



## Sacred plants used by locals in religious ceremonies and rituals in western region of Kumaun Himalaya

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### Abstract

The present investigation was carried out with the help of sages, priests of nine temples, and old aged people from five villages of Almora, Uttarakhand, and recorded the use of plants in religious ceremonies and rituals. A total of 55 sacred plants belonging to 49 genera and 35 families are being used for religious ceremonies and rituals since time immemorial. We recorded the highest utilization of fruits and seeds (32%) followed by leaves 26%, wood/stem/barks, and flowers 12% each, whole plant 6%, and barks and root/bulb 4% each for religious rites purposes. Conservation of these economic plant resources is essential.

**Keywords:** Uttarakhand, Kumaun Himalaya, sacred plants, religious ceremonies, conservation

### Introduction

Kumaun Himalaya of Uttarakhand State is one of the most attractive and enthralling regions of India. Nature has endowed this land with natural beauty and spiritual bliss. It is also known as the abode of gods and goddesses. The State is recognized as the land of the god or 'Dev Bhoomi' [1]. The sacred rivers, like Ganga and Yamuna, originate from the glaciers of the State. Uttarakhand is also rich in floral, faunal, and socio-cultural diversity. People residing in remote areas are still dependent on wild resources, especially for fuel, fodder, medicine, fodder, fuel, and religious purposes [2, 3]. Traditionally, the local people have utilized the wild plant resources for offering conducting prayers, and they consider these plants sacred. Few studies conducted in different mountain regions are available [4,5,6,7] in India and Nepal and also recorded as ethnomedicinal plants in Himalaya [8, 9, 10, 11, 12, 13, 14]

### Aims and objectives of the study

Hindus are very much familiar with different valuable sacred plants in religious ceremonies and rituals used from birth to funeral. However, the literature regarding religious plants from the point of view of their use in religious activities, rituals, and other auspicious occasions is not

available. In the view of all objectives of this aim (i) to record, analyze, and document the different plant species which are being used in religious activities and rituals with reverence having faith in myth and religious belief. (ii) to preserve the traditional knowledge-based religious plants through the documentation so that it can prove to be useful for the new generation in the near future, and (iii) to create awareness amongst the people so that religious knowledge of plants, biodiversity, and other natural resources can be saved.

### Materials and Methods

#### Study Area

The study area, Almora district, Uttarakhand is located at 79° 44' 35" E longitudes and 29° 32' 55" N latitudes. Nine temples namely Jageshwar (Lord Shiva), Chitai (Golu Dev), Nanda Devi, Kasar Devi, Shyahi Devi, Banari Devi, Gairad Devta, Betaleshwar, and Deoli-danda and six villages namely Makeri, Dugalkhola, Chitai, Phal, Sarkarki Aali, and Railapani have been selected in the vicinity of Almora for the present study.

### Demographic profile

**Table 1:** Presents the demographic information in respect to gender, resource persons, age group, educational qualification and occupation.

Gender	Resource persons/ Participants		Age group (Years)	Educational Qualification	Occupation
	Sages and Priests of temples	Other old aged persons			
Male	40	32	40-70	Higher secondary, 35 % UG & 65 % PG	Worship, Farming & Job
Female	-	18	40-60	Higher secondary 70 % UG & 30% PG	House wife & Job
<b>Total</b>	<b>40</b>	<b>50</b>			

### Data collection, analysis and documentation

The data was collected from nine temples and six villages for present study. A total of 40 sages and priests from nine temples and 50 knowledgeable elder persons (32 males and 18 females) from 6 villages were selected from the vicinity of Almora. The temples and villages were visited by the first author during the prayer/ ceremonial time schedule. The sacred plants or the plant parts utilized for offering prayers,

religious ceremonies, holy and auspicious occasions, and rituals were recorded by using a semi-structured questionnaire by personal interviews. Further, the plant parts were also selected from these ceremonies and query was made for documenting the utilization purposes. As said earlier, the information from elderly people around the temples was also collected with the help of some sages residing in villages and around Almora. Pictorial

documentation was also conducted to identify the correct plant species utilized. Further, the name of the plant has been confirmed with the local people after verifying in the field with the help of taxonomical experts available in the University. After collecting the information (details of plants, parts utilized in various religious ceremonies / prayers, holy and auspicious occasions) on sacred plants, the data were analyzed and documented [15].

### Results and discussion

During the field investigation, we recorded that people residing in the area, including priests and sages, are highly knowledgeable, and they depend on plants for performing prayers/worship of local gods for well-being. On the basis of intensive survey and exploration, a total of 54 sacred plants (48 genera and 35 families) were recorded, on which 22 are trees, 3 shrubs, 26 herbs (includes 7 types of grasses), and 3 climbers. Among these 54 plants, 21 (38%) used to set fire during rituals performed on special occasions or Havan. Different combinations, as well as plant materials, were recorded for the preparation of the Havan. As per the local faith, the Havan has provided positive energy, which gives mental peace and kills harmful micro-organisms present in the environment. Furthermore, the hill people also believe that the performing of Havan every day, during the morning, and evening helps one attain spiritual enlightenment, mental peace, and purification of the mind [16]. Plants of the Poaceae family (grass family) are mostly used for the preparation of 'Bhog' (it means 'to end' or 'to conclude') in the ritual ceremony/ congregational services offering to God.

The plant materials are planted every year in a festival known as, *Harela*, in which seeds are grown in the house to perform the rituals, called *Pooja* and finally the seedlings are to be planted in the forest for conservation and effective utilization of resources, especially for making fodder for rural livestock. Further, few plants were used in religious rites performed in memory of ancestors (death anniversary or *Shradh*) with a belief to protect the children from evil spirits (Table 1). Since the birth of a child in mountain, the mountain people were dependent on plants available in the mountain areas [17], for providing vital role in the religious and social ceremonies of every rural society [18]. Therefore, India has a deep-rooted tradition of worshiping plants, which provides the base for the grass-root conservation practices [19,20,21].

Further, holy fire (Agni) used during the marriage ceremony, is from the specialized plant materials/combinations, that is, dry woods of *Mangifera indica* and *Cedrus deodara* in Hindu ceremony (Fig. 1, A); fresh oil extracted from the seeds of *Brassica campestris* used in clay lamps during the worship of all deities during the wedding ceremony (Fig. 1, B&C); leaves and fruits of *Datura stramonium* offered in performing prayers (*Pooja*) on the occasion of *Shivratri* and flowers of *Tagetes erecta* used in making a garland of flowers and worship of all deities (Fig. 1, D); seeds of different cereals, like *Triticum aestivum*, *Zea mays* and pulses like *Macrotyloma uniflorum* and *Vigna mungo* used for growing new seedling for *Harela* (Fig. 1, F).



**Fig 1:** (A) Wood of *Mangifera indica*, *Acacia catechu*, *Cedrus deodara* used for the burning of Havan material; (B & C) Seed oil of *Brassica campestris* used in clay lamps during the worship of all deities; (D) Leaves and fruits of *Datura stramonium* offered in Shiv puja on the occasion of *Shivratri* and flowers of *Tagetes erecta* used in worship; (E) Fruit nut of *Areca catechu* used in Havan and leaves of *Piper beetle* are used in *Ganesh Pooja*; (F) Seed of *Macrotyloma uniflorum* and *Vigna mungo* are used as growing new seedling for *Harela*.

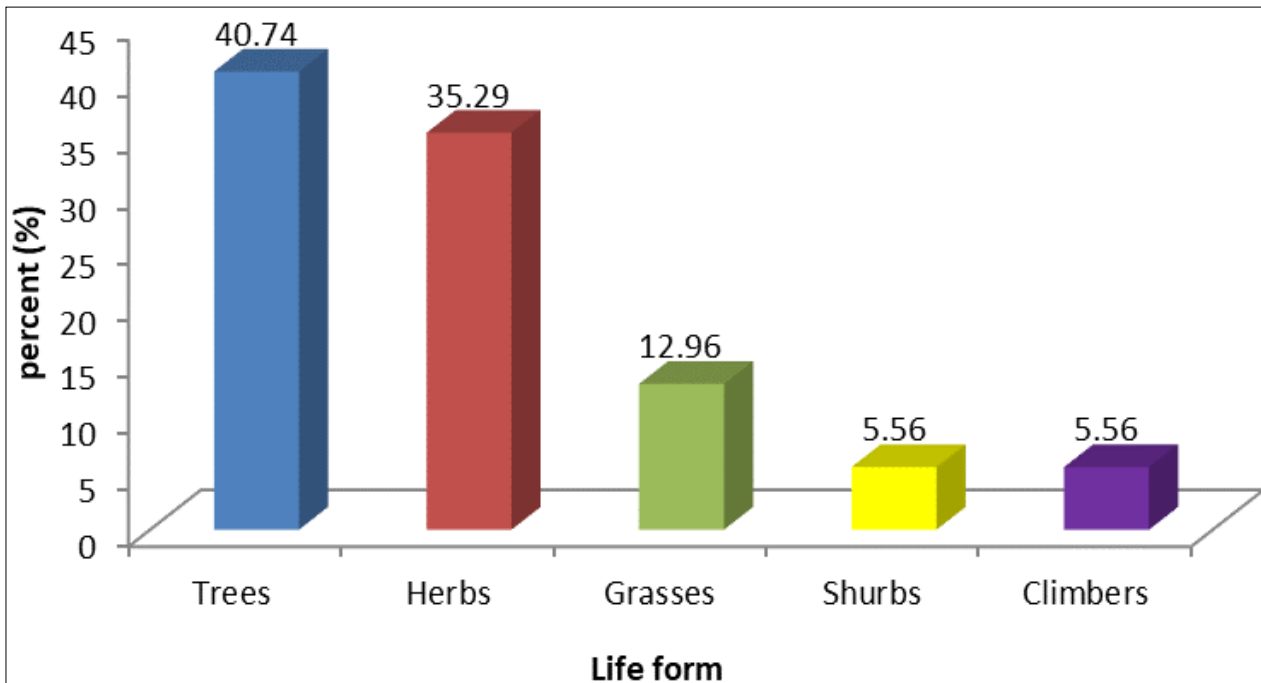
**Conclusion**

The biodiversity of Indian Himalayan Region is a major source of food, fodder, fuel, timber, agricultural implements, medicinal and other economic plants for sustaining the livelihood of rural people. The present study indicates that the local residents are still dependent on plant related resources from mountain, especially for collection of sacred plants for religious ceremonies. This practice and knowledge for the use of different plants and their parts for religious purposes have been evolved for the worship. Our ethical beliefs and religious myth consider that the worship of the Gods, the offering of plants and their parts gives a feeling of obtaining positive energy and peace. Moreover, inhabitants believed that the burning of plants and their parts in *Havan* purified the environment and killed the harmful micro-organisms and harmful insects. Further, on the other hand, the conservation of these plants is also needed. For example, for making *Havan* like activity, every household needs a minimum of 50-60 kilograms of wood materials every month. Therefore, along with these practices, the rural

people also conserve the local biodiversity through plantation of sacred plants (near temple areas), panchayat land, civil forest, private land and even kitchen garden for effective sustainable utilization of plant based resources.

**Limitations of the study**

The recorded plants are utilized only in the Kumaun Region of Uttarakhand State, India. We do not have a complete document /transfer/saving mechanism of these valuable plants based on traditional utilization practices. We have only focused on the listing, identification, and documentation of religious plants in religious ceremonies and rituals which find a place in myths, and religious ceremonies. So that tradition based religious knowledge of different plants could be transferred to the next generation in the future with a perspective to conserve the environment without harming nature and natural resources.



**Fig 2:** Column diagram showing life forms of plants used in religious and other ceremonies (in percent)

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**Declarations**

**Conflict of interest**

The authors declare that they have no conflicts of interest.

**Ethical Approval**

This article does not contain any studies with human participants or animals, performed by any of the authors. However, the permission and approval were taken from the ethical committee of the university, the Chief of the temple committee, and the Head of the village for the questionnaire-based study.

**Appendix 1. Format of Questionnaire for field Survey**

**Name of Respondent (Priest / local people)-**

**Name of the Temple/Locality-**

**Age-**

**Educational qualification-**

**Table 1**

S. No.	Scientific Name	Local Name	Part Used	Used in Ceremony/ offering / function

**Table 2:** Appendix 2-Showing sacred plants used in religious ceremonies, during holy and auspicious occasions and rituals

Botanical name	Local name	Life form	Religious uses
Anacardaceae			
<i>Mangifera indica</i> L.	<i>Aam</i>	T	Wood used for preparing <i>Havan</i> ; leaves used in the preparation of vessel used in rituals ( <i>Kalash</i> ) and fruits offered to God as an ingredient of five-mixed fruits ( <i>Panch-Fal</i> ).
Apocynaceae			
<i>Nerium oleander</i> L.	<i>Kaner</i>	S	Flowers conferred in the worship of the <i>Lord Shiva</i> and the nine planets
Arecaceae			
<i>Acacia catechu</i> L.	<i>Khair</i>	T	The wood used for preparation of <i>Havan</i> material and worship of the moon.
<i>Areca catechu</i> L.	<i>Supari</i>	T	One of the important seed ingredients among the five seed mixtures, used in Goddess ' <i>Durga</i> ' during the ' <i>Durga Mahostava</i> '. It also used in preparation of <i>Havan</i> material especially conferred to <i>Lord Ganesha</i> at the beginning of every religious ceremony.
<i>Cocos nucifera</i> L.	<i>Nariyal</i>	T	Fruit used in the preparation of <i>Kalash</i> during the <i>Navratri</i> festival and offered to Goddess.
Asclepiadaceae			
<i>Calotropis procera</i> Aiton.	<i>Madar</i>	S	Wood used for preparation of <i>Havan</i> material for worshiping of <i>Lord Surya</i> .
Asparagaceae			
<i>Asparagus racemosus</i> Willd.	<i>Satawar</i>	S	Twigs used in the naming ceremony and magico-religious beliefs.
Asteraceae			
<i>Tagete serecta</i> L.	<i>Genda</i>	H	Matured flowers kept at the feet of almost all deities on holy, auspicious occasions and religious ceremonies.
Brassicaceae			
<i>Brassica campestris</i> L.	<i>Sarson</i>	H	Seed oil is used for cooking ' <i>Bhog</i> or <i>Prasad</i> ' for religious ceremonies. It is also used in the lightening of clay lamps during the worship of all deities. The seeds are used in magico-religious belief.
<i>Brassica nigra</i> L.	<i>Rye</i>	H	Mixture of whole seeds with dried chili is used to ward off evil spirits and evil eyes from babies and used in magico-religious belief.
Cannabaceae			
<i>Cannabis sativa</i> L.	<i>Bhang</i>	H	Leaves and their extract are offered during the <i>Shiva-pooja</i> on the occasion of <i>Shiv-Ratri</i> .
Caprifoliaceae			
<i>Valeriana jatamansi</i> L.	<i>Sumaya</i>	H	Leaves and roots used as ingredients in <i>Havan</i> and its incense in all religious ceremonies.
Compositae			
<i>Artemisia vulgaris</i> L.	<i>Pati</i>	H	Leaves used by elders for blessing young children for their happiness and well-being and an ingredient of <i>Havan</i> material. Leaves are also used in <i>Pooja</i> related to death anniversary.
Coniferaceae			
<i>Cedrus deodara</i> Lamb.	<i>Devdar</i>	T	The wood used in the preparation of <i>Havan</i> material and as a substitute for <i>Sandalwood</i> .
Cucurbitaceae			
<i>Cucumis sativus</i> L.	<i>Kakadi</i>	C	Its new fruits are offered to the local goddesses for gaining happiness and well-being.
Ericaceae			
<i>Rhododendron arborium</i> Smith.	<i>Buransh</i>	T	Fresh flowers mixed with mustard and rice grains are used at the spring festival of Uttarakhand, also called ' <i>Phooldei- Chhamadei</i> '. The mixture is also sprinkled over the children for their well-being and happiness.
Euphorbaceae			
<i>Emblica officinalis</i> Gaertn.	<i>Anwala</i>	T	Fruits offered at the feet of <i>Lord Shiva</i> and <i>Vishnu</i> and used in religious rites ( <i>Pitra Saradh</i> ) and death anniversaries.
Fabaceae			
<i>Butea monosperma</i> Lam.	<i>Palas</i>	T	Wood used for preparing <i>Havan</i> material and flowers offered to almost all deities specially <i>Lord Shiva</i> and Moon God.
<i>Macrotyloma uniflorum</i> Lam.	<i>Gahat</i>	C	New seedlings used during <i>Harela</i> festival for blessing young people and children by elders, wishing for their long life, well-being, and happiness. <i>Harela</i> is believed to be the symbol of greenery in the mountains.
Iridaceae			
<i>Crocus sativus</i> L.	<i>Kesar</i>	H	Flowers offered to almost all Gods and also used as an ingredient of <i>Havan</i> materials for all religious ceremonies.
Juglandaceae			
<i>Juglans regia</i> L.	<i>Akhrot</i>	T	Wood used for preparation of <i>Havan</i> and fruits offered to almost all deities in religious festivals and ceremonies.
Lamiaceae			
<i>Ocimum sanctum</i> L.	<i>Tulsi</i>	H	Plant is worshipped and its leaves are used in preparation of fruit mixture, called ' <i>Pancha-Amrita</i> '.
Lauraceae			
<i>Cinnamomum tamala</i> Buch-Ham.	<i>Tejpatta</i>	T	Its bark and leaves are used as ingredients of <i>Havan</i> material for purification of houses, sacred places like temples with a belief that the <i>Havan</i> will attract the positive power of nature for the happiness of households.
Fabaceae			
<i>Vigna mungo</i> L.	<i>Urad</i>	H	Paste of seeds is used for making a dish called ' <i>Bada</i> ', offered to God as special kind of

			offerings ( <i>Bhog</i> ) to God; seeds are used as a growing new seedling for ' <i>Harela</i> ' festival.
Linaceae			
<i>Reinwardtia indica</i> Dum.	<i>Pyonli</i>	S	Fresh flowers mixed with mustard and rice grains are used at the spring festival of Uttarakhand known as ' <i>Phooldei- Chhamadei</i> '. The mixture is also sprinkled over children for their well-being and happiness.
Menispermaceae			
<i>Tinospora cordifolia</i> Willd.	<i>Giloi</i>	C	Stem used for preparing <i>Havan</i> material and offered to God <i>Lord Shiva</i> during <i>Shivratri</i> and Mondays of special months called <i>Sawan</i> in special <i>pooja</i> ( <i>Parthiv-poojan</i> ).
Moraceae			
<i>Ficus religiosa</i> L.	<i>Pipal</i>	T	The leaves are used during house warming ceremony known as called ' <i>Nav-Grih pooja</i> ' and for the preparation of <i>Kalash</i> . The plant is worshiped especially on Saturday for pleasing <i>Lord Sani-Dev</i> .
<i>Ficus bengalensis</i> L.	<i>Bar</i>	T	Its leaves are used in prayer ( <i>Pooja</i> ) and the whole plant is worshiped by women for the well-being of the households.
<i>Ficus roxburghii</i> L.	<i>Timil</i>	T	Plates prepared from its leaves are used for offering ' <i>Bhog</i> ' to almost all deities besides on the occasion of marriage ceremonies
Musaceae			
<i>Musa paradisiaca</i> L.	<i>Kela</i>	H	Leaves and stems of banana are used in marriage ceremonies.
Myristicaceae			
<i>Myristica fragrans</i> Houtt.	<i>Jayfal</i>	T	Its fruits are offered to God ' <i>Lord Shiva</i> '; used as an ingredient for making <i>Havan</i> material for purification of houses and sacred places.
Myrtaceae			
<i>Eugenia caryophyllata</i> Thunb.	<i>Long</i>	T	Its seeds are used as an ingredient of <i>Havan</i> material; offered to God ' <i>Lord Ganesh</i> '
Pedaliaceae			
<i>Sesamum indicum</i> L.	<i>Til</i>	H	Its seed are used as an ingredient for preparation of <i>Havan</i> material; oil used in lighting clay lamps for ceremonies; newly grown seedlings used at the <i>Harela</i> festival for blessing young people and children by elders.
Piperaceae			
<i>Piper betle</i> L.	<i>Pan</i>	C	Its leaves are offered with clove, betel nut, and cardamom to God ' <i>Lord Ganesh</i> ' during religious functions.
Poaceae			
<i>Cynodon dactylon</i> L.	<i>Doob</i>	G	Its leaves are used during worship of God ' <i>Lord Ganesh</i> ' and on all religious ceremonies.
<i>Dendrocalamus strictus</i> Roxb.	<i>Bans</i>	G	Calms of non-flowering bamboo are used in religious ceremonies and funeral rites.
<i>Hordeum valgure</i> L.	<i>Jau</i>	G	Its seeds are used as an ingredient of <i>Havan</i> material; seedlings are used at the <i>Harela</i> festival by elders for blessing the children.
<i>Oryza sativa</i> L.	<i>Dhan</i>	G	Its seeds are used in preparing sweets, called ' <i>Kheer</i> ' which is offered to Gods; newly grown seedlings are used in the ' <i>Harela</i> ' festival by elders for blessing the children for their well-being and happiness.
<i>Triticum aestivum</i> L.	<i>Gehun</i>	G	Grain flour is used in preparing the ' <i>Bhog</i> ' in various religious ceremonies and rituals which is offered to almost all deities; newly grown seedlings are used at the ' <i>Harela</i> ' festival by the elders for blessing children.
<i>Zea mays</i> L.	<i>Makka</i>	G	Its newly grown seedlings are used in ' <i>Harela</i> ' festival. It is grown one week before the festival; fruits are offered to local deities, called ' <i>Eist Devda</i> '
<i>Saccharum officinale</i> L.	<i>Ganna</i>	G	Its stem is used in making the statue of Goddess ' <i>Laxmi</i> ' during the famous Hindu festival, <i>Deepawali</i> , and the stem juice is used for the preparation of various sweet dishes which are offered to almost all deities during the various religious ceremonies and rites.
<i>Eragrostis cynosuroides</i> Retz.	<i>Kusha</i>	G	Whole plant of it is used in funeral rites.
Puniacaceae			
<i>Punica granatum</i> L.	<i>Anar</i>	T	Its fruits are offered as ingredients for the preparation of mixed fruit offering known as ' <i>Panch-fal</i> ' to almost all deities in religious ceremonies.
Rosaceae			
<i>Malus pumila</i> Mill.	<i>Seb</i>	T	Its fruits are offered as ingredients for the preparation of mixed fruit offering known as ' <i>Panch-fal</i> ' to almost all deities in religious ceremonies.
<i>Prunus cerasoides</i> D. Don	<i>Payan/ Padam</i>	T	Its leaves are used in the preparation of <i>Kalash</i> . It is placed at entry gates in the wedding hall. The wood is used as alternative of <i>Sandalwood</i> in ceremonies and functions.
<i>Prunus persica</i> Benth. Hook.	<i>Aru</i>	T	Its fruits are offered as ingredients for the preparation of mixed fruit offering known as ' <i>Panch-fal</i> ' to almost all deities in religious ceremonies.
Rutaceae			
<i>Aegle marmelos</i> L.	<i>Bel</i>	T	Its leaves are offered to God ' <i>Lord Shiva</i> ' at <i>Shiv-Ratri</i> festival.
<i>Citrus sinensis</i> Blanco.	<i>Malta</i>	T	Its fruits are offered as ingredients for the preparation of mixed fruit offering known as ' <i>Panch-fal</i> ' to almost all deities in religious ceremonies.
<i>Zanthoxylum armatum</i> DC.	<i>Timur</i>	S	Mature stems of it one kept in entry hall of a house to prevent the entry of evil spirits.
Solanaceae			
<i>Datura stramonium</i> L.	<i>Dhatura</i>	H	Its flowers and fruits are offered to God ' <i>Lord Shiva</i> ' and are used in magico-religious belief.

<i>Capsicum annum</i> L.	<i>Lalmirch</i>	H	Mixture of whole seeds with <i>Brassica nigra</i> is prepared. This mixture is used to ward off evil spirits and evil eyes from babies and is used in a magico-religious belief.
Scrophulariaceae			
<i>Verbascum thapsus</i> L.	<i>Ekalveer</i>	H	Whole plant is used in magico-religious belief.
Urticaceae			
<i>Urtica dioica</i> L.	<i>Bichhu Ghas</i>	H	A pitch of root (3-4 cm) enfolded and tied in black or blue clothe to prevent children from evil spirits during long journey.
Zingiberaceae			
<i>Curcuma domestica</i> Val.	<i>Haldi</i>	H	Its paste of tuber is used in marriage ceremony and other rituals.
<i>Elettaria cardamomum</i> L.	<i>Elaichi</i>	H	Its seeds are mixed in the preparation of <i>Havan</i> material and used in religious ceremonies.

T= Tree; S=Shrub; H= Herb; G= Grass; C= Climber

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