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Ethnomedicinal and Conservation Perspective Study on Sacred Trees in Hindu Temples of Chennai District

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Abstract: Sacred plants are considered as the ecological and medicinal resources since they are vital part of Hindu religion, traditional therapy and cultural heritage. This ethnomedicinal and conservation study explore sacred plants that are present in 29 temples in Chennai District, Tamil Nadu. Field surveys and structured interviews were conducted by conversing with temple authorities, residents, priests, and traditional medical practitioners. 14 individual species which belong to 10 botanical families were documented. *Aegle marmelos, Mimusops elengi*, and *Prosopis cineraria* with their dual religious and therapeutic values were some of the dominant species. Ethnobotanical information has confirmed that these trees used in traditional medicine due to their medicinal properties such as anti-inflammatory, and antimicrobial actions. In addition, they are symbolically significant and highly revered by people. Conservation measures such as protective fencing and botanical information swere also documented. Temples remain custodians of sacred biodiversity in Tamil Nadu, thus highlighting the need for temple-integrated conservation that coexist spiritually and ecologically.

Keywords: Sacred Plant, Stahle -vrikshas, conservation, Ethnobotanical

1. Introduction

Practice of worshiping sacred trees in Temple sites demonstrate the relationship between the human and nature. These plants are called Sthala- vrikshas and revered not only for their spiritual value but also for their potent medicinal properties. Religious sites such as temples the play major role in biodiversity conservation of the plant species. Mythology and folklore often mark the sacred plants of the respective temples. Chidambaram, situated in the Cuddalore District, had its ancient name as ‘Thillaivanam’ which translates to 'the Thillai tree forest.' It falls under the family Euphorbiaceae with the botanical name Excoecaria agallocha. The Thillai Nadarajar Temple in Chidambaram has a sacred plant named Thillai. It reflects the deep relationship between human and plants within religious sites [1-2].

In India, traditional medicine relies heavily on natural source of medicinal plants, which are rich in secondary metabolites. They form the core of Ayurvedic and Unani systems along with Homeopathy. Plants such as Vilvam (bael) Tulsi (Holy Basil), Vembu (neem), Amla (Indian Gooseberry), and Peepal (Sacred Fig). Bamboo trees are renowned due to both their health benefits and rich mythological history. Enhanced healing is achieved with the help of these psychoactive and entheogenic plants that are blended into concoctions meant for facilitating alteration of consciousness in the indigenous cultures in order to address a myriad of physical, psychological, as well as spiritual needs [3-4].

The rising need for sacred plants, either for religious ceremonies or for traditional medicine, threatens their population which holds deep cultural and medicinal value. This scenario highlights the need for effective management and conservation approaches that would ensure these treasured assets are protected for the coming generations. These plants need to be protected in a way that balances their cultural importance and sustainable practices [5].

2. Methodology

2.1 Study Area

The field study was conducted in traditional Hindu temples within the Chennai District of Tamil Nadu State. Which is urbanizing quickly and witnessing

a steep increase in population, with a population density of approximately 26,000 individuals per square kilometre. The urban agglomeration area has expanded significantly from 40.74 km² in 1981 to 103.52 km² in 2011, which is likely to be 140.79 km² in the year 2051 in Chennai city and which is situated about N 12º 50' to N 13º 17' latitude and E 80º 10' to E 80º 20' longitude[6]. It shares its geographical boundaries with some adjacent districts. Tiruvallur District borders are in the west and northwest side and Kanchipuram District borders it in the southwest side. Chengalpattu District lies to the south of the district. On the east, Chennai has an opening to the Bay of Bengal, which provides the district with its characteristic coastland appearance. Field survey was conducted in and around the temples. Through submission of the letter, specific permission was obtained from the temple authorities because many of the temples are being managed by Hindu Religious and Charitable Endowments Department (HR&CE), Government of Tamil Nadu. A questionnaire was prepared based on the literature review and objectives framed for the present research work [7].

2.2 Survey Method

A questionnaire was cautiously framed to gather comprehensive data on the sacred trees that are being maintained inside and outside the temples of the target district. It sought to recognize the type of tree species, their religious meaning, and maintenance practices. Interviews were conducted with a diverse group of respondents, including residents, temple poojaris, and priests, who have first-hand information regarding the sacred trees found in particular temples. These individuals gave important insights into the cultural significance of the trees and the way they are incorporated into religious ceremonies and temple practices. Further, the survey involved interviews with local traditional medical practitioners to get ethnobotanical information. These practitioners provided insights into the cultural uses of the sacred plants, highlighting their medicinal values and the ways in which they have traditionally been used to cure diseases. The information also addressed the conservation of these plants, discussing efforts to safeguard and conserve sacred species within the temples and the general environment [8]. Scientific accuracy was assured by proper identification and authentication of the species, with specimens archived for future purposes. Published papers in the local language (Tamil) and scientific reports relevant to the study were referred to compare results and discuss the findings. Taxonomic identification based on flora and leaves was carried out to further confirm species used in the study [9-11].

3. Result and discussion

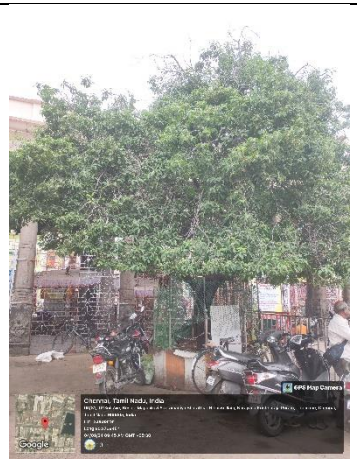
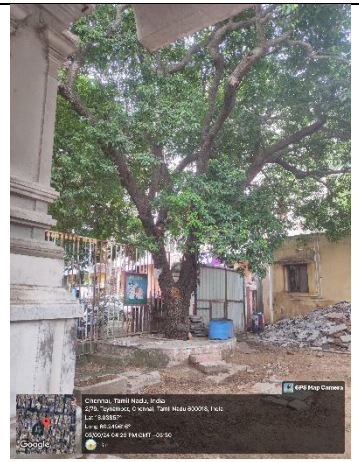
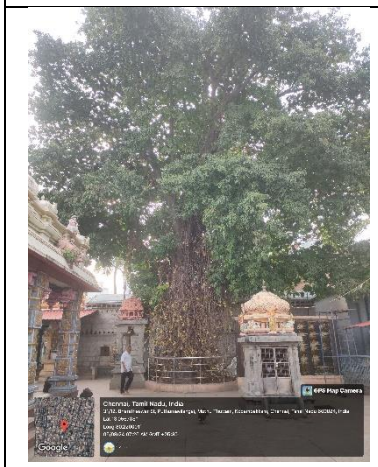
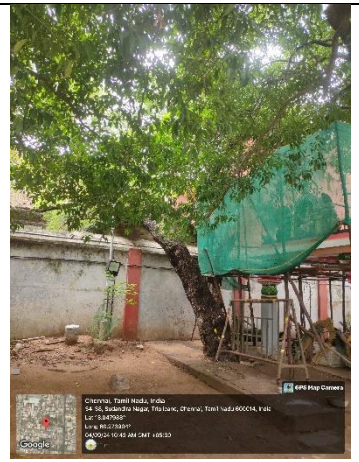
This research was centred on 29 temples in the Chennai district with the goal of recording the sacred trees that are traditionally preserved within and around temple grounds (Figure 1). But 4 temples were found to have no sacred tree. From this survey, 14 unique plant species were recorded, belonging to 10 botanical families. The diversity of the sacred plants in relation to the temples indicates conservation of ecology and preservation of culture.

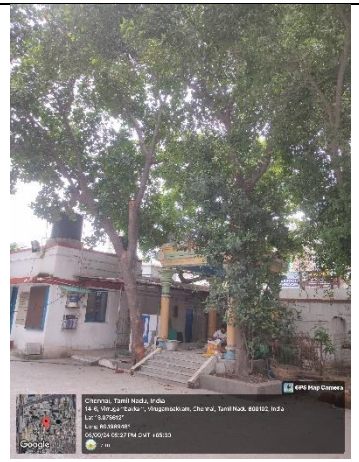
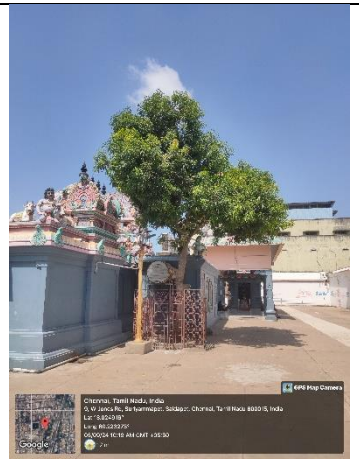
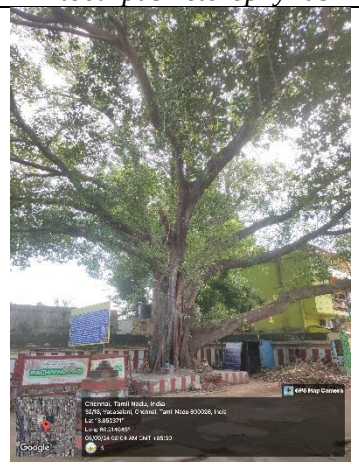
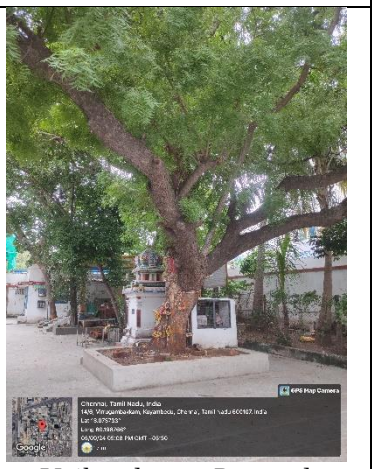
In the Chennai district, a total of 14 sacred plant species of 10 various families were found in 24 temples. Among them, the most commonly occurred species was *Aegle marmelos* belonging to the Rutaceae family, found in 7 temples, indicating its importance. *Mimusops elengi* (Sapotaceae) came next with 3 records, while *Artocarpus heterophyllus*, *Ficus religiosa, Ficus racemosa* (all belonging to Moraceae), and *Butea monosperma, Prosopis cineraria* (both belonging to Fabaceae) were each recorded from 2 temples. Other ritually significant species like *Couroupita guianensis, Acacia ferruginea, Magnolia champaca, Mangifera indica, Azadirachta indica, Stereospermum chelonoides*, and *Calophyllum inophyllum* were each present in one temple. Also, some other plant species were identified, but were present only in a single temple each, adding to the total botanical diversity noted in this study. Such holiness of different plants reflects about the different and unique cultural customs of various temples.

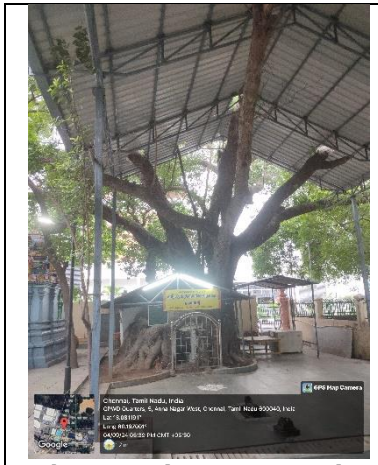
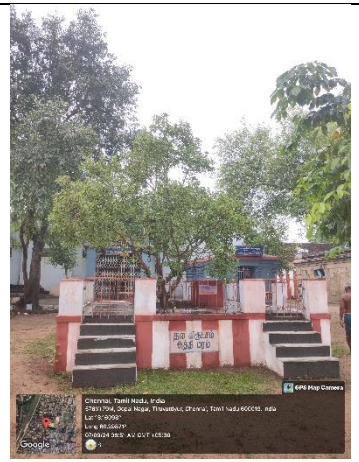
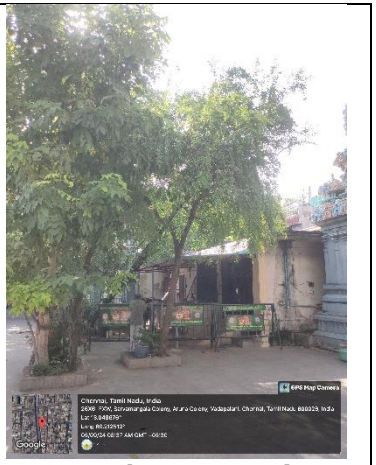
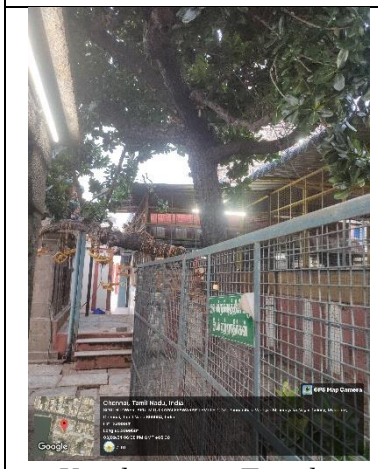
The study entailed carrying out in-depth interviews with indigenous practitioners of traditional medicine who have learned across generations the medicinal values of medicinal plants. The practitioners shared useful information regarding the ethnobotanical value of sacred plants, outlining their traditional uses in traditional medicine [12-13]. They described how these plants have been used in remedies for certain conditions, noting their medicinal values, such as anti-inflammatory, antimicrobial, or analgesic effects [14]. The practitioners also explained how such plants have been incorporated into the culture and tradition of the locals over time in order to manage a variety of diseases, ranging from simple colds to more complicated ailments (Table 1) [15-17].

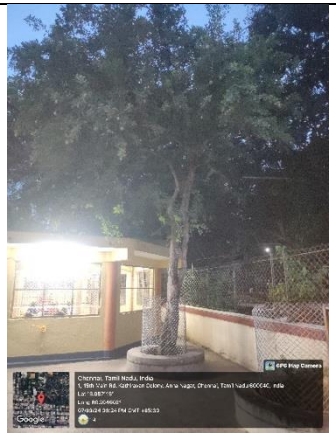
Within the temples covered in Chennai district, close observation of sacred tree status in the temples identified some important findings. There were 9 damaged but living sacred trees, representing partial survival likely due to age, weather, or human intervention. five temples featured newly planted sacred trees, showing attempts to revive traditional ways. Two of the trees were also damaged due to construction activity, illustrating the challenge of preserving greenery amidst urbanization.

Positively, fencing around the sacred trees was installed in 14 of the temples, showing efforts at protection by temple authorities. Seven temples had name boards, helping in public education and awareness of the importance of these trees. In seven temples, specific parts of the trees (such as leaves or fruits) were used in religious rituals, showing the continued spiritual utility of these species. However, four temples were found without any sacred trees, though none had failed to replace a lost tree, demonstrating a strong commitment to sacred tree conservation (Figure 2).

 Gangadeeswarar Temple, Purasawalkam, Chennai *Butea monosperma*	 Parthasarathy Swamy Temple, Triplicane, Chennai *Mimusops elengi*	 Balasubramanya Swamy Temple, Thenampettai *Mimusops elengi*	 Chennai Malleswarar Chenna Kesava Perumal Temple, Park Town, Chennai *Aegle marmelos*
 Bharathwajeswar Temple, Puliyur, Chennai *Couroupita guianensis*	 Kurungaleeshwarar Temple, Koyambedu, Chennai *Artocarpus heterophyllus*	 Theertha Paleeswarar Temple, Triplicane, Chennai *Acacia ferruginea*	 Marundheeswarar Temple, Thiruvanmiyur, Chennai *Prosopis cineraria*

 Soundreswarar Temple, Saidapet, Chennai *Prosopis cineraria*	 Vadapalani Andavar Temple, Vadapalani, Chennai *Ficus racemosa*	 Vaikundavasa Perumal Temple, Koyambedu, Chennai *Artocarpus heterophyllus*	 Tiruvetteswarar Temple, Triplicane, Chennai *Magnolia champaca*
 Somanathaswamy Temple, Kolathur, Chennai *Aegle marmelos*	 Karaneeswarar Temple, Saidapet, Chennai *Mangifera indica*	 Aathimoolaperumal Temple, Vadapalani, Chennai *Ficus religiosa*	 Vaikundavasa Perumal Temple, Koyambedu, Chennai, *Aegle marmelos* *Azadirachta indica*

 Thirumangaleeswarar Temple, Koyembedu, Chennai *Ficus religiosa*	 Thiruvallishwarar Temple, Padi, Chennai *Stereospermum chelonoides*	 Thiyagaraja Swamy Temple, Thiruvottiyur, Chennai *Ficus racemosa*	 Vengeshwarar Temple, Vadapalani, Chennai *Aegle marmelos*
 Kapaleeswarar Temple, Mylapore, Chennai *Calophyllum inophyllum*	 Mallikeswarar Temple, Muthialpet, Chennai *Aegle marmelos*	 Agatheeswara Swamy Temple, Villivakkam, Chennai *Aegle marmelos*	 Kalyana Varadaraja Perumal Temple, Thiruvottriyur, Chennai *Mimusops elengi*



Chandra Mouleeshwarar Temple, Anna Nagar, Chennai
Aegle marmelos

Kachaleeswarar Temple, Mannadi
Butea monosperma

Figure 1 Temple Sacred Plant Images and Temple Names.

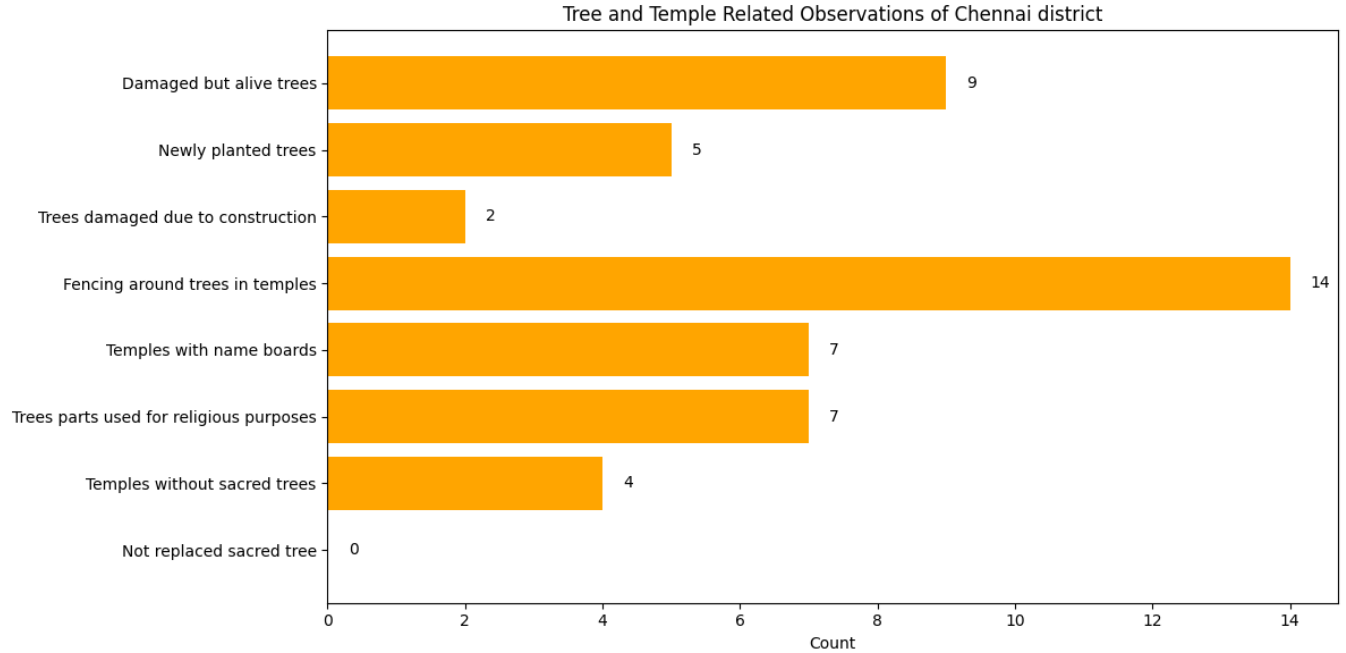


Figure 2 Status and Maintenance of Sacred Trees in Temple

Figure 3 Fallen branch parts of the *Prosopis cineraria* plant.

Table 1 Details of Sacred Trees and Ethnomedicinal Uses in Temples of Chennai District.

S. No	Name of the temple	Vernacular name	Botanical name and family	Traditional Medicinal Uses
1	Kachaleeswarar Temple, Mannadi	Purasamaram	*Butea monosperma* Lam. (Fabaceae)	Leaf extracts are astringent, diuretic, and treat diarrhea, diabetes, anthelmintic properties, and throat infections. Bark is for fever, cough, and breathing difficulties.
2	Mallikeswarar Temple, Muthialpet, Chennai	Vilvamaram	*Aegle marmelos Corrêa* (Rutaceae)	Leaf powder controls diabetes mellitus, and leaf extract treats jaundice. Root and bark decoction are used for fever and to regulate heart rate. Immature fruits cure digestive problems. The root is an ingredient in 'Thasamula,' an Ayurvedic medicine.
3	Balasubramanya Swamy Temple, Thenampettai	Mahilamaram	*Mimusops elengi* (Sapotaceae)	Flower powder treats headaches and flower extract is used as a lotion for wounds. The fruits are used to treat diarrhea. The bark is used to treat fever
4	Marundheeswarar Temple, Thiruvanmiyur, Chennai	Vannimaram	*Prosopis cineraria* (Fabaceae)	Leaf extract with ghee cures skin diseases. Bark decoction relieves throat pain. Flowers help reduce and control miscarriage
5	Kapaleeswarar Temple, Mylapore, Chennai	Punnaimaram	*Calophyllum inophyllum* (Calophyllaceae)	Bark decoction tightens muscles, while leaf extract treats eye swelling. Inhaling leaf powder alleviates cluster headaches, and flower decoction is used against STDs and tumors
6	Parthasarathy Swamy Temple, Triplicane, Chennai	Mahilamaram	*Mimusops elengi* (Sapotaceae)	Flower powder treats headaches and flower extract is used as a lotion for wounds. The fruits are used to treat diarrhea. The bark is used to treat fever
7	Theertha Paleeswarar Temple, Triplicane, Chennai	Vanni Maram	*Acacia ferruginea* (Fabaceae)	The stem bark is used to cure leucoderma, ulcers, piles, inflammation, worm infections, dysentery and diabetes.
8	Tiruvetteswarar Temple, Triplicane, Chennai	Senbagamaram	*Magnolia champaca* (Magnoliaceae)	The plant used to cure various disease including inflammation, tuberculosis, fever and skin disorders
9	Gangadeeswarar Temple, Purasawalkam, Chennai	Purasamaram	*Butea monosperma* (Fabaceae)	Leaf extracts are astringent, diuretic, and treat diarrhea, diabetes, anthelmintic properties, and throat infections. Bark is for fever, cough, and breathing difficulties.

10	Kurungaleeshwarar Temple, Koyambedu, Chennai	Palamaram	*Artocarpus heterophyllus* (Moraceae)	Uses include treating diarrhea, wounds, and ulcers. It is also effective for various skin diseases
11	Vaikundavasa Perumal Temple, Koyambedu, Chennai	Palamaram, Vilvamaram, Vepamaram.	1. *Artocarpus heterophyllus* (Moraceae) 2. *Aegle marmelos* (Rutaceae) 3. *Azadirachta indica* (Meliaceae)	1. Plant parts used to cure diarrhoea, wound healing, ulcer, skin diseases and pharmacologically used as anti-bacterial, anti-inflammatory, anti-diabetic, anti-funga 2. Leaf powder controls diabetes mellitus, and leaf extract treats jaundice. Root and bark decoction are used for fever and to regulate heart rate. Immature fruits cure digestive problems. The root is an ingredient in 'Thasamula,' an Ayurvedic medicine. 3. Bark decoction is a remedy for fever, vomiting, body weakness, and skin diseases. Leaves are used to remove stomach worms and treat jaundice. Flowers are used for stomach problems
12	Bharathwajeswar Temple, Puliyur, Chennai	Nagalingamaram	*Couroupita guianensis* (Lecythidaceae)	The plant used to treat various of disease including hemorrhage, piles, scabies, dysentery, scorpion stings, hypertension, tumors, malaria, inflammation, kidney and stomach issues, allergies, ulcers, toothaches and skin diseases.
13	Vadapalani Andavar Temple, Vadapalani, Chennai	Athimaram	*Ficus racemosa* (Moraceae)	Plant parts is used to cure the disease such as biliary disorders, jaundice, dysentery, diabetes, diarrhea and inflammatory conditions
14	Aathimoolaperumal Temple, Vadapalani, Chennai	Aarasamaram	*Ficus religiosa* (Moraceae)	Bark decoction is used for diabetes mellitus and as a tonic, astringent and diuretic; it also treats fever. Additionally, latex, seeds and fruits are used for joint pain and wounds. Heated leaves are used to cure vitiligo
15	Vengeshwarar Temple, Vadapalani, Chennai	Vilvamaram	*Aegle marmelos* (Rutaceae)	Leaf powder controls diabetes mellitus, and leaf extract treats jaundice. Root and bark decoction are used for fever and to regulate heart rate. Immature fruits cure digestive problems. The root is an ingredient in 'Thasamula,' an Ayurvedic medicine.
16	Soundreswarar Temple, Saidapet, Chennai	Vannimaram	*Prosopis cineraria* (Fabaceae)	Leaf extract with ghee cures skin diseases. Bark decoction relieves throat pain. Flowers help reduce and control miscarriage
17	Karaneeswarar Temple, Saidapet, Chennai	Mamaram	*Mangifera indica* (Anacardiaceae)	Leaf extract with milk, honey, and ghee treats bloody diarrhea; latex is for cracked heels. Young leaves control diabetes, and the fruits are nutrient-rich

18	Thiyagaraja Swamy Temple, Thiruvottiyur, Chennai	Athimaram	*Ficus racemosa* (Moraceae)	Plant parts is used in the treatment of biliary disorders, jaundice, dysentery, diabetes, diarrhea, and inflammatory conditions
19	Kalyana Varadaraja Perumal Temple, Thiruvottriyur, Chennai	Mahilamaram	*Mimusops elengi* (Sapotaceae)	Flower powder treats headaches and flower extract is used as a lotion for wounds. The fruits are used to treat diarrhea. The bark is used to treat fever
20	Somanathaswamy Temple, Kolathur, Chennai	Vilvamaram	*Aegle marmelos* (Rutaceae)	Leaf powder controls diabetes mellitus and leaf extract treats jaundice. Root and bark decoction are used for fever and to regulate heart rate. Immature fruits cure digestive problems. The root is an ingredient in **Thasamula** an Ayurvedic medicine.
21	Thiruvallishwarar Temple, Padi, Chennai	Pathirimaram	*Stereospermum chelonoides* Bignoniaceae	Leaf extract treats ear and tooth pain. Flowers serve as an aphrodisiac and tonic for men. Root decoction stimulates appetite, increases urination, reduces tumors and benefits heart health.
22	Agatheeswara Swamy Temple, Villivakkam, Chennai	Vilvamaram	*Aegle marmelos* (Rutaceae)	Leaf powder controls diabetes mellitus and leaf extract treats jaundice. Root and bark decoction are used for fever and to regulate heart rate. Immature fruits cure digestive problems. The root is an ingredient in **Thasamula** an Ayurvedic medicine.
23	Chandra Mouleeshwarar Temple, Anna Nagar, Chennai	Vilvamaram	*Aegle marmelos* (Rutaceae)	Leaf powder controls diabetes mellitus, and leaf extract treats jaundice. Root and bark decoction are used for fever and to regulate heart rate. Immature fruits cure digestive problems. The root is an ingredient in **Thasamula** an Ayurvedic medicine.
24	Thirumangaleeswarar Temple, Koyembedu, Chennai	Aarasamaram	*Ficus religiosa* (Moraceae)	Bark decoction is used for diabetes mellitus, astringent, diuretic and also treats fever. Additionally, latex, seeds and fruits are used for joint pain and wounds. Heated leaves are used to cure vitiligo
25	Chennai Malleswarar Chenna Kesava Perumal Temple, Park Town, Chennai	Vilvamaram	*Aegle marmelos* (Rutaceae)	Leaf powder controls diabetes mellitus and leaf extract treats jaundice. Root and bark decoction are used for fever and to regulate heart rate. Immature fruits cure digestive problems. The root is an ingredient in **Thasamula** an Ayurvedic medicine.

Three different religious plant species were present in the temple premises in the Vaikundavasa Perumal Temple, Koyambedu. They are *Artocarpus heterophyllus* (jackfruit tree), *Aegle marmelos* (bael tree), and *Azadirachta indica* (neem tree). Amazingly, both *Aegle marmelos* and *Azadirachta indica* were spotted nearby, entwined, their trunks locked, reflecting a special natural relationship. In the Soundareswarar Temple, situated in Saidapet, Chennai, however, the temple priests and authorities have gone out of their way to maintain another sacred plant, Prosopis cineraria (Khejri tree) (Figure 3). One of this sacred tree's branches, which was torn off by a recent cyclone, was picked up with great care and is now kept safe inside a glass enclosure within the temple grounds. This preservation of the broken branch is a show of respect towards consecrated trees in temple culture, where such trees tend to be viewed as symbols of divinity and religious importance. Conservation is facilitated such that despite natural occurrences such as cyclones, the sanctity of the tree is preserved so that the devotees may continue to worship the holy wood.

4. Conclusion

Most temple officials have been proactive in safeguarding sacred plants by building retaining walls to shelter them. They have also put up informative signboards close to the sacred plants to educate pilgrims about the religious importance of these sacred species and ensure respect and awareness while visiting them. The move is imperative, considering the intangible nature of sacred plants in health, healing, and heritage, which is deep. With conservation challenging in the face of rising demand, it becomes ever more essential to introduce practices that respect the spiritual and healing values of these plants. We not only retain biodiversity, by doing this, but also continue the rich legacy of tradition associated with these holy plants, leaving their inheritance in good standing for future generations.

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