



## Himalayan botanicals in rituals: Sacred plants of Almora, Uttarakhand

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### Abstract

India's large population and multicultural traditions have created a rich heritage of plant worship, reflecting a deep bond between people and nature. This tradition is powerful in Uttarakhand, where plants hold a significant role in religious ceremonies, and people believe plants and their derivatives possess spiritual and medicinal properties. The traditional knowledge of using these plants in various rituals and ceremonies has been transmitted through generations, contributing to their conservation, as communities refrain from harming plants considered sacred. However, modernization has resulted in a gradual decline in traditional practices, with the new generations increasingly preferring plastic alternatives. This study endeavors to revitalize these rituals and disseminate knowledge of plants employed in these practices to younger generations, thereby safeguarding cultural traditions and their associated benefits. In the present investigation, 12 festivals were studied, during which a total of 40 sacred plants were found to be used, many of which possess medicinal properties. These plants belong to 24 different families. Among them, Poaceae showed the highest dominance (8), followed by Fabaceae (6) & Arecaceae (3). The most commonly used plant parts were leaves (20%), whole plants (18%) & seeds (12%).

**Keywords:** Sacred plants, medicinal plants, plant biodiversity, conservation, traditional knowledge system

### Introduction

India, home to billions of people, exhibits a rich cultural diversity that encompasses various religions, languages, geographical regions, and festivals. One fascinating aspect of diversity is the longstanding tradition of plant worship. This tradition beautifully reflects the close connection between people and nature. Along with the evolution of understanding about the importance of different components of nature, people started to develop different procedures to show respect towards them and seek blessings from them. Over time, these procedures evolved into rituals that now hold a central place in the traditions. They provide a way to connect with the divine, marking significant life events from birth to death through ceremonial practices.

In Uttarakhand, generations have held deep religious respect for plants. Various plants and their products, being used by humans in daily life, also hold significance in rituals such as havan (the burning of herbal ingredients) (Singh *et al.*, 2024) [20] as well as in other religious activities like katha, vrat, pathpuja, and pitrashradha ceremonies. In Hindu mythology, none of the festivals, rituals, or religious ceremonies is complete without the involvement of plants and plant products (Mehta *et al.*, 2008) [9]. Whole plant or its parts have been used in almost all ceremonies in the Uttarakhand culture for decades. This traditional knowledge of using plants in different rituals has been inherited from our ancestors and conserved across generations. The lifesaving nature of plants and their role in the healthcare system, food, and many religious occasions may be the basis of conserving and worshipping these plants (Mehra *et al.*, 2014) [8]. Based on ancient scriptures, a wide variety of plants, such as *Ficus religiosa*, *Azadirachta indica*, and *Ocimum tenuiflorum*, are known to possess divine qualities and are therefore used in numerous religious activities (Negi, 2012) [11].

A lack of knowledge and diminishing interest in the sacred rituals is causing the younger generation to drift away from their cultural roots. This disconnect is one of the contributing factors to the growing prevalence of modern health issues, as many are unaware of the healing benefits embedded in these rituals, which primarily utilize the plants of medicinal potential. The primary objective of this work is to promote traditional rituals and document the knowledge of plants used in these practices, ensuring that future generations can benefit from this wisdom and remain connected to our cultural heritage.

### Materials and Methods

The research was conducted in Uttarakhand, a state in India known for its diverse geography, ranging from plains to mountain ranges and snowy Himalayan peaks. It has many Hindu sacred sites and holds significant mentions in ancient literature like the Mahabharata and the Puranas. Almora, the study site, is a district in Uttarakhand and lies at the foothill of the Himalayan region between 29.35° N and 29.85° N latitude and 79.30° E to 80.10° E longitude. It is known for its rich biodiversity, varied altitudes, and deep-rooted cultural and religious traditions. The people in the area have strong religious faith and also rely on traditional knowledge systems, particularly in the context of religious practices and rituals.

This study utilized a qualitative and ethnographic approach to explore the role of Himalayan botanicals in various rituals in Almora, Uttarakhand. Fieldwork, participant observation, and interviews were employed to collect data from the study site to get the integrated perspective of anthropology, ethnobotany, and religious rituals. Extensive field visits were organized in the study area to observe the ceremonies and rituals of the inhabitants. People above 25 years old were randomly selected and surveyed using a questionnaire. Based on these surveys, information was collected regarding

the plants and their parts used in various ceremonies. The collected data were initially identified by local names and subsequently verified using herbarium records, photographs, and relevant literature (Kumar, 2009; Sahu *et al.*, 2013; Pandey & Pandey, 2016) [6, 12, 16].

### Results and discussion

We observed a total of 12 festivals/ceremonies, in which plants are used in various ways in different rituals [Table-1, Fig. 1]. The people of the study area hold strong beliefs in deities and incorporate various plants in their socio-cultural practices. Based on the survey and field exploration, a total of 40 sacred plants belonging to 24 families were recorded,

including herbs (22), trees (14), and shrubs (4) [Table 2]. *Hordeum vulgare* and *Tagetes patula* were the most frequently used plants in rituals. Most of the plants belong to the Poaceae family (8 plants), followed by Fabaceae (6 plants), Arecaceae (3 plants), Brassicaceae (2 plants), etc. The most used parts were leaves (20%), followed by whole plants (18%), seeds (18%), flowers (14%), stem (12%), wood (9%), fruits (8%), and seed fiber (1 %) [Fig. 2]. Additionally, the listed plants were also noted for their folk medicinal uses. The people of the study area rely on these plants for traditional rituals and primary healthcare, drawing heavily on indigenous knowledge for the medicinal use of herbs.



**Fig 1:** Various ceremonies and rituals in the Almora district, Uttarakhand, highlighting the role of the plants in these traditional practices

**Table 1:** Plants used in various festivals/ceremonies in the Almora district, Uttarakhand

| Festivals/Ceremonies | Plant Used  |
|----------------------|---|
| Basant Panchami      | <i>Brassica campestris</i> , <i>Tegetes patula</i> , <i>Triticum aestivum</i> , <i>Hordeum vulgare</i> , <i>Oryza sativa</i> , <i>Santalum album</i> , <i>Prunus cerasoides</i>   |
| Harela               | <i>Triticum aestivum</i> , <i>Brassica campestris</i> , <i>Hordeum vulgare</i> , <i>Zea mays</i> , <i>Macrotyloma uniflorum</i> , <i>Vigna mungo</i> , <i>Cicer arietinum</i> , <i>Glycine max</i> , <i>Oryza sativa</i> , <i>Cynodon dactylon</i>  |
| Nanda Devi           | <i>Musa paradisiaca</i> , <i>Arundinaria falcata</i> , <i>Gossypium hirsutum</i> , <i>Tegetes patula</i> , <i>Prunus cerasoides</i>   |
| Makar Sankranti      | <i>Vigna mungo</i> , <i>Oryza sativa</i> , <i>Sesamum indicum</i> , <i>Triticum aestivum</i> , <i>Saccharum officinarum</i> , <i>Eleusine coracana</i> , <i>Fagopyrum esculentum</i> , <i>Ficus auriculata</i>  |
| Phool Dei            | <i>Tegetes patula</i> , <i>Brassica campestris</i> , <i>Reinwardtia indica</i> , <i>Rhododendron arboreum</i> , <i>Oryza sativa</i> , <i>Bergenia ciliata</i> , <i>Raphanus sativus</i> , <i>Prunus domestica</i> , <i>Rosa indica</i>  |
| Ghee Sankranti       | <i>Cynodon dactylon</i> , <i>Vigna mungo</i> , <i>Colocasia esculenta</i>   |
| Vat Savitri          | <i>Ficus benghalensis</i> , <i>Ficus religiosa</i> , <i>Cicer arietinum</i> , <i>Hordeum vulgare</i> , <i>Cynodon dactylon</i> , <i>Mangifera indica</i>  |
| Marriage             | <i>Curcuma longa</i> , <i>Santalum album</i> , <i>Ficus benghalensis</i> , <i>Ficus religiosa</i> , <i>Ocimum sanctum</i> , <i>Prunus cerasoides</i> , <i>Cynodon dactylon</i> , <i>Piper betel</i> , <i>Areca catechu</i> , <i>Mangifera indica</i> , <i>Musa paradisiaca</i> , <i>Saraca asoca</i> , <i>Arundinaria falcata</i> , <i>Tegetes patula</i> , <i>Oryza sativa</i> |
| Navratri             | <i>Mangifera indica</i> , <i>Cocos nucifera</i> , <i>Piper betel</i> , <i>Areca catechu</i> , <i>Hordeum vulgare</i> , <i>Cynodon dactylon</i> , <i>Ocimum sanctum</i>  |
| Diwali               | <i>Saccharum officinarum</i> , <i>Oryza sativa</i> , <i>Ocimum sanctum</i> , <i>Sesamum indicum</i> , <i>Brassica campestris</i> , <i>Musa paradisiaca</i> , <i>Mangifera indica</i>  |
| Holi                 | <i>Ficus religiosa</i> , <i>Mangifera indica</i> , <i>Azadirachta indica</i> , <i>Bombax ceiba</i> , <i>Brassica campestris</i> , <i>Butea monosperma</i> , <i>Triticum aestivum</i> , <i>Cicer arietinum</i>   |
| Tulsi Vivah          | <i>Ocimum sanctum</i> , <i>Hordeum vulgare</i> , <i>Curcuma longa</i> , <i>Piper betel</i> , <i>Areca catechu</i>   |

**Table 2:** Religious and traditional medicinal uses of sacred plants in the study site. (T= Tree, S= Shrub, H= Herb)

| S. No | Botanical Name               | Common name          | Family       | Life form | Parts used in rituals | Religious uses  | Traditional remedies   |
|-------|------------------------------|----------------------|--------------|-----------|-----------------------|---|--|
| 1     | <i>Tegetes patula</i>        | <i>Genda</i>         | Asteraceae   | H         | Flower                | Flowers are used to prepare garland and floral hangings (torans) during religious events, and are also used as an offering to deities.  | Flower extract is used as a remedy for ear infections.<br>Leaves are used as an antiseptic.  |
| 2     | <i>Hordeum vulgare</i>       | <i>Jau</i>           | Poaceae      | H         | Whole plant, Seeds    | Plant together with cow dung is fixed in the entrance of the home and temple in Basant Panchami. Seeds are used in the sacrifice in the yajna.<br>As an ingredient of the seven grains (saptanaja), it is sown in the Harela festival.  | Barley water is often used to improve digestion.   |
| 3     | <i>Cynodon dactylon</i>      | <i>Doob, Durva</i>   | Poaceae      | H         | Leaf                  | It is used in the sacred veneration of Lord Ganpati and for praying to deities and ancestors. Leaves are traditionally used to apply turmeric to the body during sacred rituals.  | A mixture of Doob grass, turmeric, and alum is applied to treat sprains, and leaf juice is used in wound healing.  |
| 4     | <i>Zea mays</i>              | <i>Bhutta</i>        | Poaceae      | H         | Whole plant, Seeds    | As an ingredient of the seven grains (saptanaja), it is sown in the Harela basket, representing gratitude for the harvest.  | Flour roti is consumed to aid digestion.   |
| 5     | <i>Brassica campestris</i>   | <i>Sarsoon</i>       | Brassicaceae | H         | Seeds, Flowers        | Seed oil is used in lamp lighting in front of deities.<br>Flowers are used as offerings in harvest festivals.   | Seed oil is applied to cure Bone fractures (Bai <i>et al.</i> , 2014) <sup>[3]</sup> .<br>Warm mustard oil is used to relieve muscle fatigue, rheumatic pain, and joint stiffness. |
| 6     | <i>Macrotyloma uniflorum</i> | <i>Gahat, Kulath</i> | Fabaceae     | H         | Whole plant, Seed     | The ingredients of the seven grains (saptanaja) in harvest festivals.   | Gahat dal is often consumed by people with kidney stones, as it is traditionally believed to aid in dissolving and flushing out the stones from the kidneys.                       |
| 7     | <i>Glycine max</i>           | <i>Bhatt</i>         | Fabaceae     | H         | Whole plant, Seeds    | The ingredients of the seven grains (saptanaja) in harvest festivals.   | Traditionally used to cure jaundice, sleeping disorders, menopausal symptoms & inflammation (Singh & Sharma, 2020) <sup>[21]</sup> .   |
| 8     | <i>Oryza sativa</i>          | <i>Chawal, Dhan</i>  | Poaceae      | H         | Whole plant, Seeds    | Sown in the Harela festival.<br>Seeds are applied on the forehead during worship (akshat).<br>Seeds with flowers are traditionally scattered over doorsteps as a form of worship and blessing in Phooldei.<br>The key ingredient to prepare traditional offering food 'saya' in Phool dei.<br>Paste is used in Diwali for making aipan. | Rice flour, together with ghee, is used to maintain body warmth.   |
| 9     | <i>Triticum aestivum</i>     | <i>Gehun</i>         | Poaceae      | H         | Whole plant, Seed     | Sown in the Harela festival.<br>Mixed with jaggery to prepare a traditional offering dish, ghughuti in Makar Sankranti.<br>Wheat ears are offered in rituals of the Holika dahan to show gratitude for a successful harvest.  | Wheat juice is traditionally used as a blood purifier to reduce blood cholesterol levels.  |
| 10    | <i>Eleusine coracana</i>     | <i>Madua</i>         | Poaceae      | H         | Whole plant, Seed     | An ingredient of the seven grains (Saptanaja).<br>A part of the traditional local food offered to   | Ragi flour paste is used to reduce skin burn and inflammation.   |

|    |                              |                            |               |   |                                   |  |   |
|----|------------------------------|----------------------------|---------------|---|-----------------------------------|--|---|
|    |                              |                            |               |   |                                   | deities.   | Ragi chapati is used as a nutritional supplement for the sick and elderly.  |
| 11 | <i>Fagopyrum esculentum</i>  | <i>Kuttu</i>               | Polygonaceae  | H | Seed                              | Flour is used as a staple food during fasting days ( <i>vrat</i> ) as considered a satvik grain.   | Tea made from buckwheat leaves is used to regulate blood sugar. Leaves cooked in an iron vessel are given to anemic patients (Ratan & Kothiyal, 2011) <sup>[13]</sup> . |
| 12 | <i>Ficus auriculata</i>      | <i>Timil</i>               | Moraceae      | T | Leaf                              | For preparing the plate and bowl used in a traditional feast, and offering.  | Crushed leaves are applied to treat cuts and boils. Bark Paste is used for joint pain and swelling.   |
| 13 | <i>Raphanus sativus</i>      | <i>Mooli</i>               | Brassicaceae  | H | Flower                            | A part of the traditional offering in phool dei.   | Leaf and root extracts are used in jaundice and are believed to cool the body.<br>Boiled leaf roti is used in post-delivery recovery.                                   |
| 14 | <i>Prunus domestica</i>      | <i>Plum</i>                | Rosaceae      | T | Flower                            | Offered to local deities and village gods during the harvest festival, Harela.   | Plum intake is recommended to improve blood and gastrointestinal health.  |
| 15 | <i>Rosa indica</i>           | <i>Gulab</i>               | Rosaceae      | S | Flower                            | For preparing garlands and for offerings to deities.   | Rose extract is used to treat minor skin problems. Petals, as an astringent, are used in eye washes and gargles for a sore throat.                                      |
| 16 | <i>Rhododendron arboreum</i> | <i>Buransh</i>             | Ericaceae     | T | Flower                            | Flower juice is offered to deities and at the doorsteps in Phool Dei.<br>It is also a traditional drink during community gatherings.   | Flower decoction is used to treat diarrhea and dysentery, and is also used as a cardiac tonic.  |
| 17 | <i>Vigna mungo</i>           | <i>Kali dal / Urad dal</i> | Fabaceae      | H | Seed                              | A part of the charitable donation in Makar Sankranti.<br>Used in offering, prasad, and festival dishes.  | Urad dal paste is applied to a painful joint to reduce inflammation and pain. Urad dal cooked with jaggery and ghee is believed to strengthen stamina.                  |
| 18 | <i>Ficus religiosa</i>       | <i>Peepal</i>              | Moraceae      | T | Whole Tree, Leaves                | The peepal tree is considered sacred and a symbol of marital rituals. The tree is worshipped by married women in Vat Savitri, as believed to bring good fortune and longevity.                 | Bark decoction is used to treat cough and asthma. Leaves are used to heal skin wounds, and twigs are used as a toothbrush in oral care.                                 |
| 19 | <i>Prunus cerasoides</i>     | <i>Paiyan, Padam</i>       | Rosaceae      | T | Whole Tree, Leaves, Flowers, Wood | Wood is used as holy firewood in fire rituals of Holika Dahan and yajnas. Petals are offered at doorsteps in Phool Dei, and Branches are used to prepare the ceremonial platform/lagan mandap. | Bark paste is used to treat itchy skin. Flower tea for digestive weakness.  |
| 20 | <i>Piper betel</i>           | <i>Paan</i>                | Piperaceae    | H | Leaf                              | Leaves are used in ritual offerings. Together with the Areca nut, Betel leaves are placed on the kalash and puja thali, representing life and freshness.                                       | The leaf paste is used externally for healing wounds and inflammation.  |
| 21 | <i>Mangifera indica</i>      | <i>Aam</i>                 | Anacardiaceae | T | Leaves, Wood, Fruit               | Dry wood is used in the holy fire during the marriage ceremony and Holi.<br>Leaves are used in a sacred utensil, the kalash.<br>Leaves are tied at the main gate of the house and              | Crushed leaves for their antiseptic properties are used to cure wounds and cuts.<br>Raw mango is often used to prepare  |

|    |                              |                      |               |   |                            |   |  |
|----|------------------------------|----------------------|---------------|---|----------------------------|---|--|
|    |                              |                      |               |   |                            | the stage of deities (Mandapa).<br>Fruits and leaves are offered to God as part of the five sacred fruits (Panch-Fal) and five sacred leaves (Panch-Pallav).  | pickles due to its appetite-stimulating properties and to promote digestion.   |
| 22 | <i>Musa paradisiaca</i>      | <i>Kela</i>          | Musaceae      | H | Whole Plant, Fruit, Leaves | The entire plant is considered sacred and is often used in the preparation of the stage of deities (mandap) during auspicious events to represent prosperity and good fortune. The plant is used to make goddess idols in Nandaastami. Leaves are used as natural plates to serve blessed food (prasad).  | Ripe fruit is consumed to improve digestion and relieve constipation. Decoction of banana flower helps to lower blood sugar levels.  |
| 23 | <i>Cocos nucifera</i>        | <i>Naryal</i>        | Arecaceae     | T | Fruit                      | Fruit ceremoniously placed atop a sacred utensil (Kalash) decorated with mango leaves is installed during Navratri. The fruit is considered Shriphal, meaning the "fruit of the God", and is used as an alternative to animal sacrifice. Fruit is also a part of the five sacred dry fruits (Panch-Meva). | Oil is used for treating dry skin, wounds, burns, and rashes. Warm coconut oil is used in therapeutic massage to alleviate joint pain and reduce stiffness.                                    |
| 24 | <i>Saccharum officinarum</i> | <i>Ganna</i>         | Poaceae       | H | Stem                       | Used to make an idol of Goddess Laxmi in Diwali. Stem is used in the chholika ritual of the marriage ceremony.  | Juice is used in jaundice and other liver ailments. Sugarcane juice, together with bael ( <i>Aegle marmelos</i> ) or giloy ( <i>Tinospora cordifolia</i> ), is used for indigestion and fever. |
| 25 | <i>Areca catechu</i>         | <i>Supari,</i>       | Arecaceae     | T | Fruit                      | In the marriage ceremony, fruit is used in the symbolic transfer of the bride and the kanyadaan ritual. Areca nut is offered as an ingredient of a sacred offering (Naivedya) and gifts to priests (dakshina).  | It is a prevalent traditional herbal medicine that is chewed to separate the collected fluid in the alimentary canal and for killing worms (Ansari <i>et al.</i> ,2021) <sup>[2]</sup> .       |
| 26 | <i>Arundinaria falcata</i>   | <i>Ringal Bamboo</i> | Poaceae       | H | Stem                       | Used to craft ritual baskets to carry offerings (fruits, flowers, grains). Used in pandal decoration during religious events.   | Young shoots are believed to support digestion, improve appetite, and serve as a natural detoxifier.   |
| 27 | <i>Azadirachta indica</i>    | <i>Neem</i>          | Meliaceae     | T | Leaves, Stem/Wood          | Neem leaves and wood are often used in the ceremonial bonfire of Holi.  | Leaf is used in various skin diseases, and bark is used to cure various oral health issues.  |
| 28 | <i>Bergenia ciliata</i>      | <i>Pashanbheda</i>   | Saxifragaceae | H | Flowers                    | Offering at the Phool Dei festival, as its blooming coincides with this festival.   | Stem is used traditionally in dissolving kidney stones (Khan & Kumar, 2016) <sup>[5]</sup> .   |
| 29 | <i>Bombax ceiba</i>          | <i>Semal</i>         | Malvaceae     | T | Fruit, Stem/Wood           | Its fiber is used as an alternative to cotton fiber. The stem/branch is used as the central pole in the Holika Dahan bonfire, symbolizing the burning of evil.  | Bark or flower paste is applied topically to treat wounds, boils, and skin inflammations. Bark paste is used as a remedy for cattle earache.   |
| 30 | <i>Butea monosperma</i>      | <i>Palash, Dhak</i>  | Fabaceae      | T | Leaves,                    | Wood is used in Havana material.  | Flower juice is useful in eye  |

|    |                            |                        |               |   |                     |   |   |
|----|----------------------------|------------------------|---------------|---|---------------------|---|---|
|    |                            |                        |               |   | Stem/Wood           | Leaves are used in making plates and bowls for religious rituals.   | ailments (Burli & Khade, 2007) [4].   |
| 31 | <i>Cicer arietinum</i>     | <i>Chana</i>           | Fabaceae      | H | Seeds               | An ingredient of the seven grains (saptanaja) sown in the Harela basket. Used as an offering and a feast during harvest festivals.  | Chickpea flour (besan) is used in the topical treatment of skin problems.   |
| 32 | <i>Colocasia esculenta</i> | <i>Arbi</i>            | Araceae       | H | Stem/Corn, Leaves   | Served as a ritual meal during the Ghee Sankranti. Cooked underground stem is consumed by devotees during the vrata (Fast)  | Stem extract is used to stop bleeding from cuts (Reyad-ul-Ferdous <i>et al.</i> , 2015) [15].   |
| 33 | <i>Curcuma longa</i>       | <i>Haldi, Turmeric</i> | Zingiberaceae | H | Stem/Rhizome        | Rhizome paste is considered auspicious and applied before a holy bath during marriage. Paste is also applied to God/Goddess idols and sacred objects during religious ceremonies.     | Paste is applied externally to treat arthritis, joint pain, and muscle inflammation, and in skin infections.  |
| 34 | <i>Ficus benghalensis</i>  | <i>Bargad, Vat</i>     | Moraceae      | T | Whole Plant, Leaves | The whole tree is worshipped by married women in Vat Savitri. Leaves are used as a sacred offering to deities.  | The leaf is consumed to boost the immune system and as a remedy for vaginal discharges (Murugesu <i>et al.</i> , 2021) [10].  |
| 35 | <i>Gossypium hirsutum</i>  | <i>Kapas, Rui</i>      | Malvaceae     | S | Seed fibres         | Cotton wicks are used in lamps (diyas) during ceremonial worship. Cotton fabric is used to wrap sacred items presented during the festival, symbolizing purity and sanctity.          | The root is given to newborn babies and sick or rachitic children, to strengthen them (Al-Snafi, 2018) [1]  |
| 36 | <i>Ocimum sanctum</i>      | <i>Tulsi</i>           | Lamiaceae     | S | Whole Plant, Leaves | The whole plant is sacred. Leaves are used as an offering and in the preparation of a sacred mixture, Pancha-Amrita.  | Leaf extract is consumed to cure coughs, colds, bronchitis, and asthma. It is considered a natural antipyretic.   |
| 37 | <i>Reinwardtia indica</i>  | <i>Basanti</i>         | Linaceae      | S | Flowers             | Yellow flowers are offered at the doorstep during Phool Dei.  | The stem paste is also applied to cattle as a wound-healing agent against maggot infection (Shah <i>et al.</i> , 2008) [18].  |
| 38 | <i>Santalum album</i>      | <i>Chandan</i>         | Santalaceae   | T | Stem/Wood           | Paste is applied on the forehead (tilak) during religious ceremonies. Wood paste is mixed with water for the holy bath of the deities and also during the haldi ceremony in marriage. | Wood paste is used in healing skin problems due to its antiseptic and anti-inflammatory properties.   |
| 39 | <i>Saraca asoca</i>        | <i>Ashoka</i>          | Fabaceae      | T | Flowers, Leaves     | Flowers and leaves are used in the decoration of ritual spaces.   | Almost all parts of the plant are considered pharmacologically valuable for curing bacterial infections, skin problems, tumours, worm infestations, cardiac and circulatory problems (Singh <i>et al.</i> , 2015) [22]. |
| 40 | <i>Sesamum indicum</i>     | <i>Til</i>             | Pedaliaceae   | H | Seeds               | Used as a sacred offering during Makar Sankranti.   | Sesame oil aids in improving digestion and relieving constipation.  |

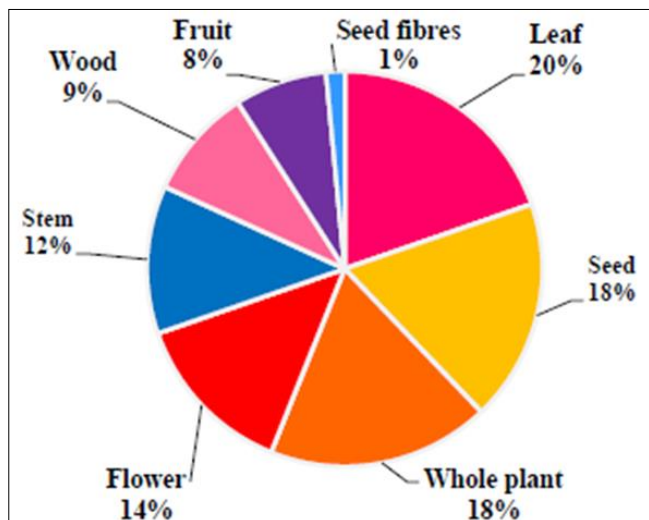


Fig 2: Plant parts utilized in religious ceremonies (in percentage)

Plant worship is one of the oldest forms of worship in the world (Samant *et al.*, 2020) [17]. Traditional worship practices emphasize the deep bond between humans and nature, fostering a sense of connection to their ancestral roots. The natural elements are irreplaceable components of festivals, religious ceremonies, and rituals. There are differences in how people practice their religions and rituals, especially how they use religious plants. Our ancestors, perhaps driven by the fear of the extinction of plants, associated various gods and goddesses with these plants for their conservation and categorized them as sacred. Strong religious beliefs in sacred plants and groves have played a significant role in the conservation of plant species across various regions (Ray & Ramachandra, 2010) [14]. Some rural communities actively preserve certain forested areas, believing them to be the sacred abodes of their deities. Numerous medicinally important plants were commonly used by rural communities in the sacred groves of central India as a part of folk practices (Sahu *et al.*, 2013) [16]. The Tharu people hold strong beliefs in deities, rituals, and ceremonies, and incorporate various plants into their socio-cultural practices (Lata *et al.*, 2022) [7]. The practice of plant worship, or viewing plants as abodes of deities within traditional culture, carries deep ecological significance and reflects a rich materialist philosophy regarding the relationship between humans and plants (Sharma *et al.*, 2012).

With the advent of modernization, traditional knowledge and rituals have become limited to only a few individuals, such as elders, priests (pandits), and vendors of traditional products. As times change, the younger generation appears less inclined to engage in these rituals and ceremonies, often opting for more convenient alternatives. As a consequence, traditional knowledge related to many such products is vanishing day by day. It is the need of the hour to preserve and pass on traditional knowledge to foster a continued sense of protection and responsibility toward these practices, thereby ensuring the preservation of plants through religious reverence.

## Conclusion

Plants hold a profound significance in the celebrations and traditions of various cultures worldwide, symbolizing diverse aspects of life and spirituality. The plant-based traditions associated people with nature and their beliefs,

making these rituals even more meaningful. Being integral to rituals, plants connect us with our spiritual side, while also supporting our physical well-being through their medicinal properties, which offer healing and relief during illness. Our ancestors initiated these plant-based rituals for our well-being, recognizing the medicinal properties of the plants used. Unfortunately, young generations today are largely unaware of the valuable benefits embedded in traditional knowledge and rituals, placing this cultural heritage at risk of being lost. The present study is an effort to preserve this valuable heritage and ensure its transmission to our upcoming generations.

**Conflict of Interest:** None declared

## References

1. Al-Snafi AE. Chemical constituents and pharmacological activities of *Gossypium herbaceum* and *Gossypium hirsutum*. *IOSR Journal of Pharmacy*,2018;8(5):64–80.
2. Ansari A, Mahmood T, Bagga P, Ahsan F, Shamim A, Ahmad S, *et al.* *Areca catechu*: A phytopharmacological legwork. *Food Frontiers*,2021;2:163–183.
3. Bai S, Malik A, Seasotiya L, Bharti P, Dalal S. *In vitro* antioxidant activity, total phenolic content, and therapeutic potential of *Brassica campestris* L. seed in inhibiting human pathogens. *International Journal of Recent Advances in Pharmaceutical Research*,2014;4(2):15–24.
4. Burli DA, Khade AB. A comprehensive review on *Butea monosperma* (Lam.) Kuntze. *Pharmacognosy Reviews*,2007;1(2):333–337.
5. Khan MY, Kumar V. Phytopharmacological and chemical profile of *Bergenia ciliata*. *International Journal of Phytopharmacology*,2016;6(5):90–98.
6. Kumar B. Major religious plants of Rudraprayag district (Garhwal), Uttarakhand, India. *Ethnobotanical Leaflets*,2009;12:6.
7. Lata S, Sharma S, Maurya C. Traditional uses of plants in various rituals and ceremonies among Tharu tribe of Udham Singh Nagar, Kumaon Himalaya, Uttarakhand, India. *Plant Archives*,2022;22(1):334–342.
8. Mehra A, Bajpai O, Joshi H. Diversity, utilization and sacred values of ethnomedicinal plants of Kumaun Himalaya. *Tropical Plant Research*,2014;1(3):80–86.
9. Mehta PS, Pandey A, Bhatt KC, Sharma AK. Inventorying plant genetic resources of religious importance and their in-situ conservation: A case study of farming communities of Kumaon Himalaya, Uttarakhand, India. *Indian Journal of Plant Genetic Resources*,2008;21(2):146–154.
10. Murugesu S, Selamat J, Perumal V. Phytochemistry, pharmacological properties and recent applications of *Ficus benghalensis* and *Ficus religiosa*. *Plants*,2021;10(12):2749.
11. Negi CS. Culture and biodiversity conservation: Case study from Uttarakhand, Central Himalaya. *Indian Journal of Traditional Knowledge*,2012;11(2):273–278.
12. Pandey D, Pandey VC. Sacred plants from ancient to modern era: Traditional worship towards plant conservation. *Tropical Plant Research*,2016;3(1):136–141.

13. Ratan P, Kothiyal P. *Fagopyrum esculentum* Moench (common buckwheat): An edible plant of the Himalayas – A review. *Asian Journal of Pharmacy and Life Sciences*,2011;1(4):426–442.
14. Ray R, Ramachandra TV. Small sacred groves in local landscape: Are they really worthy for conservation? *Current Science*,2010;98(9):1178–1180.
15. Reyad-ul-Ferdous M, Arman MSI, Tanvir MMI, Sumi S, Siddique KMMR, Billah MM, *et al.* Biologically potential pharmacological and phytochemical properties of medicinal plants of *Colocasia esculenta*: A comprehensive review. *American Journal of Clinical and Experimental Medicine*,2015;3(5-1):7–11.
16. Sahu PK, Kumari A, Sao S, Singh M, Pandey P. Sacred plants and their ethnobotanical importance in Central India: A mini review. *International Journal of Pharmacy and Life Sciences*,2013;4(8):2910–2914.
17. Samant SS, Devi K, Puri S, Singh A. Diversity, distribution pattern and traditional knowledge of sacred plants in Kanawar Wildlife Sanctuary, Himachal Pradesh, Northwestern Himalaya. *Indian Journal of Traditional Knowledge*,2020;19(3):642–651.
18. Shah R, Pande PC, Tiwari L. Traditional veterinary herbal medicines of western part of Almora district, Uttarakhand Himalaya. *Indian Journal of Traditional Knowledge*,2008;7(2):355–359.
19. Sharma UK, Pegu S, Hazarika D, Das A. Medico-religious plants used by the Hajong community of Assam, India. *Journal of Ethnopharmacology*,2012;143(3):787–800.
20. Singh K, Kumar P, Kumar B, Gairola S. Study on magico-religious plants in Paddari tribe of Jammu and Kashmir, India. *Ethnobotany Research and Applications*,2024;27:1–20.
21. Singh M, Sharma D. Health benefits of *Glycine max* (soybean). *Food Technology and Nutrition*,2020;69–86.
22. Singh S, Krishna TA, Kamalraj S, Kuriakose GC, Valayil JM, Jayabaskaran C, *et al.* Phytomedicinal importance of *Saraca asoca* (Ashoka): An exciting past, an emerging present and a promising future. *Current Science*,2015;109(10):1790–1801.