



RESEARCH ARTICLE

Conservation of plant biodiversity through temples and associated sacred groves in Jammu district

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Abstract

This paper surveys the sacred plants nurtured in temples, presenting information on the number of plants grown and their socio-cultural significance. It aims to highlight the environmental principles underlying traditional conservation practices. A field survey of twenty nine temples in Jammu city, including renowned temples such as Bahu Fort, Raghunath Temple, Peer Kho, Panchbakhtar (Rupai Wala Mandir) and Ranbireswar, was conducted to enumerate traditional plants and study their cultural and ethnobotanical uses. The survey revealed a rich biodiversity of ancient sacred trees, including species like *Acacia modesta*, *Aegle marmelos*, *Butea monosperma*, *Cupressus*, *Emblica officinalis*, *Ficus benghalensis*, *Ficus religiosa*, *Millettia pinnata*, *Musa paradisiaca*, *Ocimum sanctum*, *Putranjiva roxburghii*, *Syzygium cumini*, *Terminalia arjuna* etc. A total of 83 plants were identified, spanning 44 families and 70 genera. Out of these 35 plants were used for religious purposes, 13 for ornamental purposes, 24 for edible purposes, 13 were sacred plants, 46 had miscellaneous uses and majority (66 plants) had medicinal importance. The majority of the plants belonged to the Fabaceae family followed by Moraceae family. The findings of this study provide a framework for the conservation of ethnobotanical plants found in temples and sacred groves.

Keywords: Biodiversity, ethnobotany, Jammu, sacred plants, temples, traditional conservation practices.

Introduction

“The Hindu Temple and the Environment”

Everything in the Universe belongs to the lord. Therefore take only what you need, that is set aside for you. Do not take anything else, for you to know to whom it belongs.

Isa Upanishad

(Jayshree Balachander 2015)

The Isa Upanishad remind us that God pervades everything on Earth. There is nowhere, no being, whom he does not pervade.

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Even though Hindus believe that almighty is omnipresent, they hold that spirit of god are especially concentrated in places of worship, known as devasthanas, where the supreme is venerated. Places of worship aim to uphold a healthy climate to ensure that devotion and offerings are accepted. Deterioration of the environment inside the boundaries of a devasthana may likely be seen as unpleasant to the deity and indicative of diminishing divine powers.

The tradition has been integral to Hinduism for thousands of years. However, in the current global environmental crisis, the physical world is suffering in unprecedented manners. In India, the impact is particularly striking once beautiful landscapes, now exhibit bare hillsides, contaminated rivers, piles of untreated waste, the shrinking of wild areas and the consequent extinction of animals. The above mentioned environmental issues also create significant hurdles for people which include shortage of pure water and air, depletion of natural and unexpected natural catastrophes such as floods and landslides. The Environment in many religious sites and sacred places is being negatively impacted by the arrival of large number of people which results in strain on essential services like water and personal hygiene, accumulation of significant amounts

of solid waste, increased pollution from heightened traffic, open defecation, deforestation for temporary pilgrim accommodations and disruption of habitats as crowds stray into national parks.

As Hindu followers, we must take care of the environment around our sacred places, towns, and temples. Temple leaders should ensure that the peaceful and positive atmosphere inside the temple extends to the nearby areas, positively influencing the communities we are part of.

Concept of Sacred Groves

In our country, sacred groves are special areas with trees that are important to our culture and traditions. These groves are really good for the environment because they have plants and trees that are native to the area. They are not only important for preserving nature and wildlife, but they also provide other benefits like helping the economy, being a nice place to relax, and protecting the environment. Importance of temples and sacred groves in plant conservation.

“Plant conservation is all about protecting plants and making sure they don’t disappear. This means looking after plants where they naturally grow, taking care of plant collections in gardens, teaching people about why plants are so important, stopping harmful plants from taking over, helping damaged plant populations recover, doing research and teaching other how to help plants”.

Importance of temples

Temples play a crucial role in plant conservation. Many ancient temples have preserved plants that are now extinct, thanks to their religious ceremonies and rituals involving the cultivation of these plants.

Importance of Sacred Groves

Sacred groves are fragments of forests or trees that are protected by local people because they are considered holy. These groves are important not only for the environment, providing a home for many plants and animals, but also for the people who live nearby. The communities depend on them for basic needs like firewood, food, animal feed, medicine and water. People have long-standing traditions of worshipping these trees and forests, dedicating them to their gods and goddesses, which shows the deep connection between their culture and nature.

There are very few reports on plants that had been successfully conserved in temples and sacred groves of Jammu district, J&K. So present study has been undertaken to investigate and document the flora of temples and sacred groves, and assess their role in conserving plant biodiversity in Jammu district.

Study Area

Jammu district (Fig 1), one of the 22 districts in Jammu and Kashmir, is often called the “City of temples” because of

its many religious sites. It is also important as the winter capital of the region. The city’s origins are linked to Raja Jambulochan, who founded it in the 14th Century. B.C. According to legend, he saw a tiger and a goat drinking from the same pond peacefully, which inspired him to create a city where the strong and the weak could live together in harmony. The city was initially called “Jamboo” after the Raja, but over time, it became known as Jammu.

Jammu is located at 32.73°N and 74.87°E, with an average height of 328 meters above sea level. It is located at the base of the Shivalik hills, with the Trikuta range to its northwest. The Tawi River runs through the city, separating the old parts in the north from the newer areas in the south. Jammu is about 600km away from New Delhi.

Hinduism is the main religion in Jammu, although people also practice Sikhism, Islam, and Christianity. As of 2017-2018, the district has 21 Tehsils, 852 Villages, 296 Panchayats and 20 development blocks. The district’s geography includes both plains and hills leading to hot summers and cold winters.

METHODOLOGY

Field survey by random survey method was conducted during the months of September (2023)-June (2024) covering the major seasons and definite interval to collect and identify the plants present in and around temples and associated sacred groves of Jammu district. Plants were photographed by using mobile camera (Redmi 13MP). The information on different uses of the plants which included religious, ethnomedicinal, edible, sacred and other botanical uses have been described after gathering information from temple priests, knowledgeable locals, traditional healers and temple gardeners (Mali). This survey was conducted through interview method, questionnaire approach, discussions etc.

Interview Method: Visit to different temples and associated sacred groves to collect the information regarding different uses and conservation of trees planted.

Questionnaire Method: A well-designed questionnaire was utilized to gather information from the resource persons.

Identification: Majority of the plants were identified on the spots by their vernacular names by discussions with knowledgeable locals. Plants collected during visit to various temples and associated sacred groves were identified through regional, local flora as well as from the Janaki Ammal Herbarium available online at CSIR-IIIM Jammu Site.

OBSERVATION

Approximately 29 ancient temples and associated sacred groves were surveyed. These included renowned temples such as Bawe Wali Mata, Mahakali Temple, Jiyopota Ghat, Panchbakhtar Temple (Locally known as Rupai Wala Mandir), Peerkho Cave Temple, Raghunath Temple and Shri Ranbireswar Temple etc. A detailed study was made of exploration of 83 plants species during survey of

temples and associated sacred groves in Jammu district. A total of 70 genera of 44 families were reported. They were enumerated in form of tables. A table (1) is prepared to show occurrence of each plant species (Fig 2) in various temples and associated sacred groves of Jammu district (Fig 3). Ethnobotanical uses are represented in table (2).

RESULTS AND DISCUSSIONS

An survey related to conservation of plant species in temples and associated sacred groves was conducted in district Jammu of J&K and 83 plant species belonging to 70 genera of 44 families were reported. Among the 83 plant species 67 are trees, 13 are shrubs and 3 are herbs shown in Figure 4. Most cited families of plants documented were fabaceae with 9 species followed by Moraceae (8 Species), Rutaceae (6 Species), Arecaceae (4 Species), Lamiaceae, Combretaceae,

Rosaceae, and Myrtaceae (each with 3 species), other families such as Euphorbiaceae, Anacardiaceae, Meliaceae, Apocynaceae, Malvaceae, Sapotaceae, Asclepiadaceae and Cupressaceae are represented by 2 species each, while the remaining 28 families are each represented by a single species as shown in figure 5. Among 83 plant species reported, 35 species are used for religious purposes, 13 for ornamental purposes, 24 for edible purposes, 13 were sacred plants, 46 had miscellaneous uses and majority of plants (66) possess medicinal properties. These species had been classified on the basis of their significance and roles in Hindu religious practices as shown in figure 6. The medicinal plants maintained in different temples are used by local people to treat different disorders. These temples and associated sacred groves play an important role in the conservation of plant species for future generations.



(a) Map of India



(b) Map of Jammu & Kashmir



(c) Map of Jammu District

Fig. 1: Map of the survey area (a) : India (b) : Jammu & Kashmir (c) : Jammu district.



Raghnath Mandir



Bawa Bhoto, Gajansoo



Bawe Wali Mata Mahakali Temple



Baba Jadh

Fig. 2: Pictures of different temples and associated sacred groves of Jammu district



Ziziphus mauritiana (Ber)



Dalbergia sissoo (Tali)



Bambusa arundinacea (Baans)



Cupressus (Cypress)



Cannabis Sativa (Bhang)



Emblica officinalis (Amla)



Cestrum nocturnum (Raat ki rani)



Mimusops elengi (Maulsari)



Aegle marmelos (Bel)



Ficus religiosa (Badh)



Mitragyna parvifolia (Kadamb)



Calotropis procera (Desi aak)



Platanus orientalis (Chinar)



Sapindus mukorossi (Retha)



Millettia pinnata (Sukhchain)



Tectona grandis (Sagwan)



Melia azedarach (Drenk)



Bombax ceiba (Simbal)

Fig. 3: Pictures of different plant species conserved in temples and associated sacred groves of Jammu district

61	<i>Ocimum tenuiflorum</i>	Shyama Tulsi	Herb						✓
62	<i>Phoenix dactylifera</i>	Khajur palm	Tree						✓
63	<i>Platanus orientalis</i>	Chinar	Tree	✓			✓		
64	<i>Prosopis cineraria</i>	Jhand	Tree	✓			✓	✓	
65	<i>Psidium guajava</i>	Amrood	Tree					✓	
66	Putranjiva roxburghii	Jiyopota tree	Tree		✓				✓
67	<i>Punica granatum</i>	Anar	Tree					✓	
68	<i>Rhapis excelsa</i>	Rhapis palm	Tree						✓
69	<i>Rosa chinensis</i>	Desi Gulab	Shrub		✓				
70	<i>Roystonea regia</i>	Royal palm	Tree			✓			✓
71	<i>Sapindus mukorossi</i>	Retha	Tree		✓				✓
72	<i>Sesamum orientale</i>	Til	Shrub		✓				
73	<i>Syzygium cumini</i>	Talan	Tree			✓			✓
74	<i>Tagetes erecta</i>	Gutta	Shrub			✓			
75	<i>Tamarindus indica</i>	Imli	Tree				✓		
76	<i>Tectona grandis</i>	Sagwan	Tree			✓			✓
77	<i>Terminalia arjuna</i>	Arjun	Tree			✓			✓
78	<i>Terminalia bellirica</i>	Baheda	Tree		✓				
79	<i>Terminalia chebula</i>	Harad	Tree		✓				✓
80	<i>Toona ciliata</i>	Tuno	Tree				✓		
81	<i>Thuja occidentalis</i>	Mor Pankh	Shrub						✓
82	<i>Vitex negundo</i>	Bana	Shrub						✓
83	<i>Ziziphus mauritiana</i>	Ber	Tree		✓		✓	✓	✓

1. Bawe Wali Mata Temple 2. Sacred Grove, Bawa Bhoto, Gajansoo 3. Bawa Jand Sacred Grove 4. Bawe Da Talab, Jhiri 5. Sacred Grove Baba Jitto Jhiri 6. Burj Mandir 7. Bua Dati Temple Chuhadi 8. Baba Jadh 9. Baba Paigho Ji Maharaj Pargwal, Akhnoor 10. Baba Barkhandi Sacred Grove Khari Bhalwal 11. Sacred Mango Grove Baba Ballo Mathwar 12. Sacred Kadamb Tree near temple digiana, Jammu City 13. Jai Baba Kaliveer Ji Gajansoo 14. Jandyal Mandir at Jandyal Village 15. Jiyopota Ghat 16. Kapil Muni Ashram Thumb area Gajansoo 17. Kabir kalyan kendra sacred groves samachak jammu 18. Kameshwar Temple sacred grove Akhnoor 19. Mera Mandriyan sacred Banyan tree at Rehani 20. Nag devta Temple Flora Nagbani 21. Prachin Shiyji Temple Gajansoo 22. Panjbakhtar Temple 23. Peer kho temple 24. Panjpeer Sacred Grove pargwal 25. Raghunath temple 26. Ranbireswar Temple 27. Sui Simbli, Kanachak 28. Showa Mata Mandir 29. Tahli Mata Mandir.

Table 2: Showing religious purposes, medicinal uses and other botanical uses of plant species conserved in temples and associated

S.No.	Botanical Name	Local Name	Family	Plant Functional type	Religious Uses	Medicinal Uses	Miscellaneous Uses
1	<i>Acacia catechu</i>	Khair	Fabaceae	Tree	Sacred tree Wood used in religious ceremonies at the time of hawans.	Decoction of Bark served to women after 2-3 days of child delivery, prepared by boiling katha along with elachi. Provides strength to the body and helps in secretion of milk.	Katha widely used as a major ingredient in masticatory i.e chewing of betel leaf (Pan) by local people. Twigs used as toothstick (known as datun).
2	<i>Acacia modesta</i>	Phulai	Fabaceae	Tree	NA	Plant popular in herbal medicines for treatment of muscular conditions, back pain and stomach problem	Cultivated for its fruit value. Planting of this tree by the way side give long life.
3	<i>Achras zapota</i>	Chiku	Sapotaceae	Tree	NA	NA	NA
4	<i>Aegle marmelos</i>	Bel	Rutaceae	Tree	Leaves used in workshop of Lord Shiva	Unripe fruits improve appetite and digestion.	Planting of this tree by the way side give long life.
5	<i>Albizia lebbek</i>	Siren	Fabaceae	Tree	On the eve of Diwali branches along with leaves put in houses to protect houses from evil spirits.	Used as astringent, anthelmintic and against boils.	NA
6	<i>Annona squamosa</i>	Sitaphal	Annonaceae	Tree	NA	High fibre fruit. Helps in digestion, prevent constipation and detoxifies body.	NA
7	<i>Araucaria araucana</i>	Araucaria	Araucariaceae	Tree	NA	Resin obtained from trunk used in treatment of ulcers & wounds.	Grown as ornamental plant Used for timber.
8	<i>Artocarpus lacucha</i>	Dheu	Moraceae	Tree	NA	NA	Used to prepare pickles.
9	<i>Azadirachta indica</i>	Kadwa neem	Meliaceae	Tree	NA	Used as antifungal and mosquitoes repellent.	NA
10	<i>Bambusa arundinacea</i>	Baans	Poaceae	Herb	Symbol of good luck Symbol of longevity and speedy recovery as well.	Useful in blood disorders, Joint pain and also arrest bleeding.	Used in construction. Used in making baskets, chair, table and other decorative items.
11	<i>Black cardamom</i>	Badi Elaichi	Zingiberaceae	Shrub	NA	Useful in cough, cold and certain respiratory problems. Helps in controlling diabetes and cholesterol.	Used as flavouring spice in cuisines.
12	<i>Bombax ceiba</i>	Simbal	Bombaceae	Tree	NA	Bark, leaves and seeds utilized in traditional medicine to cure various ailments including fever and skin conditions.	NA

13	<i>Butea monosperma</i>	Pala	Fabaceae	Tree	Dried twigs used for sacred fire in the ceremony, which goes under the name of navagrahas, celebrated to secure the pacification of the nine planets on the occasion of vastu shanti.	Gum valuable for treatment of Diarrhea. Root bark control blood pressure.	Leaves used to make Dunas (Known as locally). Prasad offered to god in these Dunas.
14	<i>Cassia obtusifolia</i>	Krungal	Fabaceae	Tree	NA	Useful in leprosy, cardiac disorders. Improves eyesight.	NA
15	<i>Cascabela thevetia</i>	Pila gandela	Apocynaceae	Tree	Flowers used in the worship of lord shiva.	Juice of the plant applied to skin to treat skin problems and warts.	Grown as Ornamental plant.
16	<i>Carrisa spinarum</i>	Gharna	Apocynaceae	Shrub	NA	Roots are used for treatment of Pneumonia in children. Leaves used to treat cough.	Its foliage used as fodder for sheep. Fruit is edible.
17	<i>Carica papaya</i>	Papita	Caricaceae	Tree	NA	Reduces the risk of heart disease, diabetes and cancer. Lowers blood pressure and improve wound healing.	Edible.
18	<i>Cannabis sativa</i>	Bhang	Cannabinaceae	Shrub	Offered to shivling on every Monday on the month of sawan and on the eve of shivratri.	Used for the treatment of asthma, post partum haemorrhage	People on the eve of shivratri prepare pakoras and thandai (drink).
19	<i>Calotropis procera</i>	Desi aak	Asclepiadaceae	Shrub	Flowers offered to shivling.	Used against blood impurity, hairfall, baldness, and mucus in stools.	Green fruits contain a toxic milky sap which is extremely bitter and turns into a glue coating which is resistance to soap.
20	<i>Cestrum nocturnum</i>	Rat ki rani	Solanaceae	Shrub	NA	Extract of plant used as an antispasmodic and for treatment of epilepsy.	Grown as an ornamental plant.
21	<i>Citrus medica</i>	Kimb	Rutaceae	Tree	NA	NA	Traditional fruit popular among rural and urban people. Fruit peeled off, mixed with salt and green chilly, cut into small pieces and served to guests on sunny day in winter season.
22	<i>Citrus lemon</i>	Nimboo	Rutaceae	Tree	People made mala of 108 nimboo and offered it on kali temple when their any manokamana (i.e wish) gets fulfilled	It has antibacterial, refrigerant & vitamin properties.	Pickles prepared by local women.

23	<i>Citrus pseudolimon</i>	Gargal	Rutaceae	Tree	NA	Lowers the risk of heart strokes and prevents anaemia	Edible in the form of pickles.
24	<i>Cinnamomum camphora</i>	Kapoor	Lauraceae	Tree	Camphor is burnt during an arti as it purifies the environment around us.	NA	Wood used for cheaper grade of furniture.
25	<i>Crataeva nurvala</i>	Barna	Capparaceae	Tree	NA	Prevent and promote the discharge of kidney stones	NA
26	<i>Cupressus</i>	Cypress	Cupressaceae	Tree	NA	NA	Grown as an Ornamental plant. Used for timber.
27	<i>Cycas revoluta</i>	Kangji palm	Cycadaceae	Tree	NA	Used in traditional medicine to cure blood vomiting and snake bite.	Grown as an ornamental plant.
28	<i>Dalbergia sissoo</i>	Tali	Fabaceae	Tree	Acc to Hindu myth, person affected by andra nakshtra plant this tree.	Useful for skin ailment.	Utilized for timber, fuel wood.
29	<i>Dyopsis lutescens</i>	Areca palm	Arecaceae	Tree	NA	Possess variety of therapeutic properties including antibacterial, antifungal, antiparasitic and antioxidant.	Grown as an ornamental plant.
30	<i>Elaeocarpus angustifolius</i>	Rudraksha	Elaeocarpaceae	Tree	Ø Seeds were bestowed special powers by lord shiva which assist us in our spiritual evolution.	Seeds used for heart ailments.	NA
31	<i>Embllica officinalis</i>	Amla	Euphorbiaceae	Tree	Sacred tree Brahmin couple feed under it whereby all their sins are washed off.	Slows the process of ageing Fruits effective against Jaundice.	Farming of this tree is boon for farmers and helps them in earning a handsome income to improve their standard of living.
32	<i>Eriobotrya japonica</i>	Laquat	Rosaceae	Tree	NA	Fruit lowers blood pressure, lowers risk of cancer and good for eye-sight.	Fruit edible in nature.
33	<i>Eucalyptus globulus</i>	Safeda	Myrtaceae	Tree	NA	Oil used to treat nasal congestion and asthma	Utilized for timber as well as for paper pulp and essential oil extraction .
34	<i>Ficus benghalensis</i>	Bauhd	Moraceae	Tree	People light mustard oil lamp (diya) on Saturday evening to take blessings of lord shani.	Leaves pasted with honey are beneficial in Raktapitta.	Twigs used for brushing the teeth.
35	<i>Ficus elastica</i>	Rubber	Moraceae	Tree	NA	NA	Grown as an ornamental plant. Eliminates pollutants and harmful toxins.

36	<i>Ficus Palmata</i>	Fakoda	Moraceae	Tree	NA	NA	Sap is applied on the area when injured with thorned especially on hand and foot	Fruits locally called gullian edible and eaten raw.
37	<i>Ficus religiosa</i>	Badh	Moraceae	Tree	In Hindu religion offered water to the tree for about 1 year in the name of ancestors after their death to rest their soul in peace.	NA	Used for the treatment of diarrhea, asthma and epilepsy etc.	Under tree people place idols of gods and local deities and worship them.
38	<i>Ficus racemosa</i>	Rumbel	Moraceae	Tree	NA	NA	Useful in traditional medicines for treatment of skin disorders like sores and as a hypoglycemic agent	Leaves used as fodder.
39	<i>Ficus virens</i>	Pilkhan	Moraceae	Tree	NA	NA	Decoction of bark used as a wash on ulcers and as a gargle in salivation.	Wood used for fuel.
40	<i>Flacourtia indica</i>	Kakoa	Salicaceae	Shrub	NA	NA	NA	Fruit, fodder, wood are important products villagers obtain from this tree.
41	<i>Grewia optiva</i>	Taman	Malvaceae	Tree	NA	NA	NA	Preferred plant by the farmers to feed their cattle.
42	<i>Grevillea robusta</i>	Silver oak	Proteaceae	Tree	NA	NA	NA	Grown as an ornamental plant. Used for timber
43	<i>Gymnema Sylvestre</i>	Gurmar	Asclepiadaceae	Tree	NA	NA	It have a blood sugar and cholesterol lowering effect	NA
44	<i>Hibiscus rosa sinensis</i>	Gudhal	Malvaceae	Shrub	Flowers offered to shivling as well as use in the worship of devi.	Flowers offered to shivling as well as use in the worship of devi.	Useful against diabetes, hepatic diseases etc.	Grown as an ornamental plant.
45	<i>Jasminum grandiflorum</i>	Chameli	Oleaceae	Shrub	Flowers used for religious offerings	Flowers used for religious offerings	Yellow pigments present in flower used as substitute for saffron.	Used for perfumed hair oils.
46	<i>Lansea coromandelica</i>	Kambel	Anacardiaceae	Tree	NA	NA	NA	Twigs used as toothsticks.
47	<i>Litchi Chinensis</i>	Litchi	Sapindaceae	Tree	NA	NA	Used in the treatment of testicular swelling and neurologic pains	Flesh of dried litchi is eaten like raisins.
48	<i>Magnolia champaca</i>	Champa	Magnoliaceae	Tree	Flowers used for religious offerings	Flowers used for religious offerings	Consuming the Juice of the flower twice daily can provide relief to individuals experiencing pain during urination	Grown as an ornamental plant.
49	<i>Mangifera indica</i>	Aamb	Anacardiaceae	Tree	Flowers, locally known as Baur, are utilized in worship of lord shiva.	Flowers, locally known as Baur, are utilized in worship of lord shiva.	Strengthen nervous system	Leave affixed to entrances and leaves are utilized to ward off evil spirits.

50	<i>Malus domestica</i>	Seb	Rosaceae	Tree	NA	It is useful for immunity, weight management, cholesterol and against diabetes.	Fruit is entirely edible except for seeds.
51	<i>Melia azedarach</i>	Drenk	Meliaceae	Tree	NA	Possesses medicinal properties such as antiseptic, antibacterial and antimalarial	Timber serves as a raw material for the production of agricultural implements, furniture, and plywood.
52	<i>Milletia pinnata</i>	Sukhchain	Fabaceae	Tree	NA	NA	Wood is a source for fuel. Leaves are potential source of fodder.
53	<i>Mimusops elengi</i>	Maulsari	Sapotaceae	Tree	NA	NA	Grown as an ornamental plant. Fruits are consumed both raw and in pickled form.
54	<i>Mitragyna parvifolia</i>	Kadamb	Rubiaceae	Tree	During the month of sawan women take ritual baths under this sacred tree.	Bark and roots are used for treating fever and stomach burning.	Wood utilized for making furniture.
55	<i>Moringa oleifera</i>	Sowanjana	Moringaceae	Tree	NA	NA	Roots are utilized as a vegetable and for pickle making. Foliage is valued as a nutritious fodder for domestic animals.
56	<i>Morus alba</i>	Toot	Moraceae	Tree	Dense, disordered growth on the nature tree suggests the tree's age and longevity.	Leaves have potential therapeutic effects in managing hypertension and diabetes.	Fruit is edible in nature.
57	<i>Muraya paniculata</i>	Kamini	Rutaceae	Tree	NA	Cure gut and cardiovascular disorders.	Grown as an ornamental plant.
58	<i>Muraya koenigii</i>	Curry patta	Rutaceae	Tree	Leaves are significant in religious rituals and ceremonies.	Used in the treatment of anaemia, diabetes, and kidney problems.	Edible in nature.
59	<i>Musa paradisiaca</i>	Kela	Musaceae	Tree	As per popular belief, worship of plant by wife contribute to the longevity of her husband's life.	Alleviate constipation by restoring normal bowel function in the intestines.	Edible in nature.
60	<i>Ocimum sanctum</i>	Tulsi	Lamiaceae	Herb	During the tulsi vrat tradition, women fast, decorate the tulsi plant pot, walk around the plant 108 times, and light 108 lamps in the evening. Hindu households typically place the plant at the centres and used it for daily morning and evening worship.	A tea made from the leaves is used to treat malaria, stomach problems in children and liver disorders.	NA

61	<i>Ocimum tenuiflorum</i>	Shyama Tulsi	Lamiaceae	Herb	In ancient scriptures this is seen as a connection between heaven and earth.	Used for respiratory difficulties, ear ailments and skin issues.	NA
62	<i>Phoenix dactylifera</i>	Khajur palin	Areaceae	Tree	NA	NA	Grown as an ornamental plant. Trunk furnishes timber.
63	<i>Platanus orientalis</i>	Chinar	Platanaceae	Tree	Planted near sacred Hindu sites, where it is considered as a divine offering bestowed upon the earth.	Fresh leaves can be crushed and used to treat ophthalmia and other ophthalmic conditions.	Timber valuable for indoor furniture.
64	<i>Prosopis cineraria</i>	Jhand	Fabaceae	Tree	During Janmashtami, also known as Thagren Da Vrat in Dogri, adults fast to honour Shri Krishna. Some families keep cereal grains in the name of their Kuldevta and pitras as part of a ritual called deya parna. These grains are then offered to a hold tree called Jhand as part of the local hand pooja tradition.	NA	NA
65	<i>Psidium guajava</i>	Amrood	Myrtaceae	Tree	NA	Use for diabetes and inflammation.	Leaves used as fodder for livestock.
66	<i>Putrajeeva roxburghii</i>	Jiyopota tree	Putranjivaceae	Tree	Fruits are used to ward off evil spirits.	Powder made from the seeds is important for stabilizing hormone levels in pregnant women. Seeds are used to promote the health of unborn child.	NA
67	<i>Punica granatum</i>	Anar	Lythraceae	Tree	NA	Provide protection against cancer, support exercise endurance.	Used in sweet and savoury dishes.
68	<i>Rhapis excelsa</i>	Rhapis palm	Areaceae	Tree	NA	NA	Enhances aesthetics as well as helps in purifying the air.
69	<i>Rosa chinensis</i>	Desi Gulab	Rosaceae	Shrub	ØHindus considered rose a symbol of spiritual joy.	Rose petals have antiseptic and anti-inflammatory properties.	Rose water made as a by product of rose oil production.
70	<i>Roystonea regia</i>	Royal Palm	Areaceae	Tree	NA	NA	Grown as an ornamental plant. Timber valuable for construction and furniture.

71	<i>Sapindus mukorossi</i>	Retha	Euphorbiaceae	Tree	NA	Useful in epilepsy.	Reetha powder kills lice, prevents dandruff, and is a main ingredient in soaps and shampoos for washing hair.
72	<i>Sesamum orientale</i>	Til	Pedaliaceae	Shrub	Oil is utilized for igniting the lamp in religious ceremonies.	Seeds are used to obtain oil which is called "Meetha Tail" which gives relief from pain.	During death rituals people used the black til.
73	<i>Syzygium cumini</i>	Talan	Myrtaceae	Tree	Considered sacred by Hindus.	Seeds are highly effective in managing Diabetes.	Wood is used to produce cheap furniture.
74	<i>Tagetes erecta</i>	Gutta	Asteraceae	Shrub	Flower is a key ingredient of all festival of the Hindu religion.	Used as a remedy for stomach and intestinal problems.	Dried plants are used as insect repellent.
75	<i>Tamarindus indica</i>	Imli	Fabaceae	Tree	NA	Have anti-inflammatory properties and prevents antherosclerosis.	Attractive fruit for small children and girls.
76	<i>Tectona grandis</i>	Sagwan	Lamiaceae	Tree	Wood emits auspicious energies and blessings.	Juice of the leaves increase the blood.	Wood have exceptional durability and resistance to decay termites.
77	<i>Terminalia arjuna</i>	Arjun	Combretaceae	Tree	NA	Have antioxidant, anti-inflammatory and anti-microbial properties.	Utilized for timber.
78	<i>Terminalia bellirica</i>	Baheda	Combretaceae	Tree	Have cultural and spiritual significance.	Useful tree of ayurvedic system of medicine and contributes one of the component of "Triphala".	Timber used in house buildings.
79	<i>Terminalia chebula</i>	Harad	Combretaceae	Tree	NA	Prevents diabetes and hair loss	NA
80	<i>Toona ciliata</i>	Tuno	Mahogany	Tree	NA	NA	Wood is commonly used for furniture, doors, cabinets and wooden articles.
81	<i>Thuja occidentalis</i>	Mor Pankh	Cupressaceae	Shrub	NA	Used for the treatment of liver diseases, uterine carcinoma and diarrhea.	Grown as an ornamental plant.
82	<i>Vitex negundo</i>	Bana	Verbenaceae	Shrub	During the Diwali festival, the plant bana, along with siren (Albizia lebbek) is traditionally hung on doors and windows as a symbol of celebration.	Fresh flower extract cure diarrhea	NA
83	<i>Ziziphus mauritiana</i>	Ber	Rhamnaceae	Tree	Hindu couples worship the tree after the completion of their wedding rituals.	Dried fruits are used to fight against cancer.	Tree is a good source of wood fuel and also yields high-grade charcoal.

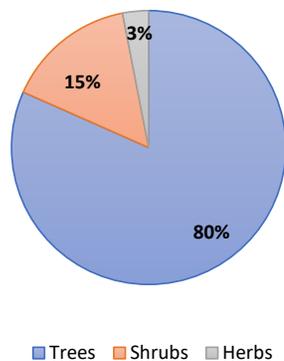


Fig. 4: Distribution of plant species according to their life forms.

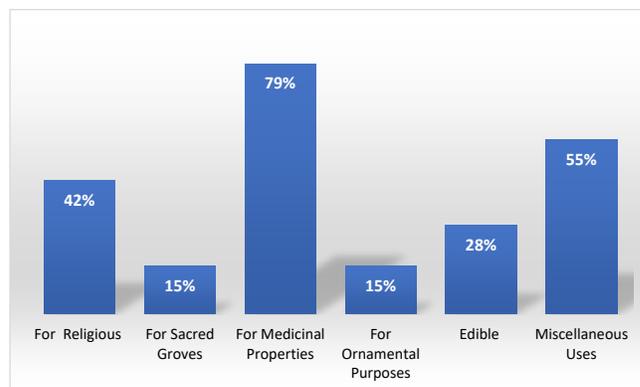


Fig. 6: No. of plants species used for different purposes.

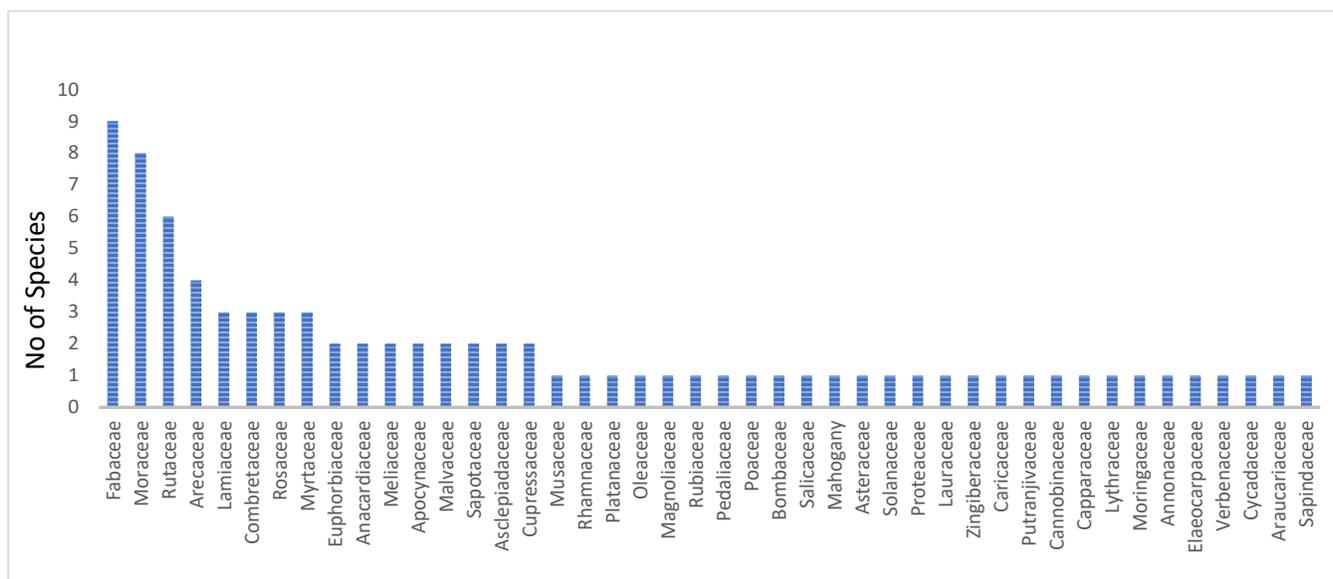


Fig. 5: Families and no. of plants species observed in the temples and associated sacred groves during field survey.

CONCLUSION

The present study reveals that ritualistic practices and associated sacred groves in Jammu district. Sacred plants hold significant importance in various religious rituals and are also utilized in traditional medicinal practices. Many of these plants are revered across different religions leading to their worship. While the fallen parts of these sacred plants are used, cutting them is strictly forbidden. These sacred practices play a crucial role in biodiversity conservation. Plants that are nearing extinction are preserved within temple grounds. Religious ceremonies and rituals serve as protective measures aiding in the preservation of floral diversity. This study highlights that the religious practices associated with sacred plants contribute significantly to the protection and conservation of biodiversity.

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