications ever since ancient times.

Siddha and ayurvedic practitioner in India believed that neem tree is a having lot of medicinal values like antifungal, antidiabetic, antibacterial, antiviral, contraceptive and seductive applications. Need products are considered as an essential component of treatment in Ayurvedic, Siddha medicine, and Unani treatment. It is also having medicinal values for the treatment of various kinds of skin diseases. Neem oil is used for improving hair health, functioning of the liver, blood purification, and maintaining balanced sugar level.

Terminalia bellerica is native to India and grows throughout the country especially in lower hill areas. The plant grows up to 60-80 feet height. The trunk is straight and dark brown in colour. The leaves are broad, oval and 4-8 inches long. Leaves are crowded towards the end of the branch and tips are pointed. The flowers grow in both upper and lower part. The upper flowers are male and lower flowers are bisexual. When the fruit dries, it looks like a pentagon and is fibrous. In Sanskrit, it is called as 'Vibheeta,' which actually means the one which takes away the fear of disease.

Couroupita guianensis (Aubl) belongs to family called Lecythidaceae, could be a massive deciduous tropical tree 90' tall and Amazon timberland. It's full-grown in Indian gardens as a decorative tree for its enticing flowers. It's unremarkably referred to as "cannon ball tree" in English, "kailaspati" in Hindi (Satayavati et al., 1976) and Mallikarjuna flowers in Telugu. In Tamil Naidu, it's referred to as Naglingam flower owing to Sivalingam form is visible at the center of the flower and snake designed spore is that the specialty of this flower and it's excellent essential oil. So far in depth researches are done on this plant, suggesting that *Couroupita guianensis* has varied medical specialty actions and chemical composition. In recent times there are several reports of medical specialty roles and activities of *Couroupita guianensis* and its active principals on the nervous system, antipyretic, immunomodulatory, etc.

Nyctanthes arbor-tristis is a night Jasmine blooms profusely, flowers are opening at night and casting off in the morning thus making a carpet of flowers, which are used in Buddhist temples, for worship. *Nyctanthes arbor-tristis*, appears in several Hindu religious stories and is often related to the Kalpavriksha. According to mythology, this heavenly tree was brought to earth by Krishna. Satyabhama and Rukmini, Krishna's wives, had a quarrel over this tree. But Krishna planted the tree in Satyabhama's courtyard in a way that when the tree flowered, the flowers fell in Rukmini's courtyard.

Night Jasmine is very useful in treating constipation in children. Coral jasmine is used in the treatment of fungal skin infection, dry cough, and bronchitis and as an antidote for snakebites. It is also used to treat anxiety, restlessness, headaches, gastritis, hepatitis, diarrhea, vertigo and dysmenorrhoea.

1. 2. Objectives of the study

- ✓ The study of biological description of Lord Siva temple Sthalavriksham
- ✓ The study of medicinal value of traditional healers in and around Mayiladuthurai, Tamil Nadu.

2. MATERIALS AND METHODS

The present documentation of medicinal flora of lord siva temples in and around Mayiladuthurai, Nagapattinam District, Tamil Nadu, India

2. 1. Geography of Tamil Nadu

Tamil Nadu is the eleventh largest state in India and covers an area of 130,058 square kilometres (50,216 sq mi). The bordering states are Kerala to the west, Karnataka to the northwest, Andhra Pradesh to the north, and the Bay of Bengal to the east. The southernmost tip of the Indian Peninsula is located in Tamil Nadu. At this point is the town of Kanyakumari which is the meeting point of the Arabian Sea, the Bay of Bengal, and the Indian Ocean.

2. 2. Climate

The climate of the state ranges from dry sub-humid to semi-arid. The state has distinct periods of rainfall, which are the advancing monsoon period, South West monsoon (from June to September) with strong southwest winds, the North East monsoon (from October to December), with dominant northeast winds, and the Dry season (from January to May). The normal annual rainfall of the state is about 945 mm (37.2 in), of which 48% is through the North East monsoon, and 32% through the South West monsoon.

2. 3. Plant Collection

The five medicinal plants were collected from various Lord Siva Temples of in and around Mayiladuthurai, Nagappattinam district, Tamil Nadu, India, during the month of January, 2018.

2. 3. 1. Amritaghateswarar Abhirami Temple – (Velvam - *Aegle marmelos*)

(Velvam - *Aegle marmelos* – Table 1) - is a Hindu temple dedicated to Shiva in his manifestation as "Destroyer of Death" and his wife Parvati as Abhirami. It is located in Thirukkadaiyur (Thirukadavur), 21 km East of Mayiladuthurai, Nagappattinam district, Tamil Nadu, India.

2. 3. 2. Vaitheeswaran Koil or Pullirukkuvelur – (Vembu -*Azadirachta indica*)

Vembu -*Azadirachta indica* - Table 1 - is a Hindu temple dedicated to the god Shiva located in Tamil Nadu, India. Shiva is worshipped as Vaitheeswaran or the "God of healing" and it is believed that prayers to Vaitheeswaran can cure diseases. It is one of the nine Navagraha temples associated with the planet Mars (Angaraka). It is located 7 kilometers from Sirkazhi, 235 kilometers from Chennai, 27 km from Chidambaram, 110 km from Thanjavur and 16 km from Mayiladuthurai. Vaitheeswaran Koil is also called Thirupullirukku Velur.

2. 3. 3. Marga Sahayeswarar Temple - (Thandrikkai – *Terminalia bellarica*)

Thandrikkai – *Terminalia bellarica* - Table 2 - is dedicated to Hindu God Shiva located at Moovalur Village in Nagapattinam District of Tamilnadu. It is believed that it was built in the early 10th century. This Place is also called as Punnaagavanam. This place is Avathara Sthalam for Namashivaya Moorthigal, Muthal Kuravar of Thiruvaduthurai Adheenam.

2. 3. 4. Alanduraiappar Sivan Temple – (Nagalingam - *Couroupita guianensis*)

Nagalingam - *Couroupita guianensis* Table 2 - Mannampandal is a Village in Mayiladuthurai Block in Nagapattinam District of Tamil Nadu State, India. It is located 47 KM

towards North from District headquarters Nagapattinam. 6 KM from Mayiladuthurai Rural. 263 KM from State capital Chennai.

2. 3. 5. Punukeeswarar Temple – (Pavazhamalli - *Nyctanthes arbor-tristis*)

(Pavazhamalli - *Nyctanthes arbor-tristis* - Table 3) - is dedicated to Hindu God Shiva located at Mayiladuthurai Town in Nagapattinam District of Tamil Nadu. This temple is situated in “Koorainadu” in the western part of Mayuram. This is named after Punugu siddar who got moksha here. During the marriages, the brides wear a saree called “Koorai saree” (Koorai means clothe). In olden days such Sarees were woven only in Koorainadu and this is the reason behind the name “Koorai saree”.

2. 4. Taxonomic studies

2. 4. 1. *Aegle marmelos*

Kingdom: Plantae

Class: Angiosperms

Sub-class: Eudicots

Order: Sapindales

Family: Rutaceae

Genus: *Aegle*

Species: *marmelos*

The bark is pale brown or grayish, smooth or finely fissured and flaking, armed with long straight spines, 1.2-2.5 cm singly or in pairs, often with slimy sap oozing out from cut parts. The gum is also described as a clear, gummy sap, resembling gum arabic, which exudes from wounded branches and hangs down in long strands, becoming gradually solid. It is sweet at first taste and then irritating to the throat.

The leaf is trifoliate, alternate, each leaflet 5-14 × 2-6 cm, ovate with tapering or pointed tip and rounded base, untoothed or with shallow rounded teeth. Young leaves are pale green or pinkish, finely hairy while mature leaves are dark green and completely smooth. Each leaf has 4-12 pairs of side veins which are joined at margin. The end leaflet features a long stalk, 0.503 cm while side stalks are typically shorter than 0.2 cm.

The flowers are 1.5 to 2 cm, pale green or yellowish, sweetly scented, bisexual, in short drooping unbranched clusters at the end of twigs and leaf axils. They usually appear with young leaves. The calyx is flat with 4(5) small teeth. The four or five petals of 608 mm overlap in the bud. Many stamens have short filaments and pale brown, short style anthers. The ovary is bright green with inconspicuous disc.

The bael fruit typically has a diameter of between 5 and 12cm. It is globose or slightly pear-shaped with a thick, hard rind and does not split upon ripening. The woody shell is smooth and green, gray until it is fully ripe when it turns yellow. Inside are 8 to 15 or 20 sections filled with aromatic orange pulp, each section with 6 (8) to 10 (15) flattened-oblong seeds each about 1cm long, bearing woolly hairs and each enclosed in a sac of adhesive, transparent mucilage that solidifies on drying. The exact number of seeds varies in different publications.

2. 4. 2. *Azadirachta indica*

Kingdom: Plantae

Class: Angiosperms

Sub-class: Eudicots

Order: Sapindales

Family: Meliaceae

Genus: *Azadirachta*

Species: *indica*

Neem is a fast-growing tree that can reach a height of 15-20 metres (49-66 ft), and rarely 35-40 metres (115-131 ft). It is evergreen, but in severe drought it may shed most of its leaves or nearly all leaves. The branches are wide and spreading. The fairly dense crown is roundish and may reach a diameter of 15-20 metres (49-66 ft) in old, free-standing specimens.

The opposite, pinnate leaves are 20-40 centimetres (7.9-15.7 in) long, with 20 to 31 medium to dark green leaflets about 3-8 centimetres (1.2-3.1 in) long. The terminal leaflet often is missing. The petioles are short.

The (white and fragrant) flowers are arranged in more-or-less drooping axillary panicles which are up to 25 centimetres (9.8 in) long. The inflorescences, which branch up to the third degree, bear from 150 to 250 flowers. An individual flower is 5-6 millimetres (0.20-0.24 in) long and 8-11 millimetres (0.31-0.43 in) wide. Protrandous, bisexual flowers and male flowers exist on the same individual tree. The fruit is a smooth (glabrous), olive-like drupe which varies in shape from elongate oval to nearly roundish, and when ripe is 1.4-2.8 centimetres (0.55-1.10 in) by 1.0-1.5 centimetres (0.39-0.59 in). The fruit skin (exocarp) is thin and the bitter-sweet pulp (mesocarp) is yellowish-white and very fibrous. The mesocarp is 0.3-0.5 centimetres (0.12-0.20 in) thick. The white, hard inner shell (endocarp) of the fruit encloses one, rarely two, or three, elongated seeds (kernels) having a brown seed coat.

2. 4. 3. *Terminalia bellirica*

Kingdom: Plantae

Class: Angiosperms

Sub-class: Eudicots

Order: Myrtales

Family: Combretaceae

Genus: *Terminalia*

Species: *bellirica*

Terminalia bellirica is a large deciduous tree to 50 m tall and a diameter of 3 m with a rounded crown. The frequently buttressed bole at the base is branchless up to 20 m. The bark is bluish or ashy-grey covered with numerous fine longitudinal cracks, the inner bark yellowish.

Leaves large, glabrous, alternate, broadly elliptic to obovate-elliptical, 4-24 cm × 2-11 cm, base rounded to cuneate, rufous-sericeous but soon glabrescent, with 6-9 pairs of secondary veins. Secondary and tertiary venation prominent on both surfaces, clustered towards the ends of branchlets. Petiole 2.5-9 cm long. Young leaves copper-red, soon becoming parrot green, then dark green.

Flowers solitary, small, 3-15 cm long, greenish white, simple, axillary spikes; calyx tube densely sericeous or tomentulose; flowers appear along with new leaves and have a strong honey-like smell. Fruit sub-globular to broadly ellipsoid, 2-4 × 1.8-2.2 cm, densely velutinous or sericeous, light-yellow, obscurely 5-angled and minutely brown tomentosa. The generic name 'Terminalia' comes from Latin word 'terminus' or 'terminalis' (ending), and refers to the habit of the leaves being crowded or borne on the tips of the shoots.

2. 4. 4. *Couroupita guianensis*

Kingdom: Plantae

Division: Magnoliophyta

Class: Magnoliopsida

Order: Lecythidales

Family: Lecythidaceae

Genus: *Couroupita*

Species: *guianensis* Aub.

Couroupita guianensis is a large evergreen tree growing to a height of 20 meters. Leaves are alternate, oblong-obovate, up to 20 centimeters long, entire to slightly serrate and hairy on the veins beneath. Inflorescence is racemose, arising from the trunk and other large branches. Flowers are reddish with a yellow tinge on the outside, fragrant, with stamens borne on a reddish-brown globose, 15 to 24 centimeters, with a woody capsule, and each containing 200 to 300 seeds. Pollination is done by bees and bats. The tree bears, also directly on the trunk and main branches, large globose woody fruits; they look like big rusty cannonballs hanging in clusters, like balls on a string.

The fruit contains small seeds in a white, unpleasant smelling edible jelly, which are exposed when the upper half of the fruit goes off like a cover. The long dangling fruity branches give the tree an unkempt appearance.

2. 4. 5. *Nyctanthes arbor-tristis*

Kingdom: Plantae

Order: Lamiales

Family: Verbenaceae

Genus: *Nyctanthes*

Species: *arbor-tristis*

Nyctanthes arbor-tristis Linn is a large shrub growing up to 10 m tall, with quadrangular branches and flaky grey rough bark. The leaves are rough, hairy, decussately opposite, simple, 6–12 cm long, 2 -6.5 cm broad with an entire margin. The flowers are arranged at the tips of branches terminally or in the axial of leaves and are often seen in clusters of 2-7 together. These are fragrant, sessile, with campanulate calyx and a 5-8 lobed white corolla with an orange-red center. Two stamens are inserted near the top of the corolla tube and stigma is obscurely bifid.

The petals are snowy white with dewdrops sitting on them and are used for worship. Fruits are flat, compressed, brown, heart shaped to round capsules with 2 sections each containing a single seed. Seeds are exalbuminous, testa are thick, outer layer of large transparent cells is heavily vascularized. Cotyledons are flat and radicle is inferior.

3. RESULTS AND DISCUSSION

The tree in a temple is called Sthala Viruksha. Tree is a useful one religiously, medically and also helpful to devotees to give its shade. The Sthalavriksha gives leaves and flowers. Each temple will have different virukshas (trees) according to the temple puranas and every viruksha is having a story. Traditionally, the Indian population has been worshipping rivers, lakes, mountains, trees and other natural resources. People of India have been living very closely with the Nature and thriving well on the natural resources.

Table 1. The Medicinal Importance of *Aegle marmelos*.

Leaves	The leaves are efficient to treat ulcers, abscess, backache, vomiting, cuts, weakness of heart, acute bronchitis, blood sugars, diarrhoea, dropsy, beri-beri, injuries caused by animals, etc. Juice prepared from leaf extract acts as laxative agent and is helpful for treating ophthalmic infections and asthamic complaints. Medicated oil prepared from leaves of the plant not only helps to prevent cold, cough and other respiratory ailments but is also a good hair tonic when mixed with cumin seeds and massaged on the scalp. Leaves are also used as a veterinary medicine for wound and fodder for animals and stimulation of denervated nictitating membrane in anaesthetized cats.
Root bark	Root bark is used in remission of intermittent fevers fever, fish poison, remedy for heart palpitation and melancholia. Bark juice, mixed with cumin in milk, increases seminal fluid volume. Alcoholic root extracts cure hypoglycemia. It is also used in dog bite, gastric troubles, heart disorders, anti amoebic, rheumatism.
Flower	The flower is used as tonic for stomach, intestine, anti-dysenteric, anti- diabetic, diaphoretic and local anesthetic. As expectorant it is used to cure epilepsy.

Fruit	Eaten during diarrhea, dysentery and convalescence. It act as a mild astringency. Dry powder mixed with mustard oil is used to treat burn cases. Fruits are used in diarrhea, dysentery, gastric troubles, constipation, laxative, tonic, digestive, brain and heart tonic, ulcer, intestinal parasites, gonorrhoea, epilepsy. Fresh fruit extracts lower blood pressure. Fine powder of unripe fruit can be an alternative medicine to cure intestinal parasites, like <i>Entamoeba histolitica</i> , <i>Ascaris lumbricoides</i> .
Seed	Seed and seed oil exhibit antibacterial effect against <i>Vibrio cholera</i> , <i>Staphylococcus aureus</i> and <i>Escherichia coli</i> . Essential oil also exhibit antifungal activity against <i>Physallospora tucumanensis</i> , <i>Eratocystis paradoxa</i> , <i>Sclerotium raffsii</i> , <i>Curvularia lunata</i> , <i>helminthosporium sacchari</i> .

Table 2. The Medicinal Importance of *Azadirachta indica*.

Leaf	Leprosy, eye problem, epistaxis, intestinal worms, anorexia, biliousness, skin ulcers.
Bark	Analgesic, alternative and curative of fever.
Flower	Bile suppression, elimination of intestinal worms and phlegm.
Fruit	Relieves piles, intestinal worms, urinary disorder, epistaxis, phlegm, eye problem, diabetes, wounds and leprosy.
Twig	Relieves cough, asthma, piles, phantom tumour, intestinal worms, spermatorrhoea, obstinate urinary disorder, diabetes.
Gum	Effective against skin diseases like ring worms, scabies, wounds and ulcers. Seed pulp Leprosy and intestinal worms.
Oil	Leprosy and intestinal worms.

Table 3. The Medicinal Importance of *Terminalia bellirica*

Leaves	The leaves are a source of tannins
Bark	The bark is used as astringent, purgative and diuretic, and to treat diarrhoea, piles, leprosy, fever, ophthalmia and dropsy. The bark is used for making a dye.

Fruits	The fruit chewed is believed to cure cough, cold, asthma and hoarse voice. The paste of the fruit is applied to the swollen skin. <i>Terminalia bellerica</i> is helpful to stop bleeding. The fruit of <i>bellarica</i> is believed to cure bronchitis. It is beneficial in curing any digestive problem. This has been proved beneficial against jaundice, leprosy and anemia. It is also used as spice and pickle. It is useful against cardiac problems, diabetes and urinary disorder. It also cures flatulence, colic pain and parasitic infection and heart disease. It regularizes body temperature and cures dyspepsia when eaten with betel nut. It is prescribed for the treatment of liver and gastrointestinal track. It also shows various antimicrobial and anti-parasitic activities. The tonic is good for brain and stomach.
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Table 4. The Medicinal Importance of *Couropita guianensis*

Leaves	Skin diseases, stomach ache, and enteral gas formation, antithrombotic and vasodilatory actions.
Flowers	Hemorrhage, piles, scabies, dysentery, scorpion poison.
Fruits	Skin infections.

Table 5. The Medicinal Importance of *Nyctanthes arbor-tristis* Linn

Leaves	Antibacterial, Anthelmintic, Anti-inflammatory, Hepatoprotective, Immunopotential, Anti-pyretic, Antioxidant and Anti-fungal. Parijat leaves have been used in Ayurvedic medicine and Homoeopathy for sciatica, arthritis, fevers, and as a laxative. Patients with gynecological problems are advised to take 3 fresh night jasmine leaves, with 5 black peppers. leaves are also blend into a paste and used in skin related troubles, especially ringworm. The leaf juice is mixed with common salt to treat intestinal worms.
Barks	Anti-microbial.
Stem	Antipyretic and Antioxidant.
Fruits	Diuretic, Anti-bilious, Antioxidant, Anti-inflammatory, Sedative and Anti-filarial. The decoction of night jasmine flowers is used in treating gout

Seeds	Antibacterial, Antifungal, Immunomodulatory and Antileishmanial. The seeds are crushed and the aqueous paste is applied externally on the piles. They are also useful in treating baldness, scurvy and affections of the scalp. The decoction of its seeds is used as a hair tonic. Washing hair daily with this tonic helps to get rid of dandruff and lice.
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India it is cultivated in a limited way in the tropical and subtropical Mediterra - near region. It is widely used medicinal plant by tribals throughout India and popular in various indigenous system of medicine like Unani, Ayurveda and Homoeopathy. Traditionally the five *sthalavriksham* plant has been used in the treatment of various diseases.

3. 1. Traditional Uses of *Aegle marmelos* (L.) Corr.

This plant is native to India with its abundance in Himalayan tract, Bengal, Central and South India. Most of the parts of the tree like root, stem, bark, leaf, flowers and fruit at every have medicine related advantages at every maturing stage (Maity, 2009). It is the tree of medium size that grows all over the forests of India at an altitude of 1200 meters. The peel of the fruit is made up of harder shell; color varies from green to brown depending upon the ripening. The yellow or orange eatable pulp appears like a boiled pumpkin which gives a slight sweet taste, is very fragrant and has pleasant flavor. There is surrounding of oily transparent mucilage around the seeds (Suvimol and Pranee, 2008). Various parts of this plant constitute variety of coumarins, alkaloids, sterols and essential oils. Different parts of this plant like leaves, fruit and seeds have hypoglycaemic, hypolipidemic and blood pressure lowering properties (Lmbole, 2010).

Green bael fruits are used for preparing preserves which is an important Ayurvedic medicinal product and generally prescribed for all types of digestive troubles. This fruit preserve was prepared by Kaushik et al. (2002). The fruit pulp converted into powder form after drying is used as febrifuge, antiscorbutic, stimulant and antipyretic (Patkar, 2012). The similar reported by the several of chemical constituents of *Carrisa carandas* fruits observed by Jayakumar and Muthuraman, 2018.

3. 2. Traditional Uses of *Azadirachta indica* A. Juss.

The Neem (*Azadirachta indica*) tree has for a very long time been a friend and protector of the Indian village. For ages Indians has trusted this tree to fortify their health and remedy scores of diseases. In addition, it has been used for protecting food and stored grains and as a fertilizer and natural pesticide for the fields.

Leaves: According to Ayurveda, Neem leaves help in the treatment of vatic disorders (neuro muscular pains). Neem leaves are also reported to remove toxins, purify blood and prevent damage caused by free radical in the body by neutralising them. Neem leaves are reported to be beneficial in eye disorders and insect bite poisons. It treats Vatik Disorders (neuro and muscular pains). Fruits: Neem fruits are bitter, purgative, antihemorrhoidal and anthelmintic in nature. Flowers: Neem flowers are used in vitiated conditions of pitta (balancing of the body heat) and kapha (cough formation). They are astringent, anthelmintic and non-toxic. Seeds: Neem seeds are also described as anthelminthic, antileprotic, antipoisonous and bitter in taste. Oil: Neem oil derived from crushing the seeds is antidermatonic, a powerful anthelmintic

and is bitter in taste. It has a wide spectrum of action and is highly medicinal in nature. Various parts of the neem tree have been used as traditional ayurvedic medicine in India from time immemorial, (Verma, 1976). The medicinal utilities have been described, especially for leaf, fruit and bark, (Thakur et al., 1981). Neem oil and the bark and leaf extracts have been therapeutically used as folk medicine to control leprosy, intestinal helminthiasis, respiratory disorders, constipation and also as a general health promoter. Its use for the treatment of rheumatism, chronic syphilitic sores and indolent ulcer has also been evident, (Kirtikar et al., 1975). Neem oil finds use to control various skin infections. Bark, leaf, root, flower and fruit together cure blood morbidity, biliary afflictions, itching, skin ulcers, burning sensations, (Mitral et al., 1963).

3. 3. Traditional Uses of *Terminalia bellerica* Roxb.

Fruits are laxative, astringent, anthelmintic and antipyretic; useful in hepatitis, bronchitis, asthma, dyspepsia, piles, diarrhoea, cough hoarseness of voice, eye diseases and scorpion-sting; used as a hair tonic. Decoction of the green fruit is used for cough. Pulp of the fruit is useful in dysenteric-diarrhoea, dropsy, piles and leprosy. Half ripe fruit is used as purgative. Kernel of the fruit is narcotic. Fruits are used in menstrual disorder in Khagrachari. Seed oil is used in rheumatism. Gum of the bark is demulcent and purgative. Arif Ullah Khan et al., (2010) describes the antisecretory and analgesic activities of the crude extract of *Terminalia bellerica*. The Anti diarrhoeal activity was performed using Castor oil induced diarrhoea, PGE2 induced entero pooling and gastrointestinal motility test (Bimlesh Kumar et al., 2010).

3. 4. Traditional Uses of *Couroupita guianensis*

The *Couroupita guianensis* tree possesses antibiotic, antifungal, antiseptic and analgesic qualities. The trees are used to cure colds and stomach aches. Juice made from the leaves is used to cure skin diseases, and shamans of South America have even used tree parts for treating malaria. The inside of the fruit can disinfect wounds and young leaves ease toothache.

The fruit pulp, bark and flowers area unit used for varied medicative applications. The pulp of the fruit of the cannon ball tree is rubbed on the infected skin of animal disease dog (Sanz et al., 2009). The within of the fruit will make clean wounds and young leaves cure odontalgia (Kumar et al., 2011). Leaves and flowers of *Couroupita guianensis* unit used for healthful applications like upset, tumors, pain and inflammatory processes (Sanz et al., 2009), cold and enteric gas formation (Elumalai et al., 2012). There are several other importance which have been described by other researchers such as Antibacterial (Sivakumar et al., 2015), Antimicrobial (Al-Dhabi et al., 2012), Antioxidant and antinociceptive (Pinheiro et al., 2010), Antimicrobial and wound healing (Umachigi et al., 2007), Anthelmintic and Antioxidant and skin fibroblast proliferation (Martinez et al., 2011; Regina and Uma Rajan, 2012), Antidepressant (Juvekar et al., 2009), Anti-inflammatory (Pinheiro et al., 2013), Antiulcer (Elumalai et al., 2012).

3. 5. Traditional Uses of *Nyctanthes arbor-tristi*

Leaves are bitter tonic, cholagogue, febrifuge, anti-inflammatory, antispasmodic, hypotensive, respiratory stimulant. Used for fevers, rheumatism, obstinate sciatica. The leaves and seeds contain iridoid glycosides; other constituents reported from the leaves are mannitol,

beta-amyrin, beta-sitosterol, hentriacontane, benzoic acid, astragalol, nicotiflorin, oleanolic acid, nyctanthic acid, friedelin and lupeol. The seeds contain a polysaccharide glucomannan.

Nyctanthes arbor-tristis are a potential source of natural antioxidants. Phytochemical screening of the ethanolic extract of the leaves and stems of *Nyctanthes arbor-tristis* revealed the presence of flavonoids, tannins, saponins, glycosides, alkaloids, steroids, and phenolic compounds. Phenolic compounds have been recognized as antioxidant agents, which act as free radical terminators, (Shahidi and Wanasundara, 1992) and have been known to show medicinal activity and exhibit physiological functions, (Sofowora, 1993).

In the similar reported by the various of chemical constituents of plant parts influence sensory quality, shelf life, utilization and value addition potentials. Information on chemical composition would not only help in reaping better benefits but also enable in application of sustainable preservation techniques. Many studies to explore the chemical composition of minor fruits are reported, Anonymous, 2003; Abu et al., 2011; Singh et al., 2013; Jayakumar, 2013a; Jayakumar, 2013b; Jayakumar et al., 2015a; Jayakumar et al., 2015b; Mandal et al., 1992; Jayakumar et al., 2015c; Jauaprakash et al., 2017.

4. CONCLUSION

The present study of sthalaviruksham in and around lord siva temple, Mayiladuthurai. Traditional medicinal value of sthalaviruksham plant. Sthala viruksham main motivation is to use the flowers, leaf for temple poojas. Bilva leaf for Shiva pooja and similarly every tree in the sthala will be used for pooja along with flowers. The significance of growing sthala viruksha is useful for various traditional medicinal uses like pimples, its paste is a good medicine and the sting of scorpion is cured when its ashes are applied on the place of bite, an anti-microbial agent and purifies the environment in and around Mayiladuthurai, traditional healers.

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PLATES

2.3.1. Amritaghateswarar Abhirami Temple – (Velvam - *Aegle marmelos*)



2.3.2. Vaitheeswaran Koil or Pullirukkuvelur – (Vembu -*Azadirachta indica*)



2.3.3. Marga Sahayeswarar Temple - (Thandrikkai – *Terminalia bellarica*)



2.3.4. Alanduraiappar Sivan Temple – (Nagalingam - *Couroupita guianensis*)



2.3.5. Punukeeswarar Temple – (Pavazhamalli - *Nyctanthes arbor-tristis*)

