



ETHNO-BOTANICAL SIGNIFICANCE OF HINDU HOLY PLANTS IN KANYAKUMARI DISTRICT, TAMILNADU, INDIA

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Abstract

Ethno-botanical studies carried out in Traditional and medicinal practices of the people in Western Ghats. During this study there are 44 plants belongs to 29 families and 42 genera were identified as medicinal plants were used to treat Blood sugar, Snake bites, Antibacterial, anti microbial, anti viral, Paralysis, Gastrointestinal disorders, Malaria, Head ache, regularize menstrual cycle, Asthma, Chronic ulcers and Antiseptic. The plant parts were used as decoction, powder is mainly used form of medicine in the study area. Plants part of leaves, stem, bark, seed oil, root, seed, flower and rhizome are also agreed by the ethno-botanical researches.

Key words: Ethno-botany, Medicinal plants, Western Ghats.

Introduction

Ethno-botanical studies range across space and time from archeological investigations of the role of plants in ancient civilizations. It comprises both wild and domesticated species and is rooted in observation, relationship, needs and traditional ways of such knowledge evolves over time, and is therefore always varying and adding new discoveries, cleverness and methods. Several plants be used to cure diseases and to sustain good health. According to Hindu religion, all the living forms are considered sacred in one way or other. But, some plants have special significance in the Hindu religion and the plants have lots of medicinal values along with religious importance.

Flowers are considered extremely important for many reasons in Hinduism. The main Hindu prayer writes are called *Puja*, which means “the flower act”. One of the most important flowers of Hindu is the lotus for its various associations. At the most basic level, it is linked with fertility youthfulness and beauty.

About 64% of world population depends on the traditional medicinal system. Approximately 800 plants

all over the world have been recognized for their ethno-medicinal importance in India about 2000 plants are used medicinal purpose for medicinal healers. The traditional knowledge on the herbal drug has been orally transmitted from one generation to a different generation.

In Bhagavad Gita, the Hindu holy book, instructs some flowers correspond to specific gods and should only be used for certain days or rituals. Special ceremonies such as weddings and funerals are also used some flowers and the plants as medicines have been practiced from an ancient time around 1500 B.C. Rig Veda is one of the important earliest documents which emphasizes about herbal medicinal knowledge. Later on Indian herbalists such as Maharshi Charaka and Sushruta worked in search of different herbal plant parts for different ailments of human body. Most of the plant's are use traditional and medicinal ways adopted by these scientists from the cultures of the Ancient World, having been used for over a thousand years as a textile and medicine in Arabia, Mesopotamia, Persia, Egypt, China, India and extensive areas of Europe (Kumari *et al.*, 2011).

Vedas state that the fruits from the base of the Food of Gods. Plant have a vital role in human wellbeing and are continuous to be valued industrial, economic,

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commercial and medicinal resources and some subcontinent with its wealth and variety of medicinal , many of which are even today in common use of much of which is steadily being eroded (Schulte, 1962).

Plant have played an important role in many world's mythologies and religion and have been given deep and sacred meanings throughout the ages. Man is using plant life in various ways since continuation of his life on the earth. The vethas, puranas and epics carry special references on the mythological plants. As a result of these mythological plants are worshiped and utilized as medicine, food, fodder, fiber, dyes etc and other useful purposes.

Ethno-botanist examine the culturally specific says that humans perceive and classify different kinds of plants. The things humans due to plants species such as destroying "weeds" or "domesticating" and planting specific kinds of food and medicinal plants. The way in which people used various plants would influence the human cultures. Modern ethno-botany is an interdisciplinary field drawing together scholars from anthropology, botany, archaeology, geography, medicine, linguistics, economics, landscape, architecture and pharmacology.

Ethno-botanical studies range across space and time from archeological investigations of the role of plants in ancient civilizations to the bioengineering of the new crops. Ethno-botanical knowledge in composes both wild and domesticated species and is rooted in observation, relationship, needs, and traditional ways of knowing such knowledge evolves over time, and is therefore always changing and adding new discoveries, ingenuity and methods.

Materials and Methods

Study area

The study area is located the region of Kanyakumari District temples particularly Thanumalayan temple, Nagaraja temple Nagercoil, Adikesava perumal temple Kanyakumari, Chitharal Jain monuments, Swamithope temple, Ayyappa temple Vettuvanni, Issakiamman temple Kollancodu, Bhagavathyamman temple Mandaikadu, Sudalaiamman temple Pacode, Bhalakrishnan temple Sarode, Issakiamman temple Manali, Murugan temple Munchirai, Maruthuvalmalai Kanyakumari and most of the sacred groves found in Vilavancode taluke were visited to collect the Hindu Holy Plants. In the district which mainly comprises of above mentioned temples, the community is generally engaged in traditional and medicinal values are identified.

Plant materials

A field study was carried out over a period of approximately one year. During this period, information about ethno-botanically important holy plants was collected. The plants were pressed in the pasture and arranged for classification. The name of plant families were listed in alphabetical order. Systematic names of plant species were acknowledged according to the International plant name index. In addition, the medicinal uses of these plants were compiled from the literature. We examined whether the vegetation used in had literature records or not. The information on medicinal plant, the knowledge was passed on from the ancestors was cross checked. Plants specimens were identified with the local and regional floras (Gamble 1956, Mathew 1995).

Interviews with local people

Interviews were made on the busy hours of the common areas (near the temple, myths, elderly people etc) visited by the citizens of Kanyakumari district and its neighboring areas. 50 persons above the age of 40 were interviewed. The experiences of the local people were recorded with a voice recorder during the interviews. The respondents of the questionnaire are in that local people. Mean age of the respondents was 60 years. A survey was administered to the local people, through face to face interviews.

During the interviews, demographic characteristics of the study participants, and local name, medicinally useful parts and utilization methods of the plants were recorded. The people who participated in the study were requested to indicate the plants they used.

During the survey of holy plants in the selected study pockets, objectives of the survey were explained to the local communities during social gatherings arranged by local people familiar with well known traditional health practitioners. Extraordinary emphasis was given in seeking out people who had the empirical knowledge on medicinal plants and experience in the use of traditional medicinal plants. Personally administered method was followed during the survey. Religious importance of the Hindu Holy Plants were referred in the Hindu texts like Vedas, Bhagavad Gita, Upanishad and Temple Poojaries, Myths and traditional believers were also interviewed.

Calculations of surveyed plants

The use value (Trotter and Logan 1986), a quantitative method that demonstrates the relative importance of species known locally, was also calculated according to the following formula:

$$UV=U/N,$$

where UV refers to the use value of a species; U to the number of citation per species and N to the number of informants.

Usage value is a criterion that is intensely used in ethnoreligious plant studies (Khatun *et al.*, 2011). It might be useful to know the usage value of wild nourishment plants (UV) in determining the food safety.

Relative frequency citation index (RFC) was done (Tardio and Pardo-de Santayana, 2008) by using the following formula:

$$\text{RFC} = \text{FC}/\text{N} \quad (0 < \text{RFC} < 1)$$

This index is obtained by dividing the number of informants mentioning a useful species FC or frequency of citation by the total number of informants in the survey (N). RFC value varies from 1 (when some people refers to a plant as a useful), to 1 (when all the informants mention it as useful). RFC index, which does not consider the use-category (UR or use-report is a single record for use of a plant mentioned by an individual).

Result and Discussion

During this study there are 44 belongs to 29 families and 42 genera were identified as medicinal plants. The study shows a high degree of ethno- botanical novelty and the use of plants in traditional culture. Plants are enumerated with plant species are given with the Botanical name; Family, Common name, Sanskrit name and the traditional and medicinal values are mentioned. Family wise distribution of medicinal plants shows that Moraceae, Poaceae and Fabaceae are the dominant families with 4 species, followed by Malvaceae 3 species, Lamiaceae Sapotaceae, Solanaceae and Anacardiaceae (2 species each) 21 families represented by single species. 8 species were used to treat cough and cold, 5 species were used to treat dysentery, tumors 2 species were used to treat diabetes, Jaundice and other species of 23 species were used to treat Blood sugar, Paralysis, Gastrointestinal disorders, Malaria, Head ache, regularize menstrual cycle Asthma, Chronic ulcers and Antiseptic.

The plant parts were used as decoction, powder is mainly used form of medicine in the study area. Plants part of leaves, stem, root, seed, flower and rhizome are also agreed by the ethno-botanical researches (Sivaperumal *et al.*, 2010), (Natarajan *et al.*, 2013). Internal and external application of the medicinal plants is cited in the earlier studies (Remya *et al.*, 2009). Plants like *Vetiveria zizanioides* are used to manage blood pressure. Local people utilize *Santalum album* as an anti-diuretic agents. *Azadirachta indica* the leaf is used to treating skin diseases to relieve intestinal worms

(Jeyaprakash *et al.*, 2011). The leaf paste of *Andrographis paniculata* is used to treat poisonous bites (Ayyanar 2005) (Kumari Subitha *et al.*, 2011). In this shows a high degree of ethno- botanical novelty and the use of plants among the people reflects the revival of interest in traditional folk culture.

Tree worshipping was also presented during the Vedic period (Bhatla *et al.*, 1984). In India, many religious festivals are celebrated by the people from Kashmir to Kanyakumari as India is known for its diversity like religion, customs, myths, languages, culture etc. On the basis of ancient scriptures, a wide variety of plants like *Ficus religiosa*, *Azadirachta indica*, *Ocimum tenuiflorum* etc. has divine qualities; therefore it was used in number of religious activities, and marriages and other ceremonies (Robinson *et al.*, 1997).

Aegle marmelos has been used as a herbal medicine for the management of diabetes mellitus in Ayurvedic, Unani and Siddha systems of medicine in India *Aegle marmelos* commonly known as “vilva “or “bael”, is highly valued plant for its characteristic aroma and medicinal value. The Bael tree is believed to be associated with Lord Shiva. This study *Aegle marmelos* are generally cultivated near to temples and cherishes this tree and it is sacrilege to cut it down. The tree is sacred to the trimurti (a representative of Shiva) and Parvati (wife of Lord Shiva). The leaves are used for sacred fire during Samidhas. Leaves and fruits are used in the worship of Lord Shiva. Flowers are useful in diarrhea, excessive thirst, vomiting and eye disorders and it is advisable as diet in eruptive boils (Parichha, 2004).

Azadirachta indica the whole plant is medicinal. The leaves of this tree are used in the treatment of person who suffers from smallpox. He is fanned by the leafy twigs of this tree. Furthermore, the leaves are used in several methods to lessen and relieve this disease. (Soejarto *et al.*, 2005).

This study found that *Azadirachta indica* is held sacred by the Hindus and used in many religious ceremonies. 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. Thus on New Year days of Shak Samvat, Hindus eat its leaves in the hopes that they will acquire freedom from disease.

(Kumari *et al.*, 2011) recorded Tulsi (*Ocimum tenuiflorum*) is the most holy plants growing in front of almost all Indian houses as an auspicious point of view or a symbol of peace and worshipped by women. They have such a strong association with Vaishnavas, that followers of Vishnu have long been called “those who bear the

Table 1:

Sl. No.	Plant Name	Family	Common Name	Sanskrit Name	Part Used	UV	RFC	Traditional/Medicinal value
1.	<i>Acorus calamus</i> L.	Acoraceae	Vasambu	Haimavati	Rhizome	0.04	0.88	Rhizome is used in ailments, dysentery and abdominal tumors.
2.	<i>Aegle marmelos</i> (Linn).	Rutaceae	Bael	Sripfla, Bilva.	Fruits, seeds, leaf, bark and roots.	0.12	1.42	Leaves and fruits are used in the worship of Lord Shiva. Decoction of stem, leaf and bark is used to intermittent of fever and gastric troubles.
3.	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Keerai	Rahadri	Stem and leaves.	0.04	1.04	Traditionally the plant is used antipyretic, laxative and diuretic. Leaf is used in diuretic and anemia. Root paste is used in menorrhoea, bronchitis, blood diseases, burning sensation, leprosy, and piles.
4.	<i>Anacardium occidentale</i> L.	Anacardiaceae	Koll-amavu	Agnikrita	Leaf, bark, root and fruits	0.05	0.07	Traditionally used snake bite, leprosy, dysentery and increase hair growth.
5.	<i>Andrographis paniculata</i> (Burm.f.) Nees	Acantaceae	Bitter weed	Bhumimba	Whole plant	0.1	1.34	Traditionally it is used to release body heat in fever. Sum total plant extract is useful for whooping cough and leprosy.
6.	<i>Areca catechu</i> L.	Arecaceae	Betal nut	Puga	Fruit	0.04	1.18	The inflorescence of Areca catechu is used in ceremonies on auspicious occasions like marriages. Nut grind with charcoal crush (3:1) used as tooth powder.
7.	<i>Azadirachta indica</i> L.	Meliaceae	Neem	Nimba	Seed, Seed oil, Bark and Leaf.	0.06	1.28	New Year days of Shak Sam vat, Hindus eat its leaves in the hopes that they will acquire freedom from disease.
8.	<i>Butea monosperma</i> (Lam.)	Fabaceae	Palas	Kinsuka, Palasa.	Root, leaf, flower, Seed oil and gum	0.04	1.14	The flowers are used for making a dye used during Holi and Rang panchmi. Leaf powder is given with honey to children for curing ring worm.
9.	<i>Calotropis procera</i> (Aiton)	Asclepiadaceae	Madar, Safed Aak	Ravi, Tapana	Leaf & Root Bark	0.12	1.34	Its leaves worship of Ganapati, Latex applied the wound after scorpion sting for pain relief.
10.	<i>Cannabis sativus</i> L.	Cannabaceae	Bhang, Ganja	Vijaya, Jaya	Leaf, Shoot and Seed.	0.08	1.18	Plants leaves with milk are used mahashivratri festival offered for Lord Shiva. Seeds and leaves are used to treat cancer and tumors.
11.	<i>Cedrus libani</i> Loud	Pinaceae	Cedar of Lebanon	Ars Libnan	Wood	0.04	1.06	In ancient Indian sages and their families devoted to Hindu God Shiva. The plant is used Various stomach ailments, cancer and Antiseptic.
12.	<i>Clitoria ternatea</i> Linn.	Fabaceae	Shank-pushpi	Aparajita	Roots, Seeds and Leaves.	0.06	1.3	The flower is used in religious ceremonies. It is also used in various diseases as folklore medicine. The root with honey as a general tonic to children for improving mental faculty.
13.	<i>Curcuma longa</i> L.	Zingiberaceae	Turmeric	Haridra	Rhizome	0.12	1.28	The root powder is used in Hindu religious occasions. Rhizome powder with boiled milk is taken during cough, cold and also used in healing injuries.

Table 1 Continued.....

Table 1 Continued.....

14.	<i>Cynodon dactylon</i> (L.) Pers.	Poa-ceae	Doob	Durva	Whole plant	0.04	1.04	The plant is worshipped on Durga Ashtami. Whole plant juice is effective against cobra bite.
15.	<i>Datura metal</i> L.	Solan-aceae	Uma-thu	Dhuttura kanaka	Leaves, Flowers, seeds and Roots	0.1	1.46	It is used in diarrhea, skin diseases, wounds painful menstruation and skin ulcers. Juice of leaves is used in asthma and chronic ulcers.
16.	<i>Ficus carica</i> L.	Mora-ceae	Anjeer	Vata	Bark, leaves.	0.08	1.3	In traditional medicine the root is used as a treatment of ringworms. The fruit's pulp helps in relieve pain and anti-inflammation, and it has been used to treat tumors and swelling.
17.	<i>Ficus benghalensis</i> L.	Mora-ceae	Bar, Bargad	Vata	Root and Bark.	0.06	1.22	It symbolizes Lord Shiva. The dry twigs of the tree are used as Samidhas for sacred fire. Leaf extort given by means of milk to both men and women as an aphrodisiac.
18.	<i>Ficus religiosa</i> L.	Mora-ceae	Peepal	Aswathma	Whole plant	0.06	1.16	The tree is sacred for Hindus. The tree is worshipped on every month on which a new moon falls. Bark paste applied to sores of children to get relief from apathies. Leaf bud is used in curing snake bite.
19.	<i>Guazuma ulmifolia</i> Lam	Malv-aceae	Rudrasam	Rudraksa	Wood, crushed seed and fruit	0.05	0.07	Treat blood cancer, kidney problem and venereal diseases.
20.	<i>Hierochloa odorata</i> (L)	Poa-ceae	sacred grass	Senehal	Leaves.	0.04	1.16	Religious ceremonies tribal people smoke of sweet grass to treat certain health diseases. Traditionally the plant is used to cures sore throats, cough, fever and venereal disease.
21.	<i>Hibiscusrosa-sinensis</i> L.	Malv-aceae	Shoe flower	Japayushpa	Leaf, flower and bark.	0.1	1.34	The flower is favorite for to goddess Kali. It is moreover worn for the reverence of Devi. The flower is used to grow hair, reduce dandruff and make the hair black and also regulate menstrual cycle.
22.	<i>Hordeum vulgare</i> L.	Poa-ceae	Barley	Shair	Fruit	0.04	1.18	The barley grain is used to make bread and wine preparation. The barley is used to cure chest pain, smallpox; headache, abdominal tumors and thirst.
23.	<i>Jasminum sambac</i> (L)	Olea-ceae	Jasmine	Malilika	Leaf, flower and root.	0.04	1.16	Flower is used in many religious occasions to Gods. The young leaves are used in making herbal infusions for curing gallstones and the roots are used to cure diabetes mellitus.
24.	<i>Leucas aspera</i> Spreng.	Lamia-ceae	Thumbai	Drona pushpin	Leaf, flower	0.04	1.14	Leaf juice is applied externally in chronic skin swelling. Flower and honey is used to give cough and cold.
25.	<i>Nelumbo nucifera</i> Gaertn.	Nelum-bona-ceae	Lotus	Turkish kamal	Leaf, rhizome seed and flower	0.06	1.04	Lotus is the symbol of purity and innocence. It is the seat of Goddess Saraswathi, Lakshmi. Lotus has several medicinal uses in Diarrhea, and homeostasis.
26.	<i>Madhuca longifolia</i>	Sapot-aceae	Ilupai	Madhuka	Leaves, flower, fruits	0.08	1.09	Bark is used to cure skin diseases.

Table 1 Continued.....

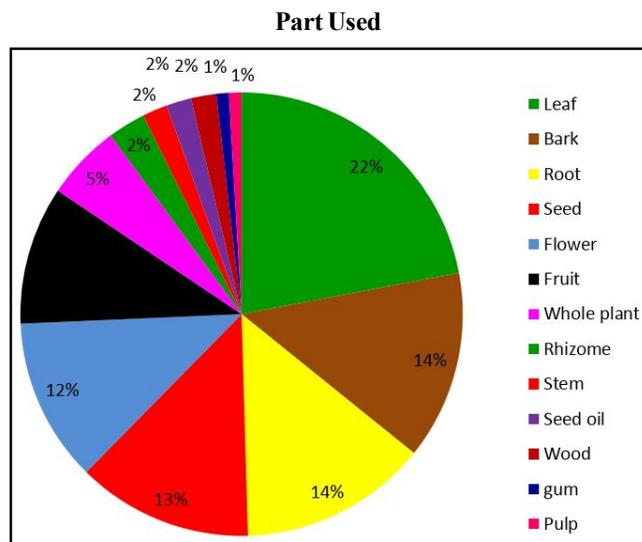
Table 1 Continued.....

(J.Konig ex L.)		Aam	Amra	and bark			
27.	<i>Mangifera indica</i> L.	Anacardiaceae	Aam	Amra	Whole plant	0.1	1.22
28.	<i>Mesua ferrea</i> L.	Colophyllaceae	Cham-bagam	Nagkesar	Leaves, flower, seeds and roots	0.06	0.09
29.	<i>Mimusops elengi</i> L.	Sapotaceae	Mahila	Bakulah	Fruit, flower, bark and seeds.	0.04	1.09
30.	<i>Morinda pubescens</i> Sm	Rubiaceae	Manjanathi	Indivarah	Root, leaves and fruits	0.72	1.23
31.	<i>Nerium oleander</i> L.	Apocynaceae	Arali	Karaveera	Flower and root.	0.08	0.09
32.	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	Tulsi,	Tulsi,	Whole plant	0.06	1.2
33.	<i>Piper nigrum</i> L.	Piperaceae	Black pepper	Maricha	Dried seed	0.12	1.42
34.	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Fabaceae	Kodukkapuli	Kodukkapuli	Bark, pulp and seed	0.05	0.84
35.	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Amla;	Umrital Amal, Amalki	Fruit	0.06	1.16
36.	<i>Polyalthia longifolia</i> (Sonn.) Thw	Annonaceae	Asokamaram	Debadaru	Bark, leaf	0.05	0.54
37.	<i>Pongamia pinnata</i> (L.) Pierre.	Fabaceae	Ponga	Karanjaka	Leaves, root and bark.	0.07	0.58
38.	<i>Santalum Album</i> L.	Santalaceae	Sandhanam	Sitabhra	Bark & leaf	0.06	1.18
39.	<i>Saraka asoca</i> (Roxb.) wilde	Moraceae	Asoka	Ashoka	Bark and flower	0.52	0.72
40.	<i>Syzygium Cumini</i> (L.)	Myrtaceae	Naval	Mahaphala	Leaves, seeds, flower, fruits and bark	0.04	1.06

Table 1 Continued.....

Table 1 Continued.....

41.	<i>Thespesia populnea</i> (L.) Sol. Ex. Correa	Malvaceae	Puvarasur	Brahm- akashta	Bark, root, leaf, flower and fruit	0.07	1.07	making preserves, squashes, jellies and wine. It is used to treat urinary tract problem, abdominal swelling, cough and head ache.
42.	<i>Veiveria zizanioides</i> (Lin) Nash.	Poaceae	Vet-tiver	Vira	Root	0.04	1.14	Traditionally it is used in pest control and as fragrant materials. The dry aromatic roots used to make curtains, mats, fans and other fancy goods. The oil is used as valuable perfumes, cosmetics and scenting of soaps.
43.	<i>Vitis negundo</i> L	Verbanaceae	Notchi	Nirgundi	Whole plant	0.04	1.1	Hepatoprotective, digestive vermifuge cardiac disorders.
44.	<i>Withania Somnifera</i> , Dunal.	Solanaceae	winter cherry	Rishya gandha	Roots and Leaves	0.06	1.1	It increases hemoglobin and hair melanin. It stabilizes blood sugar and lowers cholesterol. The herbal oil is used in many conditions like paralysis, epilepsy and sleeplessness. It increases body weight and body energy.



Plant part used in ethno-botanical value.

tulasi round the neck”.

The present study *Occimum tenuiflorum* is observed that the traditional Hindu people, of the study area having the practice of making Vrinthavan (Tulsimaadam) in the Eastern side of the house. Vrinthavan is a raised cuboid and masonry structure constructed by bricks or stones with four sides and images of deities installed on all the four sides along with an alcove produced for a small earthen oil lamp. A pot like structure is made on the top of the masonry, where the holy basil has to be planted. Usually *Occimum tenuiflorum* will be preferred to be planted in the vrinthavan. To promote well being and invoke the grace of the goddess living presence in the home, women wake up early in the morning lighting the lamp found in the vrindavan, offer blessed water to the holy basil and walking around the vrindavan by saying the mantra. They believed that if they begin the day with such worship, they are blessed by the Goddess who makes the whole day happy.

Data analysis

According to the calculation made on the basis of the use-value UV (Trotter & Logan 1986) *Aegle marmelos*, *Calotropis procera*, *Curcuma longa* and *Piper nigrum* were reported to be of the highest use value (0.12). As calculated by the use value (Polat *et al.*, 2017) *Andrographis paniculata*, *Datura metal*, *Hibiscus rosa-sinensis* and *Mangifera indica* were reported to be the highest use value (0.1). The majority of the plants used in Kanyakumari for ethno medicinal purposes. Local people were recorded to make medicinal preparation methods by using these plants in simple methods. The preparation methods included decoction, eaten raw and powdered. People used medicinal plants

most frequently for the treatment of treating blood pressure, upper respiratory tract infections, diabetic disease stomachach and wound healing. Ethno-medicinal values of the plants and associated knowledge are presented in table 1.

Conclusion

The ethno-medicinal uses of plants have been reported since long, most of these plants do not certify the efficacy. Our associates had left various spiritual beliefs for us towards nature and it was a very constructive device for conservation of plant biodiversity not only during their time but at present also. Almost all the plants which are declared as holy plants by our forefathers have high medicinal value, but most of them are in the verge of extinction. Therefore the main reason for associating plants with spiritual rites and beliefs was almost certainly for conservation or we can say that it was the veiled concept of conservation of plant biodiversity.

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