

Documentation of the plants used in different Hindu rituals in Uttarakhand, India

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Abstract. Chandra S. 2022. *Documentation of the plants used in different Hindu rituals in Uttarakhand, India.* *Asian J Ethnobiol* 5: 92-101. Hinduism is one of the largest practicing religions. The Indian subcontinent is the cradle of this religion, and it is followed by a majority of the people of the subcontinent. Rituals are the main component of the Hindu tradition. Any ritual is a way to connect with God and offer salutation. From birth to the death of a person, one has to perform various rituals on enormous occasions. Methodology and material used in a ritual vary as per the presiding deity. In the sacrifice (Yajyan) and other worship procedures stage (Mandapa), different utensils and materials required to complete the rituals originated from plant products. These products represent the environmental and geographical structure of the area. Documentation of the plant species used in different Hindu rituals is done in the present article. A total of 104 plant species are enumerated. The use of plant species individually or in combination with others is also elaborated. Some terms used in the rituals, such as Panch Pallav, Panch Mewa, Saptanaja, Tambula, Panchamrita, Ashtha Bali, etc., which have botanical significance, are also discussed.

Keywords: Havishya, Hindu tradition, Navgraha, Samvidha, Yajyan

INTRODUCTION

Religions and faiths have generated enormous mechanisms to offer their salutations to the creator, which is called God. From the Vedic time (c. 1500-c. 500 BCE), the people of the Indian subcontinent have devised various procedures to offer homage to different components of nature. Various constituents of nature are worshiped as deities viz. earth (Goddess Prithvi), daytime (God Mitra), sky (God Dhyawa), wind (God Marut), sun (God Surya), fire (God Agni), dawn (Goddess Usha), darkness (Goddess Ratri), water (God Varuna), moon (God Chandrama), plants (God Vanaspati) and forest (Goddess Aranyani), etc. (Acharya and Sharma 2018a,b,c,d). Along with the evolution of understanding about the importance of different components of nature, people started to develop different procedures to mark respect towards them and seek blessing from them. As time passed, these procedures turned into rituals.

Rituals are the main component of the Hindu tradition. From birth to the death of a person, one has to perform various rituals on enormous occasions (Drabu 1990). Some rituals are performed by an individual, and some by a group of people. In the rituals, various animal products and plant parts are used. Vedic people used those plants and animal products in the rituals available in their vicinity, and modern Hindu societies still follow that practice. The cow was the main source of livelihood for Vedic people, and various products of a cow, such as milk, curd, clarified butter, urine, and fresh cow dung, were used in the rituals (Acharya and Sharma 2018a). Similarly, plants of Indian origin, such as mango, banana, coconut, banyan, holy basil,

peepal, rice, black gram, etc., are primarily used in the rituals. Based on their usage in the rituals, most of these plants and animals are considered more sacred than the others. Some of the plants and animal products are considered very important when performing the rituals, meaning that in the absence of these products, rituals cannot be completed.

Rituals are dynamic in nature people do not strictly follow the scriptures to perform rituals, rather, over generations, they have developed various alternatives based on the availability of the resources in the area. Therefore, the plant products used in rituals represent the environmental and geographical structure of the area (Acharya 2014). For instance, the coconut fruit is considered sacred and used in many rituals, but in the hilly areas of northern India, in some rituals, it is replaced by the lime fruit. This was due to the unavailability of coconut fruit in hilly northern India, so people started using other fruits.

As the social structure and lifestyle of the people are changing, the core structure of rituals is also changing. The priests (Pandits) and old aged people are the main stakeholders of this knowledge, along with the shopkeepers (Pansari) who sold these items. Due to the changed lifestyle and influence of the western culture younger generation considers the traditional rituals less practical. Simultaneously, the limited availability of plant-based products further aggravates the condition. Transfer and accumulation of such knowledge are not happening to the young generation, who knows very less about plants used in rituals and their importance. The use of plastic is also a threat to this knowledge. Traditionally bowls, plates, and other utensils used in different rituals were prepared from plant-based

products. Yet, these items are being replaced with plastic-based products. As a consequence, traditional knowledge related to many such products is vanishing day by day.

There have been various articles on the documentation of the plants mentioned in the Vedas, Mahabharata, Ramayana, and other sacred Hindu texts (Agrawala 1952; Deb 1955; Dhiman 2003; Arya 2007; Amirthalingam 2013; Varma 2015; Balkrishna et al. 2019; Tripathi 2019) but no article represents the plants used in the different rituals. In the present work, author aimed to document different plants used in the different rituals. This knowledge can be useful for protecting certain locally grown species and awareness of their importance.

MATERIALS AND METHODS

Study area

The study was conducted in Uttarakhand, a hilly state in India. Uttarakhand comprises wide geographical variation from plain areas and various mountain ranges to mighty snow-covered Himalayan peaks. Conventionally, the state is known as Dev Bhumi (Abode of Gods) due to the presence of a large number of Hindu sacred sites (Tirtha) and mentioning of the areas in the various scriptures as Mahabharata and Puranas.

Procedures

From various sacred scriptures (Vedas, Puranas, and Samhitas), procedures of performing different rituals were compiled into a single book in the Hindu tradition. Such books are considered a protocol for the rituals and are known by numerous names as Pooja Bhaskar, Nitya Karmakand Pooja, Karmakand Bhaskar, etc. Such books by Sharma (1985; 1990; 1991; 1995), Khemka (1993), Shastri (1999; 2016), Acharya (2014), Chaturvedi (2015), Gaur (2015), and Avasthi (2020) were referred for the present study. Apart from these, some other books by Mishra (2001), Girdharwal (2006), Sharma (2008), Verma et al. (2009), Pandey et al. (2011), Narayan (2012), Srimali (2015), Shastri (2016), Gaur et al. (2018), and Dixit (2019) deals with the methods of worship and sacrifice (Yajyan) of various deities were also consulted. Data for the present work was also gathered through interviewing 160 people, including the priests (Pandits), old people, shopkeepers (Pansari), and young people in the study area.

RESULTS AND DISCUSSION

Hindu rituals broadly come under two categories Vedic and Tantric rituals. Vedic rituals strictly follow the Vedas. In contrast, Tantric rituals are rooted in the Vedas but have variations in the methodology. Vedic and Tantric rituals follow the Nigama and Agama literature, respectively (Drabu 1990). Rituals can be a ceremony (Samskara) or worship procedure (Pooja) of a deity. The deities are further classified into various categories. These can be any God as Rama, Shiva, Vishnu, Brahma, etc. or Goddess as Durga, Laxmi, Saraswati, etc., or component of nature as

water (Varuna), earth (Prithvi), wind (Vayu), fire (Agani), river (Nadi), etc. or the nine planets (Navgraha) as the sun (Surya), Jupiter (Brhaspati), mercury (Budha), venus (Shukra), etc. or the ancestors (Pitra deva) (Acharya and Sharma 2018a).

The core philosophy of Hinduism believes in one supreme God called (Brahma or Brahman), and all the Gods (Deva), living beings (Jeeva), and matters (Padartha) are considered a manifestation of him (Radhakrishnan 2018). Therefore, any ritual is a way to connect with him and offer salutation. Methodology and material used in a ritual have variations as per the presiding deity of the ritual. Therefore, rituals of different deities have different steps (Drabu 1990). Some steps include the formation of a stage (Mandapa) for deities, offering of fragrance (Dhoop), lighting of lamp (Deep), worship of five prominent Gods (Ganesh, Vishnu, Shiva, Surya, and Goddess Durga), worship of small water containing utensil (Kalasha), offering of water (Jalam), five elixirs (Panchamirta), offering of cloths (Vastra), Yajyonpavita (Janeu), offering of sandal paste (Chandan), flowers (Pushpam), fruit (Phalam), food (Naivedhya), etc. are usually common in every ritual (Acharya 2014).

Different plant parts or plant-based products are used to form the things above. A list of plants used in the different Hindu rituals is provided in Table 1. A total of 104 plant species are enumerated. All categories of plant species as herbs, shrubs, trees, climbers, and runners are presented in the table. Different plant parts such as root, stem, leaves, flower, fruit, seed, or whole plant of the different species are utilized in various rituals. Common flowers (rose, carnation, dahlia, marigold, etc.) and fruits (guava, citrus, mango, apple, etc.) which are usually offered to deities depending on their season, are not mentioned in the list. These flowers and fruits are termed Hritu Pushpam and Hritu Phalam, respectively (Sharma 1991). These are neither offered to any specific deity nor on a specific occasion but to various deities on every occasion.

Sacrifice is common in every ritual. Sacrifice involves an offering of different materials to the deity. In the sacrifice (Yajyan) over a specific stage (Mandapa), woods are ignited, and oblation is offered to the fire. Meanwhile, Vedic hymns are chanted by the priests (Hritvik). The woods used to ignite the fire are called Samvidha (Acharya and Sharma 2018a). Wood from specific plants mentioned in Table 2 is used for this purpose. In the absence of these plants, wood of plants that do not possess spine or prickles is used. The oblation is known as Havishya or Churu, a mixture of plant products mentioned in Table 3 mixed with clarified butter (Ghee) (Sharma 1990). For the fragrance, mixtures of plant products mentioned in Table 4 are used. In the ancient times, toward the end of sacrifice animal slaying (Pashu Bali) was done in ancient times. But the tradition evolved with time; presently, animal slaying is prohibited and replaced by offering plant products. Usually, the fruit coconut (Nariyal) is used for this purpose (Acharya and Sharma 2018a). In some Tantric rituals, other plant products are also used. Based on plant products, these are classified into two categories, i.e., Makh Bali and Ashtha Bali. In Makh Bali, lamp (Deep), black gram

(Urad), curd (Dahi), vermilion (Sindoor), seasonal flowers, and food (Prasada) are offered to the deities. Makh Bali is usually offered in the rituals performed to get rid of bad spirits and omens. Ashtha Bali is an extended version of the Makh Bali, where eight plant parts or plant-based products are offered to the local deities (Kshetra Pala). Plant parts or products used as Makh Bali and Ashtha Bali are mentioned in Table 5.

Plant products or parts and animal products are sometimes used individually or in combination with others in the rituals and described with specific names. A detail of such combination is provided herein:

Panch Pallav (five sacred leaves)

Leaves of the five sacred plants are decorated on the small water-containing utensil (Kalash). A list of the plants is provided in Table 6.

Panch Mewa (five sacred dry fruits)

For the worship of deities, five sacred dry fruits are offered. A list of the plants is provided in Table 7.

Saptanaja (seven grains)

In some Tantric rituals, grains or seeds of seven plants are mixed and offered to the deity. The combination of these seven grains varies according to the geographical condition and environment of the area. A list of plants used for this purpose is provided in Table 8.

Sarvoshadhi

It is a combination of plant parts and is used for the holy bath of deities. Different plant parts are powdered and mixed with water and milk during the bath of the deity. Plants used for this purpose are provided in Table 9.

Panchamrita (five elixirs)

It is combination of animal and plant-based products and offered to the deities. Holy basil leaves are mixed with milk, curd, clarified butter, and honey or sugarcane. The list of component used for this purposes is provided in Table 10.

Panchagavya (five pious from cow)

In this, five products of cow are mixed and used for the bath and purification of the deity. The list is provided in Table 11.



Figure 1. Images of different rituals. A. Wooden plank (Chauki) decorated for the Ganpati Pooja, B. Various items staged to perform a ritual, C. A Yajyan mandapa, D. Traditional mortar (Okhali) decorated for the ceremony, E. A pot decorated before commencing small scale Yajyan, F. A priest preparing for Yajyan, G. Symbol (Brahmathangur) of the deity held by devotees, H. Traditional Haldi ritual of marriage ceremony.

Table 1. List of the plants used in Hindu rituals in Uttarakhand, India

Plant	Common name	Part use	Use
<i>Abrus precatorius</i> L.	Gunja, Ratti	Fruit, roots	Jeweler used to use fruit as a unit of measurement; pendant of roots worn on neck and waist after invocation to get rid of bad spirits.
<i>Aegle marmelos</i> (L.) Corrêa	Bel, Bilva	Leaves, fruit	Leaf with three leaflets and fruits are offered to God Shiva
<i>Amaranthus caudatus</i> L.	Cholai	Fruit	For the preparation of the food of deities (Prasada); used in the sacrifice (Hawan) of the Goddess Durga
<i>Anaphalis contorta</i> (D.Don) Hook.f.; <i>Anaphalis</i> sp.	Bugulu	Flower	Used in the reverence of ancestors (Pitra pooja)
<i>Annona muricata</i> L.	Main Phal	Fruit	It is offered to Goddess Durga
<i>Areca catechu</i> L.	Supari	Fruit	Fruit is venerated; an important component of the Tambula
<i>Asparagus racemosus</i> Willd.	Satavar	Root	It is used in Satoshadhi, during bath of deities
<i>Bauhinia vahlii</i> Wight & Arn.	Malu	Leaves	For the preparation of the plate and bowl used in rituals
<i>Bauhinia variegata</i> L.	Kachnar	Whole tree, flowers	It is believed that the tree is liked by God Vishnu; Flowers are offered to the God
<i>Benincasa hispida</i> (Thunb.) Cogn.	Petha, Bhujyalu	Fruit	Used as an alternative to animal sacrifice (Ashtha Bali); for making food of deities (Prasada)
<i>Betula utilis</i> D.Don	Bhoj Patra	Outer covering of stem bark	Outer covering of stem bark is worshiped; in ancient times due to absence of papers the scriptures were written on the rolls of the these covering
<i>Bombax ceiba</i> L.	Semal	Fruit fiber	Fiber from the fruits is used as an alternative of cotton fiber
<i>Brassica napus</i> L.	Sarson (Kali)	Fruit	For the veneration of ancestors; Used in Tantric tradition to get rid of bad spirits; oil is used in the reverence of planet Saturn (Shani)
<i>Brassica rapa</i> subsp. <i>campestris</i> (L.) A.R.Clapham	Sarson (Peeli)	Fruit	For the veneration of ancestors; used in Tantric tradition to get rid of bad spirits; oil is used in the reverence of planet Saturn (Shani)
<i>Butea monosperma</i> (Lam.) Kuntze	Palas, Dhak	Leaves	For the preparation of the plate and bowl used in rituals
<i>Calotropis gigantea</i> (L.) W.T.Aiton	Arka, Madar	Whole plant	Used in the veneration of God Shiva and Ganesha; used in the veneration of planet Sun (Surya); people believe that growing the plant near house protects from bad spirits
<i>Cannabis sativa</i> L.	Bhang	Leaves	Liked by God Shiva; on the occasion of the Maha Shivratri exudates of the leaves mixed with milk and dry fruits (Bhang ghota) and offered to God Shiva and consumed by devotees
<i>Capsicum annuum</i> L.	Mirch	Fruit	Used in Tantric tradition to get rid of bad spirits
<i>Cedrus deodara</i> (Roxb. ex D.Don) G.Don	Deodar	Wood	Used in the sacrifice (Yajyan)
<i>Cicer arietinum</i> L.	Chana Dal	Refined seeds	Offered to the God Vishnu as food (Prasada)
<i>Citrus limon</i> (L.) Burm. f.	Chhota nimbu, Kagaji nimbu	Fruit	On Saturday, fruit of lime and green capsicum (Hari Mirch) are tied together and placed at the gate of the house and shop to get rid of bad spirits and bad omens
<i>Citrus pseudolimon</i> Tanaka	Bada Nimbu	Fruit	Used for the reverence of deities; venerated in the marriage ceremony and donated (as Prasada) for the newly married couple; sometimes also used as a substitute of the coconut fruit; fruit used as an alternative to animal sacrifice (Ashtha Bali)
<i>Clitoria ternatea</i> L.	Parajita	Flower, roots	Roots and flowers are used in Tantric tradition to get rid of bad spirits
<i>Cocos nucifera</i> L.	Nariyal	Leaves, fruit	Leaves are used for the preparation of stage of deities (Mandapa), fruit is venerated; fruit is used as an alternative to animal sacrifice (Ashtha Bali); considering the importance of the fruit it is considered as Shriphal, which means fruit of wealth
<i>Coix lacryma-jobi</i> L.	Vaijanti	Seed	Garland of the seed is revered and it is believed that God Vishnu likes it
<i>Colocasia esculenta</i> (L.) Schott	Arabi	Rhizome	Used as an alternative to animal sacrifice (Ashtha Bali); consumed by devotees during fast (Vrata)
<i>Crocus sativus</i> L.	Keshar	Stigma	Dried stigmas mixed with the paste of sandal (Chandan) and applied to the forehead; stigmas are considered a sign of prosperity and placed at lockers, worship places, and inside the books; it is also used for various purposes in the Tantric tradition
<i>Cucurbita pepo</i> L.	Kaddu	Fruit	Used as alternative of animal sacrifice (Ashtha Bali); for making 56 foods of God Krishna (Prasada)
<i>Curcuma longa</i> L.	Haldi	Rhizome	Yellow paste is used for veneration of ancestors (Pitra pooja) as an alternative of sandal (Chandan); the paste is also considered auspicious and applied before holy bath (Mangal Snan) during marriage and first shaving ceremony (Mundan Samskara) and the ritual is termed as Haldi Hath; un-boiled rhizome used in auspicious occasions as marriage, first shaving ceremony (Mundan Samskara) of boy; in the festival of Chhat

<i>Cynodon dactylon</i> (L.) Pers.	Doob, Durva	Leaves	Important for the veneration of God Ganpati; leaves used in veneration of all deities (Dev pooja) and ancestors (Pitra pooja); used in the veneration of planet Rahu; leaves used for the applying turmeric on the body during auspicious rituals
<i>Dactylorhiza hatagirea</i> (D.Don) Soó	Hattha jodi	Roots	Roots are used in the Tantric tradition for prosperity
<i>Datura stramonium</i> L.	Dhatura	Root, stem, leaves, flower, fruit	Root, stem, leaves, flower and fruit (Panchang) are used for the veneration of God Shiva
<i>Dendrocalamus strictus</i> (Roxb.) Nees	Bans	Bole/stalk	For the preparation of articles of deities as baskets etc., in the reverence of ancestors (Pitra pooja); bole established in the stage of Bhagwat katha; bole used for making symbols of deities as flag, palanquin and altars; for making Arthi of the dead bodies; burning the bole is prohibited; bole is not allowed to keep in the house
<i>Desmostachya bipinnata</i> (L.) Stapf	Kusha	Leaves	Used for preparation of mat (Ashana) of the deities; sacred thread of leaves used in the ancestor reverence (Pitra Pooja); it is considered mandatory in all ancestor reverence, used in the veneration of planet Ketu
<i>Dioscorea bulbifera</i> L.	Genthi	Rhizome, fruit	Used in the Ashtha Bali; consumed by devotees during fast.
<i>Dioscorea deltoidea</i> Wall. ex Griseb.	Tedu	Rhizome, fruit	Used in the Ashtha Bali; consumed by devotees during fast.
<i>Echinochloa frumentacea</i> Link	Jhangora	Seed	Component of the seven grains (Saptanaja) used in Tantric tradition and reverence of ancestors
<i>Elaeocarpus angustifolius</i> Blume	Rudraksh	Fruit	Fruit is worshiped; it is believed that God Shiva love it very much; necklace of fruit is worn by devotees
<i>Elettaria cardamomum</i> (L.) Maton	Ilayachi (chhoti)	Fruit	Used in veneration of deities; an important component of the Tambula
<i>Eleusine coracana</i> (L.) Gaertn.	Mandua	Seed	Component of the seven grains (Saptanaja) used in Tantric tradition and reverence of ancestors
<i>Ferula assa-foetida</i> L.	Hing	Root extract	Mixed with juice of garlic to get rid the bad spirits (Bhoot dosha).
<i>Ficus auriculata</i> Lour.	Timalu	Leaves	For the preparation of the plate and bowl used in rituals
<i>Ficus benghalensis</i> L.	Bargad, Vat	Leaves, wood, prop roots	Leaves are dipped in the sacred utensil Kalash; after reverence, leaves are tied at the main gate of the house and stage of deities (Mandapa); wood is used in sacrifice (Yajyan), wood of prop roots is used for the preparation of decoction offered to the pregnant lady during Punsavan Samskar
<i>Ficus racemosa</i> L.	Gular	Leaves, wood	Leaves are dipped in the sacred utensil Kalash; after reverence, leaves are tied at the main gate of the house and stage of deities (Mandapa); wood is used in sacrifice (Yajyan); for the sacrifice of the planet Venus (Shukra)
<i>Ficus religiosa</i> L.	Peepal, Ashwatha	Whole tree, leaves, wood	One of the sacred trees in Hindu tradition; in the sacred scripture Srimad Bhagavad Gita God Krishna told that he is peepal amongst the tree; leaves dipped in the sacred utensil Kalash after reverence leaves are tied at the main gate of the house and stage of deities (Mandapa); wood is used in sacrifice (Yajyan); dried twigs are used in the reverence of planet Jupiter (Brhaspati); whole tree is venerated on the Saturday (Shaniwar) and new moon day (Amavasya); leaves are used for the preparation of decoction offered to the pregnant lady during Punsavan Samskar
<i>Ficus virens</i> Aiton	Pilkhan	Leaves	Leaves dipped in the sacred utensil Kalash; after reverence, leaves are tied at the main gate of the house and stage of deities (mandapa)
<i>Glycine max</i> (L.) Merr. 'Kala bhatt'	Soyabean 'Kala bhatt'	Seed	Component of the seven grains (Saptanaja) used in Tantric tradition and reverence of ancestors
<i>Gossypium hirsutum</i> L.	Cotton	Seed fiber	Dried seed fibers are refined and rolled as thick thread called Bati, which are dipped in the brassica oil (Sarson oil) or clarified butter (Ghee) and lighted. These are termed as Deep. It is an essential part of every veneration
<i>Hibiscus rosa-sinensis</i> L.	Gudhal	Flower	Flowers are offered to Goddess deities
<i>Hordeum vulgare</i> L.	Jau	Whole plant, seed	Whole plant is venerated; plant fixed with cow dung at the main gate of the house on the occasion of Vasant Panchami; seeds used in sacrifice (Yajyan); reverence of ancestors; for donation on special occasions
<i>Ipomoea batatas</i> (L.) Lam.	Sakarkandi	Fruit	Used in the Chhat festival, Satyanarayan Vrat; consumed by devotees on the fasting days
<i>Jasminum officinale</i> L.	Chameli	Roots	Roots are harvested in the Pushya naksktra invoked and wore as a pendant to become victorious
<i>Lawsonia inermis</i> L.	Mehandi	Leaves	Powder of leaves is applied on arms and foots of bride and bridegroom in different designs; offered to the Goddess Durga

<i>Lens culinaris</i> Medik.	Masur	Seed	To get rid of bad effects of the planet Mars (Mangal) over the bride and bridegroom. Seeds after reverence are donated along with red cloth
<i>Lyonia ovalifolia</i> (Wall.) Drude	Anyar	Twig	For the reverence of the ancestors (Pitra pooja) as a dental brush (Datoon)
<i>Macrotyloma uniflorum</i> (Lam.) Verdc.	Kulath	Seed	Component of the seven grains (Saptanaja)
<i>Mangifera indica</i> L.	Aam	Leaves, wood	Leaves are dipped in the sacred utensil Kalash; after reverence, leaves are tied at the main gate of the house and stage of deities (Mandapa); wood is used in sacrifice (Yajyan),
<i>Mesua ferrea</i> L.	Nag keshar	Flower, buds	Used in Tantric tradition for prosperity
<i>Mimusops elengi</i> L.	Molshri, Keshav, Bakul	Roots	Daily at dawn, water is offered in the roots to get rid of bad effects of planet Mars (Mangala); people plant the herb in the premise of their home for auspicious effects
<i>Musa paradisiaca</i> L.	Kela	Whole plant, leaves, fruit	Whole plant used for the preparation of stage (Mandapa) of deities; plant venerated on Thursday (Guru Var) as a symbol of God Vishnu; fruit consumed by devotees on the fasting days
<i>Myristica fragrans</i> Houtt.	Jaiphal	Fruit	It is offered to Goddess Durga
<i>Nardostachys jatamansi</i> (D.Don) DC.	Masi	Rhizome	Used for fragrance in all ceremonies; also used in sacrifice (Yajyan)
<i>Nelumbo nucifera</i> Gaertn.	Kamal	Flower, stem, seeds	Flowers are offered to deities; a garland of seeds is used in the veneration of goddess Lakshmi; the flower is considered a symbol of creation and wealth and is associated with many deities as Lakshmi, Brahman etc.
<i>Neolamarckia cadamba</i> (Roxb.) Bosser	Kadamb	Whole tree, twig	Whole tree is considered sacred; twigs are placed in cow stable and it is believed that by doing so cattle are kept away from diseases
<i>Nerium oleander</i> L.	Kaner	Flower	Flowers are offered to deities; used in the oblation of the sacrifice (Yajyan)
<i>Ocimum tenuiflorum</i> L.	Tulsi	Whole plant, leaves	One of the sacred plants of Hindu tradition; leaves are used in the preparation of the food for deities (Prasada); leaves are used for the preparation of pious decoction Panchamrita; garland prepared from root and stem is revered; plant decorated as bride and symbol of God Vishnu (Shaligram shila) as bridegroom and marriage of both solemnized on Ekadashi of the Kartika month
<i>Origanum vulgare</i> L.	Badrinath Tulsi	Whole plant	Used for daily prayers in the shrine Badrinath
<i>Oryza sativa</i> L.	Dhan	Refined seeds	Used in veneration of deities; in reverence of ancestors; mixed with sandal paste (Chandan) and applied at the forehead (Akshta); cooked for preparation of food of deities (Prasada)
<i>Pennisetum glaucum</i> (L.) R.Br.	Bajra	Seed	Component of the seven grains (Saptanaja) used in Tantric tradition and reverence of ancestors
<i>Phyllanthus emblica</i> L.	Amla, Amalaki	Roots	Roots of tree are harvested in the Ashlesha nakshtra invoked and wore as a pendant on arms to clear out fear
<i>Pinus roxburghii</i> Sarg.	Cheer, Kulain	Twig, wood	For the preparation of the stage of deities (Dev mandapa); a large twig tree is fixed on the stage and decorated with different fruits and flowers as a symbol of deity; small stacks of wood are lit on the festival of Diwali
<i>Piper betle</i> L.	Pan	Leaves	Offered to deities as Tambula; used for the preparation of food for deities (Prasada)
<i>Piper nigrum</i> L.	Kali Mirch	Fruit	Used in Tantric tradition to get rid of bad spirits
<i>Prunus cerasoides</i> Buch.-Ham. ex D.Don	Panya	Twig, wood	For the veneration of deities (Dev pooja) and ancestors (Pitra pooja); venerated and burned on the festival of the Holi; wood is used in Yajyan
<i>Punica granatum</i> L.	Anar, Dadim	Whole plant, twig	The tree is planted in the Pushya Yoga considered auspicious; a flower is offered to the Goddess Dugra; in the Tantric tradition, pen is used for hymn writing
<i>Putranjiva roxburghii</i> Wall.	Putran jeeva	Fruit	Childless mothers in order to get a baby, wear necklace of fruits and worship it
<i>Saccharum officinarum</i> L.	Ganna	Stalk	Venerated on the occasion of Vijay Dashmi festival and other special occasions; on the festival of Chhat; used in Chholika ritual of marriage ceremony
<i>Santalum album</i> L.	Chandan	Wood	Red and yellow paste of wood is used in all rituals and applied at the forehead of deities and devotees; the paste is also mixed with water for the holy bath of the deities, bride and bridegroom
<i>Saraca asoca</i> (Roxb.) W.J.de Wilde	Ashok	Whole tree	Whole tree is considered holy and planted in the home premise for auspicious effects; invoked roots are placed in the lockers
<i>Saussurea obvallata</i> (DC.) Sch.Bip.	Brhmakamal	Flower	Flower is considered as a symbol of Goddess Nanda and venerated; garland of flowers is offered to shrine Kedarnath
<i>Senegalia catechu</i> (L.f.) P.J.H.Hurter & Mabb.	Khair, Kattha	Bole, wood	Articles of sacrifice (Yajyan) prepared from wood; used in the sacrifice; used in the veneration of planet Mars (Mangal)

<i>Sesamum indicum</i> L.	Til	Seed	Used in sacrifice (Yajyan); reverence of ancestors; for donation on special occasions
<i>Setaria italica</i> (L.) P.Beauv	Kangani, Kauni	Fruit	Component of the seven grains (Saptanaja) used in Tantric tradition and reverence of ancestors
<i>Sida rhombifolia</i> L.	Sahdevi	Roots	To get prosperity roots are wrapped in the piece of red cloth and invoked
<i>Sorghum bicolor</i> (L.) Moench	Jowar	Seed	Component of the seven grains (Saptanaja) used in Tantric tradition and reverence of ancestors
<i>Spinacia oleracea</i> L.	Palak	Whole plant	Offered to the Goddess Shakumbri during Navratra
<i>Stephania glabra</i> (Roxb.) Miers	Zimikand, Ginjyadu	Tuber	Used as alternative of animal sacrifice (Ashtha Bali)
<i>Syzygium aromaticum</i> (L.) Merr. & L.M.Perry	Laung	Bud	Used in veneration of deities; important component of the Tambula; specially used in Tantric tradition
<i>Syzygium cumini</i> (L.) Skeels	Jamun	Fruit	Fruit is offered to God Shiva; after invocation pendant of fruit is wore by devotees
<i>Tabernaemontana divaricata</i> R.Br. ex Roem. & Schult.	Tagar	Rhizome	Rhizome is used as oblation in the sacrifice (Yajyan)
<i>Tamarindus indica</i> L.	Imali	Fruit	In Tantric tradition, after the invocation, fruit is used for wealth and prosperity
<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Baheda	Leaves, roots	Roots and leaves are used in Tantric tradition to acquire wealth
<i>Thamnocalamus spathiflorus</i> (Trin.) Munro	Ringal	Bole/stalk	For preparation of articles of deities as baskets etc.; an article Chhawda used as a plate in the reverence of ghost and similar deities (Tamsi Pooja); an umbrella is prepared in the reverence of Goddess Nanda
<i>Tinospora cordifolia</i> (Willd.) Hook.f. & Thomson	Giloy	Stem, leaves	Stem is offered to Goddess Durga; leaves are used for the preparation of decoction offered to the pregnant lady during Punsavan Samskar
<i>Trapa natans</i> L.	Singhada	Fruit	Used in the occasion of Vijay Dashmi festival; used in the fast of Ekadashi day; different cuisines of flour consumed by devotees during fast
<i>Tripidium bengalense</i> (Retz.) H.Scholz	Sarkanda	Leaves	Used in the preparation of stage (Mandapa) on the auspicious functions; plant is also associated with the birth story of God Kartikeya
<i>Triticum aestivum</i> L.	Gehun	Milled seed (flour)	For the preparation of food (Prasada) of deities; earlier it was considered as food of elites
<i>Urtica dioica</i> L.	Kandali, Bichchhu Ghas	Twig	Used in Tantric tradition to get rid of bad spirits
<i>Verbascum thapsus</i> L.	Ekulu Veer	Whole plant	Whole plant is revered in the Tantric tradition to get rid of bad spirits
<i>Vigna mungo</i> (L.) Hepper	Urad	Seeds	Used in reverence of ancestors, donated in the offering of planet Saturn (Shani); used as an alternative to animal sacrifice (Makh Bali)
<i>Vigna radiata</i> (L.) R.Wilczek	Mung	Seed	To get rid of bad effects of the planet Mercury (Budha) seeds are donated
<i>Vitex negundo</i> L.	Nirgundi	Twigs, roots	Twigs and roots are used in Tantric tradition; it is specially used in Khechari Vidhya
<i>Zanthoxylum armatum</i> DC.	Timur	Bole/salk	Bole is used as a symbol of deities (Bhairava, Narsimbha, Nag, Sidhnath, etc.); saints (Sadhu) carry it along with them
<i>Ziziphus mauritiana</i> Lam.	Ber	Fruit	Fruit is offered to God Shiva

Table 2. Wood of plants used in sacrifice as Samvidha

Plant name (Hindu tradition)	Scientific name
Palas, Dhak	<i>Butea monosperma</i> (Lam.) Kuntze
Khair, Kattha, Khadira	<i>Senegalia catechu</i> (L.f.) P.J.H.Hurter & Mabb.
Pilkhan, Pakad, Plaksha	<i>Ficus virens</i> Aiton
Peepal	<i>Ficus religiosa</i> L.
Gular, Audumbar	<i>Ficus racemosa</i> L.
Bargad, Nyagrodha	<i>Ficus benghalensis</i> L.
Shami	<i>Prosopis cineraria</i> (L.) Druce
Chandan	<i>Santalum album</i> L.
Devdar, Deodara	<i>Cedrus deodara</i> (Roxb. ex D.Don) G.Don
Shal, Sal	<i>Shorea robusta</i> C.F.Gaertn.
Bilva, Bel	<i>Aegle marmelos</i> (L.) Corrêa
Chir, Sarala	<i>Pinus roxburghii</i> Sarg.
Vattha, Vattakanni	<i>Macaranga peltata</i> (Roxb.) Müll.Arg.

Table 3. Plant-based component of oblation (Havishya) of sacrifice (Yajyan)

Plant name (Hindu tradition)	Scientific name	Part
Til	<i>Sesamum indicum</i> L.	Seed
Jau	<i>Hordeum vulgare</i> L.	Seed
Dhan	<i>Oryza sativa</i> L.	Seed (refined)
Ganna	<i>Saccharum officinarum</i> L.	Sugar

Table 4. Plant parts used for the fragrance during the sacrifice (Yajyan)

Plant name (Hindu tradition)	Scientific name	Part
Jatamansi	<i>Nardostachys jatamansi</i> (D.Don) DC.	Rhizome
Kaner	<i>Nerium oleander</i> L.	Flower
Tagar	<i>Tabernaemontana divaricate</i> R.Br. ex Roem. & Schult.	Rhizome
Karpur	<i>Cinnamomum camphora</i> (L.) J.Presl	Latex (wood)
Guggal	<i>Commiphora wightii</i> (Arn.) Bhandari	Resin (wood)
Agar, Agaru	<i>Aquilaria malaccensis</i> Lam.	Resin (wood)

Table 5. Plant-based component as alternative (Makh Bali and Ashth Bali) of animal slaying

Plant name (Hindu tradition)	Scientific name	Part
Urad	<i>Vigna mungo</i> (L.) Hepper	Seed
Arabi, Papad	<i>Colocasia esculenta</i> (L.) Schott	Rhizome
Petha	<i>Benincasa hispida</i> (Thunb.) Cogn.	Fruit
Kaddu	<i>Cucurbita pepo</i> L.	Fruit
Zimikand	<i>Stephania glabra</i> (Roxb.) Miers	Tuber
Nariyal	<i>Cocos nucifera</i> L.	Fruit
Bada Nimbu	<i>Citrus pseudolimon</i> Tanaka	Fruit
Genthi	<i>Dioscorea bulbifera</i> L.	Rhizome, Fruit
Tedu	<i>Dioscorea deltoidea</i> Wall. ex Griseb.	Rhizome, Fruit

Table 6. List of Panch Pallav (five sacred leaves)

Plant name (Hindu tradition)	Scientific name
Peepal	<i>Ficus religiosa</i> L.
Aam	<i>Mangifera indica</i> L.
Bargad, Vat	<i>Ficus benghalensis</i> L.
Gular	<i>Ficus racemosa</i> L.
Pilkhan, Pakad	<i>Ficus virens</i> Aiton

Table 7. Panch Mewa (five sacred dry fruits)

Plant name (Hindu tradition)	Scientific name
Akhrot	<i>Juglans regia</i> L.
Anjir	<i>Ficus carica</i> L.
Nariyal	<i>Cocos nucifera</i> L.
Makhane	<i>Euryale ferox</i> Salisb.
Khajur	<i>Phoenix sylvestris</i> (L.) Roxb.

Table 8. Seven grains (*Saptanaja*) offered to the deity

Plant name (Hindu tradition)	Scientific name
Group 1	
Gehun	<i>Triticum aestivum</i> L.
Jau	<i>Hordeum vulgare</i> L.
Dhan	<i>Oryza sativa</i> L.
Urad	<i>Vigna mungo</i> (L.) Hepper
Kulath	<i>Macrotyloma uniflorum</i> (Lam.) Verdc.
Jowar	<i>Sorghum bicolor</i> (L.) Moench
Bajra	<i>Pennisetum glaucum</i> (L.) R.Br.
Group 2	
Gehun	<i>Triticum aestivum</i> L.
Jau	<i>Hordeum vulgare</i> L.
Dhan	<i>Oryza sativa</i> L.
Urad	<i>Vigna mungo</i> (L.) Hepper
Mandua	<i>Eleusine coracana</i> (L.) Gaertn.
Jhangora, Sanva	<i>Echinochloa frumentacea</i> Link
Soyabean 'Kala bhat'	<i>Glycine max</i> (L.) Merr. 'Kala bhatt'
Group 3	
Gehun	<i>Triticum aestivum</i> L.
Jau	<i>Hordeum vulgare</i> L.
Dhan	<i>Oryza sativa</i> L.
Til	<i>Sesamum indicum</i> L.
Kangani	<i>Setaria italica</i> (L.) P.Beauv
Chana	<i>Cicer arietinum</i> L.
Sanva	<i>Echinochloa frumentacea</i> Link

Table 9. Plant used in *Sarvoshadhi*

Plant name (Hindu tradition)	Scientific name
Mura	<i>Selinum candollei</i> Edgew
Jatamansi	<i>Nardostachys jatamansi</i> (D.Don) DC.
Vach	<i>Acorus calamus</i> L.
Kushth, Kuth	<i>Dolomiaea costus</i> (Falc.) Kasana & A.K.Pandey
Shilajeet	Dried exudates of certain plants as <i>Euphorbia royleana</i> Boiss., <i>Trifolium repens</i> L. <i>Barbula</i> sp., <i>Fissidens</i> sp., <i>Minium</i> sp., <i>Thuidium</i> sp. etc. on rocks
Haldi	<i>Curcuma longa</i> L.
Daru Haldi	<i>Berberis aristata</i> DC.
Sathi, Punarnva	<i>Boerhavia diffusa</i> L.
Champaka, Champa	<i>Magnolia champaca</i> (L.) Baill. ex Pierre
Musta	<i>Cyperus rotundus</i> L.

Navgraha (nine planets)

For the worship of the nine planets, nine plants are venerated. It is believed that nine planets influence an individual's psychological and physiological activity. It depends on the horoscope of a person. To get rid of the negative effects of any planet, people worship the plant designated to the planet. Detail of the planet and its respective plant is provided in Table 12.

Table 10. Component of the Panchamrita (five elixirs)

Components	Name (Hindu tradition)
Milk	Dugdh, Doodh
Curd	Dahi
Clarified butter	Ghee
Honey or Sugar	Shahad or shakkar
Tulasi (<i>Ocimum tenuiflorum</i> L.) leaves	Tulasi Patra

Table 11. Component of the Panchagavya (five pious from cow)

Components	Name (Hindu tradition)
Milk	Dugdh, Doodh
Curd	Dahi
Clarified butter	Ghee
Cow urine	Gau Mutra
Fresh cow dung	Gaubar

Table 12. Planets as per Hindu tradition and their respective plant

Planet name (Hindu tradition)	English name	Plant (Hindu tradition)	Plant (scientific name)
Surya	Sun	Arka, Mandar or Madar	<i>Calotropis gigantea</i> (L.) W.T.Aiton
Chandra, Soma	Moon	Palas, Dhak	<i>Butea monosperma</i> (Lam.) Kuntze
Mangal	Mars	Khair, Kattha	<i>Senegalia catechu</i> (L.f.) P.J.H.Hurter & Mabb.
Budha	Mercury	Apamarga, Chirchida	<i>Achyranthes aspera</i> L.
Brhaspati, Guru	Jupiter	Peepal	<i>Ficus religiosa</i> L.
Shukra	Venus	Gular	<i>Ficus racemosa</i> L.
Shani	Saturn	Shami	<i>Prosopis cineraria</i> (L.) Druce
Rahu		Doob	<i>Cynodon dactylon</i> (L.) Pers.
Ketu		Kusha	<i>Desmostachya bipinnata</i> (L.) Stapf

Table 13. Plant used in the Tambula

Plant name (Hindu tradition)	Scientific name	Part
Supari, Pungiphalam	<i>Areca catechu</i> L.	Fruit
Ilayachi (Chhoti), Ela	<i>Elettaria cardamomum</i> (L.) Maton	Fruit
Laung, Lavang	<i>Syzygium aromaticum</i> (L.) Merr. & L.M.Perry	Bud
Pan, Nagvalli	<i>Piper betle</i> L.	Leaves

Tambula

It is the combination of the plant parts mentioned in Table 13. Plants used in the Tambula (either in combination or individually) are offered to the deities to get rid of the bad odor of the mouth. It is offered after offering food (Naivedhyam) to the deity.

Documentation of the plant species used in different Hindu rituals is done in the present article. It is an attempt to document this traditional heritage of India so that it can be passed to the upcoming generations. In the globalized and techno-centric world, hoarders of traditional knowledge are very few. Information about the culture and ethnic practices of any locality is usually limited to certain people with ages older than 50 years. The younger generation is not enthusiastic about traditional knowledge; consequently, this heritage is threatened. Different components of nature such as plant parts or products, soil, animal products, water, and different minerals were used by our ancestors to perform rituals so that they could stay in touch with nature. Due to urbanization and deforestation, most young people have not encountered those plants in natural conditions, which are used in different rituals. For the completion of the rituals, plant parts or products are available in packets. People use these packed products for the worship of deities and ceremonies. Hence, the

connection between people the nature is getting lost. Therefore, it is necessary to sensitize the younger generation toward our traditional heritage and its scientific utility.

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