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## Conserving Plant Biodiversity Based on Traditional Knowledge in Magadh Region of Bihar, India.

Rajeev Ranjan Singh, V K Prabhat and Anil Kumar  
University Department of Botany  
Magadh University, Bodh Gaya-824234

### ABSTRACT

The present communication deals with Conserving Plant Biodiversity Based on Traditional Knowledge in Magadh Region, Bihar. They have been frequently associated with gods and goddesses as their incarnation, symbols, abode, offering, sacrificial rites and rituals, religious ceremonies and for different celestial components. Traditional knowledge was used in ancient India as a tool to protect nature and natural resources. Several plants, such as *Aegle marmelos* ('bel'), *Calotropis procera* ('akwan'), *Coconut nucifera* ('nariyal'), *Curcuma longa* ('haldi'), *Cynodon dactylon* ('dub'), *Datura metel* ('dhatura'), *Desmostachya bipinnata* ('kusha'), *Ficus benghalensis* ('bargad'), *Ficus religiosa* ('pipal'), *Mangifera indica* ('aam'), *Musa paradisiaca* ('kela'), *Nelumbo nucifera* ('kamal'), *Ocimum sanctum* ('tulsi'), *Oryza sativa* ('dhan'), *Piper betel* ('pan') and many others are considered sacred and used in Hindu and Buddhist religious rites. These beliefs and practices continue to be the elements of modern Indian traditions. Consequently, many plant species of ecological, economical, medicinal and social importance in this area i.e., Magadh region of Bihar area have been saved. Magadh region of Bihar occupies a unique place in the religious and cultural history of India.

**Key Words:** Religious beliefs, Traditional cultures, Conserved plants.

### INTRODUCTION

Traditional knowledge refers to knowledge, possessed by indigenous people, in one or more societies and in one or more forms, including but not limited to, art, dance and music, medicines and folk remedies, folk culture, biodiversity, knowledge and protection of plant varieties, handicrafts, designs, literature etc. (Agarwal, 1997; Arunachalam, 2001). There is no universal definition of Traditional knowledge; however, scholars typically define it either as knowledge developed by indigenous communities or tradition-based intellectual property. "Traditional knowledge is the information that people in a given community, based on experience and adaptation to a local culture and environment, have developed over time, and continues to develop. (Gangwar, 2010)."

Traditional knowledge has played, and still plays, a vital role in the daily lives of many people. It has been found to contribute to sustainability in diverse fields such as biodiversity conservation, ecosystem mainenance, biocultural restoration, sustainable water management, genetic resource conservation and management of the natural resources.

Magadh region of Bihar occupies a unique place in the religious and cultural history of India. It recorded in it's environ the imprints of Vartya, Aryan, Buddhists, Jains and Hindu civilizations. Today, it is fusion of faiths. The people of this region have rich tradition of indigenous cultural and socio-religious practices through

various

types of uses of trees and plants in different beliefs, faiths, worships, rituals, taboos, or customs which serve as a tool for regulated exploitation and promote conservation. It is this background that the present study has been undertaken, which is aimed at documentation of the plants related with religious and cultural practices by the local people and their conservational practices.

## MATERIAL AND METHODS

The present survey was undertaken to collect information on cultural and religious values of plants and trees in various localities of Gaya, Bodh Gaya and its neighbourhood during October 2019 to March 2020. Information was gathered through dialogues and discussions with some persons who regularly perform *puja* (worship), *yajnas* and other religious ceremonies.

The specimens were preserved following the standard and modern herbarium techniques (Jain and Rao, 1977) and deposited in the herbarium of University Department of Botany, Magadh University.

These were identified with the help of herbarium specimens of the Herbarium of Botany Department and relevant floras, like The Botany of Bihar & Orissa by H. H. Haines, The Flora of Delhi by J.K. Maheshwari and Records of the Botanical Survey of India, Calcutta.

## RESULTS AND DISCUSSION

### 1. *Abrus precatorius* Linn. (F. Fabaceae) *Ratti*.

**Description:** A wiry, twiner found over bushes; seeds shiny, small pea size, usually bright scarlet, and with a black eye.

**Cultural and Religious Values:** From very early times, the goldsmiths have used rati seeds as weights. *Atharva Veda* describes that in a ritual one hundred *rati* seeds (*Satakrsnala*) were offered to *Agni*.

### 2. *Aegle marmelos* (Linn.) Correa (F. Rutaceae). *Bel*

**Description:** A common tree planted in compounds, vicinity of temples and on roadsides for its leaves, the “Bel Patra” which are in great demand during Shraavan as religious offering to the Lord Shiva.

**Cultural and Religious Values:** Its green leaves and fruits are offered to Lord Shiva as religious offerings. It is also sacred to Parvati, and is the *Vilva-rupra*, nine forms of Kali. Its wood is used in several rituals.

The drug called *Bel* comprises unripe or ripe fruits of the tree.

### 3. *Anthocephalus cadamba* (Roxb.) Miq. (F. Rubiaceae) *Kadam*

**Description:**

A large deciduous tree with a spreading crown bearing drooping branches and yellow ball like flower heads, occasionally seen in big gardens and homesteads

**Cultural and Religious Values:** It is specially associated with Lord Krishna who performed many *leelas* in Vrindavan which are associated with Kadamba tree. The tree is said to represent *shatabhisa nakshtra*. In Threavada Buddhism, the kadamba tree was there where Sumedha Buddha achieved enlightenment. Even today one can find relics of it in several Buddhist monuments.

### 4. *Azadirachta indica* A. Juss. (F. Meliaceae) *Nim*

**Description:**

A medium sized or large indigenous tree grown near habitations and on roadsides etc.

**Cultural and Religious Values:** Being the seat of Shitala, the persideing deity of small pox, its leaves are used to lessen and relieve the ailment. The women worship it by offering flowers, vermilion and other fragrant objects in the bright- half of the month of *Chaitra*.

A bunch of ‘Neem’ leaves is also hung on the doors on birth or death to keep away evil spirits or where there is infection of small pox in the family.

Dried leaves, when put in clothes, drawers and cupboards, can ward off insects. Green twigs are used as tooth brushes for the healing of wounds.

It is widely employed in folklore medicine and has been rightly called “the village dispensary”.

### 5. *Bambusa arundinacea* Willd. (F. Poaceae) *Bans*

**Description:**

Clumps of bamboo are present around dwellings in villages. Isolated clumps are seen in urban localities.

**Cultural and Religious Values:** It is used as poles in Marriage Mandapas. The offerings to sun in Chhath festival are arranged in new baskets made up of green bamboo.

The bamboos are frequently represented upon Buddhist sculptures. Split culms are used for mat – making, basketwork, etc.

**6. *Butea monosperma* (Lamk.) Taub (F. Fabaceae) Palas.**

**Description:**

A medium sized deciduous tree planted in gardens and along the roadsides for its beautiful orange- red flowers and goes by the name 'Flame of the Forest'.

**Cultural and Religious Values:** Hindus attribute that among the 3 - leaflets of the leaf, the lateral leaflet (left) as representing 'Brahma' (God of creation), terminal leaflet as 'Vishnu' (God of protection) and the other leaflet (right) as 'Mahesh' (God of destruction). Dried twigs are used for feeding of sacred fires (called 'Homa' in Sanskrit) in religious ceremonies.

The leaves are used for making platters, cups, wrappers for packing eatables and as 'Beedi wrappers.

**7. *Calotropis procera* (Ait.) R.Br. (F. Asclepiadaceae) AK, Akwan, Madar. Description:** An erect or decumbent milky shrub frequent in open waste dry places often gregariously.

**Cultural and Religious Values:** The flowers are used in the worship of Lord Shiva. Besides, its twigs are also employed as *Samhitas* for performing the *Havan* ceremony.

**8. *Clitoria ternatea* Linn. (F. Fabaceae). Aparajita.**

**Description:**

A twining perennial climber with conspicuous blue or white flowers, grown in hedges or on walls.

**Religious Values:** Its flowers are specially held sacred to the goddess Durga.

**9. *Cocos nucifera* Linn. (F. Arecaceae) Nariyal.**

**Description:**

A tall palm occasionally met with in local gardens, in compounds and yards; bearing a crown of pinnate leaves and a spathe enclosing a spadix; fruit ovoid, three- angled drupe; and filled with a watery fluid (coconut water).

**Cultural and Religious Values:** In religious and ceremonial occasions *Varuna* Devta is represented by a pot of water (*kalash*) with a coconut fruit placed over its mouth.

It is also employed as offerings to goddess Durga.

Its nuts are broken on the opening ceremonies (*Muhurat*).

Tree yields several products of commercial importance such as food, drink, oil, fiber, fuel and timber.

**10. *Curcuma longa* Linn. (F. Zingiberaceae) Haldi**

**Description:**

A perennial herb, with a short stem and tufted, linear, ascending leaves, is cultivated extensively; rhizomes orange colored, cylindrical and constitute the turmeric of commerce.

**Cultural and Religious Values:** Turmeric (rhizomes or powder) is an auspicious article in all religious observances in Hindu households.

The invitation card for a Hindu marriage or the new account books of shops is marked with fresh turmeric. The rubbing of turmeric and oil is an essential part of the Hindu marriage, as well as of some other religious ceremonies. The entire or the corners of every new article of dress, whether of man or woman, are stained before wearing it with a paste of turmeric. A liquid of turmeric with lime is used in the Aarti ceremony for warding off the evil eye.

Turmeric is used as a condiment and is indispensable in the preparation of curry powder.

**11. *Cynodon dactylon* (L.) Persoon (F. Poaceae) Dub.**

**Description:**

A perennial grass forms the commonest groundcover in lawns, roadsides and wastelands.

**Cultural and Religious Values:** Hindus consider it sacred and associate it with Ganesha. Few branches of grass held together or tied with a red thread, are used as a brush for applying vermilion, turmeric, curd, oil etc. on the body of the bridegroom.

**12. *D. alba* Nees (F.Solanaceae) *Dhatura*.****Description:**

An erect, perennial, pubescent spreading herb, sometimes becoming shrubby; common as a weed on roadsides, waste open places and village sites.

**Cultural and Religious Values:** In old Indian literature, the plant is referred as 'Shivashekhara', because the flower is associated with Lord Shiva. Leaves, flowers and fruits are offered to Lord Shiva.

**13. *Desmostachya bipinnata* Stapf (F.Poaceae) *Kusa*.****Description:**

A perennial, tall tufted, grass, with stout stolons covered with sheaths, finely pointed at the top; found especially in waterlogged soils.

**Cultural and Religious Values:** This plant is used in all Hindu ceremonies. It is used to clean a place where a ritual is to be performed by sprinkling water with it. It is used while reciting 'mantras' in rituals.

Pavithram (*darbha* twisted into a ring-like loop with a tail) is an indispensable item in religious functions. It is to be worn in right hand ring-finger.

In a fire ritual like Agni Santana, *darbhas* are placed on all the four sides of the Agni Kundan.

**14. *Emblica officinalis* Gaertn. (F. Euphorbiaceae) *Amla, aonla*.****Description:**

A moderate-sized deciduous tree often planted in gardens and homeyards; fruits drupe, globose, green when tender, light yellow when mature; seeds 6 in number and trigonous.

**Cultural and Religious Values:** This tree is worshipped as the representative of Vishnu on the ninth day of bright fortnight in the month of Kartik (November).

It is a common practice in the villages to marry this plant to 'Tulsi' (*Ocimum sanctum*), followed by other weddings.

It is one of the three constituents of the well-known Indian preparation *Triphala*

It is used for making pickles, preserves and jellies.

**15. *Ficus bengalensis* Linn. (F. Moraceae) *Bar, Bargad*.****Description:**

An enormous tree, 70 to 100 ft. high, planted along the roads, near temples and shrines, and on open places in villages; sending down prop roots from to support the branches like pillars.

**Cultural and Religious Values:** Due to its immortal habit by the curious way it expands through aerial roots, it was very often referred to as 'Akshaya Vat' in old literatures. The *Akshaya Vat*, near the sacred *Mangla Gouri* temple in, Gaya, is the subject of many legends, and attracts thousands of pilgrims during Pitri Paksh.

In the month of *Jyeshth* (May – June), women for belief of long life of their husbands worship the banyan and the worship is known as *Vat Savitri*.

Its leaves are employed as one of the *Panch Pallav* (the other being the leaves of a peepal, a gular, a mango and a palas) in every religious ceremony. The dry twigs are used for producing sacred fires.

**16. *Ficus glomerata* Roxb. (F. Moraceae) *Gular*.****Description:**

A moderate – sized tree with a spreading crown; occasionally planted on roadsides and villages; fruits syconus, red when ripe, sub – globose, borne in large clusters on short leafless branches.

**Cultural and Religious Values:** *Gular tree* is of sacrificial importance. By offering its wood to *Agni*, the sacrificer gratified him by every kind of food.

Amulets made of its wood are used for obtaining material prosperity and warding off evil.

Fruits are edible.

**17. *Ficus religiosa* Linn. (F. Moraceae) *Peepal, Asvattha*,****Description:**

A large deciduous and glabrous tree with spreading branches; often found near temples or shrines, hence the name *religiosa*.

**Cultural and Religious Values:** It is especially sacred to the Hindus and it comes first on the list of five sacred trees viz. *Peepal, Bargad, Gular, Pakar* and *Aam*, It is the pagoda fig – tree, the tree of God.

It is believed that its roots represent Brahma (God of creation), its bark Vishnu (God of protection) and its branches Shiv Mahadeva (God of destruction). Thus, it is considered the emblem of the *Trimurti*.

The *asvattha*, the *darbha* and the *soma* have been described as immortal oblations (Athrava Veda).

The tree is worshipped on every month when the new moon falls.

It was beneath this the peepal tree that Gautam Buddha sat in meditation at Bodh Gaya and first attained enlightenment (Bodhi). This tree came to be called the Bodhi, the 'Tree of Wisdom' or the 'Tree of Meditation'.

Besides, there is a general superstition amongst rural people of the area that evil spirits are located in this tree and it can be harmful if somebody goes near it in late nights.

**18. *Ficus infectoria* Roxb. (F.Mora Pakar.**

**Description:**

A large spreading evergreen low-crowned thick shady tree sending down aerial roots, common in open places in villages.

**Religious Values:** Its leaves form one of the constituents of *Punch pallavs* and the dried twigs are used as *Samhidas*.

**19. *Hibiscus rosa – sinensis* Linn. (F.Malvaceae) *Urhul; Gurhul.***

**Description:**

A common evergreen, ornamental shrub planted in gardens compounds and temples for its large brilliant crimson, red, pink to yellow showy flowers

**Cultural and Religious Values:** The devotees of divine mother Durga offer *Gurhul* flowers in their worship. It is also used in offering Argya to the Sun God. Flowers yield dark-purplish dye, which is used for making shoe polishes.

**20. *Hordeum vulgare* Linn. (F.Poaceae) *Jau.***

**Description:**

An annual erect, stout and tufted grass cultivated as a food crop.

**Cultural and Religious Values:** It is one of the constituents of 'Sapta Dhanya'. It is considered as a symbol of wealth and fertility. During Navaratra the barley grains are ritualistically grown around the 'Kalash' on the 'Kalash Sthapan day'. and nurtured through the nine days. It is particularly associated with the God Indra.

It is especially introduced in the ceremonies attending the birth of an infant, weddings and funerals and as certain sacrifices.

As a ritual, in *Holikadahan* newly-harvested ears of barley and wheat are roasted, as offerings to God.

**21. *Lawsonia alba* Lamk. (F.Lythraceae) *Mehndi.***

**Description**

It is a much-branched shrub largely planted in gardens, parks and compounds for its leaves.

**Cultural and Religious Values:** Married women use its leaves as paste for coloring the palms on festive occasions especially on 'Karva Chauth' and 'Haritalika Tij'. Also, it's offering to goddess Durga especially during 'Navratri' is considered auspicious.

**22. *Madhuca indica* Gmelin. (F.Sapotaceae) *Mahua.***

**Description:**

A medium – sized deciduous tree, usually with a short bole and large rounded crown, found occasionally near villages and along village roads.

**Cultural and Religious Values:** Flowers and fruits of Mahua are offered to gods and goddesses to invoke blessing for the fulfillment of wishes by the tribal people.

It is also worshipped at the time of wedding. The bride performs a symbolic marriage with this before she is gifted away to the bridegroom.

Mahua tree plays an important part in the lives of tribal people.

**23. *Mangifera indica* Linn. (F.Anacardiaceae) *Am (The Mango Tree)***

**Description:**

A large spreading evergreen tree, grown more often in home yards, field borders and roadside avenues in rural as well as urban areas (typical mango groves lacking in this area.).

**Cultural and Religious Values:** On any auspicious occasion and vedic rituals, mango leaves can be seen in any house. Its leaves are employed in adorning *mandaps* of various ceremonies. Besides, its twigs are offered to sacred fire as *Samhidhas*. It provides one of the *Panch Pallava* and its flowers are used in Shiva worship on the Shivratri. In North Bihar, before the actual marriage during marriage ceremony, a marriage of this plant is performed with Mahua, as a symbol of Agni. In the Jataka stories there are reference to several mango groves, some of which are donated to the Buddhist Samgha.

Its fruit is known sometimes as ‘the nectar of the gods’ and sometimes as the ‘king of fruits’.

**24. *Musa paradisiaca* Linn. (F.Musaceae) *Kela*.**

**Description:**

A perennial herb with stout pseudostems, widely grown as a backyard crop in households.

**Cultural and Religious Values:** It has been attached much religious significance during the Durga Puja. The plant is worshipped in dawn of the of Saptami and is installed on the right side of Sri Ganesh in Durga Puja Pandal. Its leaves are especially used in the worship of the Satya Narayana. Bunches of its fruits are used in festivals and ceremonies and placed by Hindus at the entrance of their houses on special occasions like marriage as appropriate emblems of plenty and fertility.

Fruits are edible.

Banana leaves are extensively used as platters.

**25. *Nelumbo nucifera* Gaertn. (F.Nymphaeaceae) *Kamal*.**

**Description:**

A floating perennial herb, fairly common in ponds and tanks firmly anchored in the mud beneath the water surface.

**Cultural and Religious Values:** The flowers of *N.nucifera* are used for ornament and as offering in temples. It is the National Flower of India belonging to each of us, whatever our faith.

Padma, Dorje, Norbu, Kamal, Saroj, Neeraj, Pankaj, Rajiv and Rahul are some of its many beautiful word forms that live on forever in the culture of India as the names have been bestowed on the children.

Hindus associate lotus blossom with the gods, Vishnu, Brahma and Lakshmi. From this flower arose the Hindu Trimurti: Brahma, Vishnu and Siva.

Lakshmi, the goddess of fortune rests on a lotus leaf. Flowers and seeds comprise an important part of Laxmi puja during Deepawali. Those who aspire for wealth, make recitations on the 108-seed (kamalgatta) garland. *Kamal* is essential to bring prosperity. For happiness and good fortune five seeds of *kamal* and five rhizomes of *haldi* when put together in cash locker brings the desired results.

In Yoga, one of the main postures for meditation is known as *padmasan* / lotus position.

The Buddha and the Bodhisvattas are figured on lotus pedestals just as are the Hindu Trimurti.

Bowls (*dona*) prepared from its leaves are also utilized to serve cooked vegetables to the revered guests.

The fruiting torus (Kamalgatta, chapni) is often sold for the edible carpel embedded on it.

**26. *Nyctanthes arbor-tristis* Linn. (F.Oleaceae) *Harsinghar*.**

**Description:**

A hardy large shrub or small tree, grown as an ornamental in gardens;

**Cultural and Religious Values:** The fragrant flowers of ‘Harsinghar’ are esteemed as votive offerings in temples and made into garlands.

The plant is supposed to have been brought from heaven by the Lord Krishna for his wife Satya bhama.

**27. *Ocimum sanctum* Linn. (F.Lamiaceae) *Tulsi*.**

**Description:**

A much- branched erect herb; frequently grown in courtyards and temples; two types of *O. sanctum* are met with in cultivation: the green type (*Sri- tulsi*) and the second type (*Krishna- tulsi*) bears purple leaves.

**Cultural and Religious Values:** It has the greatest honour of getting worshipped as the consort of Lord Vishnu. Every year in Kartik Suklapaksha Dwadasi, Tulsi ‘vivah’ is celebrated with Lord Vishnu with great faith and devotion. Hence, she is glorified as *Vishnupriya*, *Kesavapriya*. It is believed that because of His deep attachment to Tulsi, Vishnu does not accept any offering if it is not accompanied by Tulsi leaves. In the course of worship consisting of *Achamana*, *Sankalpa*, *Abhishek*, *Alankara*, *Archana*, *Naivedya*, *Namaskara*, *Pushpanjali*, etc., in every stage Tulsi’s presence is essential. Devotees of Vishnu wear Tulsimala (stringes made of Tulsi beads) because of the purifying effect of Tulsi.

Most Hindus grow the plant in their houses, and offer it daily prayers and sacrifices. When a Hindu member is on the deathbed, a bit of its root is placed in the mouth of the dying man, and the leaves are placed on his face, eyes, ears, and chest; he is then sprinkled from head to foot with a tulsi twig which has been dipped in water.

Tulsi is often used in folk remedies.

**28. *Oryza sativa* Linn. (F. Poaceae) *Dhan, chaval.*****Description:**

It is an annual or perennial grass most extensively cultivated cereal crop after wheat.

**Cultural and Religious Values:**

The Hindus hold the paddy sacred as a symbol of wealth and prosperity (Goddess Lakshmi). Grains of rice colored with saffron constitute *akshatas* used most frequently when performing *puja* and in other great ceremonies. It is considered good manners to offer some in a metal cup to any one to whom a ceremonious invitation is sent. The latter in return takes a few grains and applies them to the forehead.

The rice is also considered sacred in 'Buddhists' mythology, as 'Sujata' once saved the life of 'Sidhartha' during his fast by offering him rice prepared in milk.

It is the staple food crop of the district.

**29. *Piper betle* Linn. (F. Piperaceae) *Pan.*****Description:**

A perennial creeper cultivated for its leaves used as a masticator.

The Magahi pan is grown in Magadh region of the State, mainly Gaya (near Wazirganj, Kauadol, and Tungi) and Aurangabad districts,

**Cultural and Religious Values:** Its leaves are used in all religious ceremonies of the Hindus. These are offered to deities along with betel nuts.

Chewing of betel leaves by the Hindus on auspicious and festive occasions is an ancient practice.

Betel leaves have a strong pungent aromatic flavor and widely used as a masticator.

**30. *Prosopis spicigera* Linn. (F. Mimosaceae) *Shami*****Description:**

A small to moderate-sized, evergreen tree with conical spines, grown in gardens, compounds and yards, temples, etc

**Cultural and Religious Values:** The dry twigs are used for 'Havans' in various religious ceremonies, and the leaves offered for worshipping 'Ganapati' ('Ganesha'). It is worshipped to obtain pardon for sins, success over enemies, and for the realization of one's wishes.

It is worshipped on the 10<sup>th</sup> of 'Ashwin Sudhapaksha' ('Dashera' festival),

**31. *Saccharum munja* Roxb. (F. Poaceae) *Munj, Sarkanda.*****Description:**

A very large erect grass growing in clumps, with flowering clumps up to 6 m. tall, found wild along riverbeds.

**Cultural and Religious values:** Cords made of munja were used in making girdles (*mauñji*) after twisting in 3 folds in *upanayana* ceremony.

It is of great value for the fibre (*munj*) extracted from the upper leaf sheaths of the flowering culms. It is extensively employed in the manufacture of cordage and ropes and for making mats, baskets, etc.

**32. *Saccharum officinarum* Linn. (F. Poaceae) *Ikh, Ganna.*****Description:**

A tall perennial grass, known only under cultivation for production of sugar and jaggery.

**Cultural and Religious values:** It plays an important role in the material prosperity of the people. It is considered as the symbol of sweetness for love and affection.

It is must as one of the offerings to Lord surya during *chhath* festival in Bihar.

It is also cultivated round urban areas for chewing or for extraction of juice as a drink.

**33. *Saraca indica* (non Linn.) *Beddome* (F. Caesalpinaceae) *Ashok.*****Description:**

A small evergreen tree with an erect trunk and elegant close – leaved crown; flowers numerous, orange to vermillion, very fragrant in dense axillary corymbs.

**Cultural and Religious Values:** Its flowers are used for religious ceremonies and temple decorations. It is frequently mentioned in Indian epics and Jatak tales and depicted in Buddhist sculptures.

The word Asoka signifies that which is deprived of grief. Mason says that the tree is held sacred among the Burmans because Gautam Buddha was born under it and immediately after his birth delivered his first address.

It is planted as an ornamental and avenue tree along roadsides

**34. Sesamum indicum Linn.** (F. Pedaliaceae) *Til***Description:**

An erect, branched or unbranched annual cultivated as a *rabi* crop.

**Cultural and Religious Values:** Sesame seed has been an essential article in Hindus religious ceremonies and has been referred to as *homadhanya* and *pitrutarpana* in ancient scripts. Its seeds have been universally used in sacrifices from the early past. It is generally used as one of the ingredients of *pinda*.

The seed is primarily valued for its oil. It is also used as a nourishing food. Locally, widely used in preparation of *tilkut*.

**35. Sesbania grandiflora Pers.** (F. Fabaceae). *Agastya*.**Description:**

A quick – growing small tree grown for ornament in compounds, yards and along roadsides.

**Cultural and Religious Values:**

Its leaves are used in Ganesh *puja*, Rishi *puja* and Ghata- Mahalakshmi *puja*. The Skanda Purana mentions *Agastya* flowers to be offered to Lord Vishnu. Its flowers are in great demand during Chitragupta Puja as religious offering to the Lord Chitragupta.

Young flowers and pods are eaten as vegetables. Flowers are eaten in the form of *pakor*s (a type of snack).

**36. Shorea robusta Gaertn. F.** (F. Dipterocarpaceae) *Sal*.**Description:**

A large sub-deciduous tree with reddish brown or gray, smooth or longitudinally fissured bark.

**Cultural and Religious Values:** Sal tree is of interest from a mythological point that the mother of Buddha is represented as holding a branch of the tree in her hand when Buddha was born and it was under the shade of Sal tree that Buddha passed the last night of his life on earth.

**37. Syzygium cumini (Linn.) Skeels** (F. Myrtaceae) *Jamun*.**Description:**

A large, evergreen tree with a dense crown and grown in widely differing localities. **Cultural and Religious Values:** The god Megh is said to have been transformed into a jambul tree. The color of the fruit being dark like that of Krishna, this plant is very dear to him; it is, therefore, worshipped and Brahmins are fed under it. The leaves are used as platters or *panch pallowa* and for pouring libations.

The tree is held in veneration by the Buddhists. The ripe fruit is widely eaten raw.

Extracts of the bark and seeds, and also leaves are used in the treatment of diabetes.

**38. Thevetia nerifolia Juss.** (F. Apocynaceae) *Kaner*.**Description:**

An evergreen shrub or small tree with milky sap and commonly met in gardens, yards and compounds.

**Cultural and Religious Values:** The flowers are offered to various deities.

The bridegroom uses its twig to strike the “Toran” (a step of marriage ceremony in Hindu community) believing that it will lead to a happy and prosperous married life.

**39. Trapa bispinosa Roxb.** (F. Trapaceae) *Singhara, Panifal*.**Description:**

A rooted, aquatic herb cultivated for its edible fruits in lakes, tanks and ponds. **Cultural and Religious Values:** Fruits are offered to deities on the occasion of *Chhath* festival.

The nuts are eaten raw when tender and fresh or after cooking, or boiling and roasting.

**40. Zizyphus jujuba Lamk.** (F. Rhamnaceae) *Ber*.

A large spinous shrub or small tree, planted in gardens, villages and roadsides mainly for its fruits.

**Cultural and Religious Values:** Its fruit is offered to Lord Shiva on the day of Shivratri, and to the Goddess Sarwasati on the day of Basant Panchami. At the festival of Holi, a twig is used as a symbol of Prahlad and it is kept in fire.

Ber provides a delicious fruit of many varieties which is eaten both in the fresh and dried condition.

## RESULTS AND DISCUSSION

The present study has been aimed at documentation of the plants related with religious and cultural practices in the Vedic Hinduism by local people and their conservational practices.

In Hindu religion, trees and plants have been considered as revered, bestower of good, and protector from evils with a concept of God living in it. Hindus consider trees and plants as the abode of various Gods and Goddesses. They worship many trees, and it is still popularly believed that every tree has a Vriksha-devata "tree deity" who is worshipped with prayers and offering of water, flowers, sweets, and encircled by sacred threads. Tree worship has been quite popular and universal as early as in the times of Rig Veda.

They are considered symbolic of different celestial components of the universe ('Nakshtra', 'Rashi', and 'Grah') and are used in *Havans* to ward off evil effects (Tiwari, 1999). That is why in Indian mythology trees are regarded as pious objects, and are not to be cut or harmed at any cost

'Pipal' (*Ficus religiosa*) is probably the most important species in this respect. As gods live on it, so it is a sacrilege to harm it any way. Sometimes threads are tied around certain trees to seek a boon; or even symbolic marriages are performed on Amavasya between 'neem' (*Azadirachta indica*) and 'pipal' (*Ficus religiosa*), which are usually grown near each other. Yet another belief that helped in conserving wild vegetation is that during the 'Chaturmasya' (4 months of the rainy season), the god rests on trees and plants. Therefore, if trees are worshipped during this time, the gods will be pleased. Traditionally, trees are cut if only absolutely necessary. Traditional knowledge also has been useful in cultivating certain plants that needed extra care. For example, 'tulsi' (*Ocimum sanctum*), a highly valued medicinal plant, is grown in every house, and ritually watered, even today. 'Neem' (*Azadirachta indica*), 'anvala' (*Emblica officinalis*), 'bel' (*Aegle marmelos*), mango (*Mangifera indica*), 'palsh' (*Butea frondosa*), 'sada bahar' (*Catharanthus roseus*) are some of the plants which have received preferential treatment in protection. This is clearly a case of religion and culture being used to protect, conserve, and /or produce resources for human sustenance. Also, for Hindus, the planting of a tree is a religious duty. Tree plantation ceremony, called Vana Mahotsava, has been narrated in Varaha Purana (172.39). Cutting of trees and destruction of flora are considered a sinful act. Hindu ancestors considered it their duty to save trees; and in order to do that they attached to every tree a religious sanctity. Gradually trees became objects of worship.

Plants are essential components of the customs and ceremonies of the Indian subcontinent. Certain plants and plant products are compulsory for particular ceremonies such as *Datura*, *Calotropis* and 'Aparajita' (*Clitoria*) flowers and

'Bel' leaves for worship of Lord Shiva, *Anthocephalus cadamba* and all yellow flowers and 'Tulsi' (*Ocimum sanctum*) leaves for Vishnu or Krishna and red Hibiscus for Kali. The three leaflets of 'Bel' resembling the 'Trishul' or the Trident are considered symbolic of creation, destruction and preservation, the powers attributed to Lord Shiva.' Tulsi' is sacred to all Hindus as an incarnation of goddess Lakshmi, being grown in courtyards of most houses and worshipped. Goddess Lakshmi is worshipped with 'dhan' (*Oryza sativa*), *Borassus* cotyledons, seasonal fruits and coconut. A coconut is broken as a symbolic sacrifice in various auspicious occasions. The *Kalash* or the pot of plenty is offered to gods and goddesses for success of a mission. Branches of mango or lotus flowers are put in a water pot and the top is covered with a coconut. This *mangal ghat* is used in weddings, worship and many other ceremonial occasions. During weddings four banana plants are placed at the four corners of the spot where marriage rituals and the vows taken. For the Hindus the turmeric (*Curcuma domestica*) and 'doob' (*Cynodon dactylon*) are the most auspicious being indispensable for rites and rituals. For all ceremonies inclusive of wedding betel leaves and whole areca nut are preferred. In Northern and Western India for weddings and other ceremonies a paste of 'Mehandi' or henna (*Lawsonia inermis*) leaves is used to decorate the hands of bride and other ladies.

The traditional human relationship has also played an important role towards the c

onservation of larger habitats as sacred grooves. The flora of Parasnath hills in Jharkhand (part of old Bihar) has been saved due to Jain faith of non-injury to any life (Jain, 2002).

In Buddhism also trees are regarded as bliss-bestower to meditators. Siddhartha's birth - spot was the pleasant grove of 'Sal', 'Ashoka' and 'Plaksha' trees renowned as Lumbini (Bhikku Jagdish Kassap, 1959). It was beneath a Pipal tree that Siddharath attained enlightenment, which henceforth was called the Bodhi, the 'tree of wisdom'. Thus he became Enlightened, Awakened, or Buddha. The place of his demise is said to have been a grove of couple of 'Sal' trees in Kushinara (Bhikku Jagdish Kassap, 1959). Buddha, after being enlightened, first took rice milk under the tree offered by Sujata (Bhikku Jagdish Kassap, 1959). Thus, it may be said the

tree is one of the mystic tokens of Buddhists Messiahship.

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