



Moonlight Ritual: An ethnobotanical study of the purnama ceremony in the hindu community of malang



Ayu Chandra Mustikasari, Nafi' Windy Kharisma, Syifa Nabila Firdausya, Ade Fandy Ardiyansyah Putra, Fahrul Ghani Muhaimin , Susriyati Mahanal

Department of Biology, Faculty of Mathematics and Natural Sciences, State University of Malang, Indonesia

*Corresponding author: fahrulghanimuhaimin@gmail.com

Article Info

ABSTRACT

Article History:

Received 03 January 2026

Revised 10 March 2026

Accepted 10 April 2026

Published 30 April 2026

Keywords:

Ethnobotany

Hinduism in Java

Local Knowledge

Ritual Plants

Purnama Ceremony



Indonesia's biodiversity and culture are interconnected through local knowledge that is increasingly threatened by modernization. This study aims to document local knowledge related to plant use in the Purnama ceremony of the Hindu community in Wagir District, Malang Regency, East Java. This research employed a descriptive qualitative approach. Informants were selected using purposive and snowball sampling. Data were collected through interviews, observations, and documentation. The results identified 24 plant species from 22 families used in ritual offerings. The findings highlight plant diversity, plant parts used, philosophical meanings, and conservation efforts. Most species were used in fresh form and were classified as Least Concern based on IUCN data. These results indicate that the Purnama ceremony supports the preservation of local knowledge and culturally based biodiversity conservation.

Copyright © 2026, Mustikasari et al

This is an open access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license



Citation: Mustikasari, A.C., Kharisma, N.W., Firdausya, S.N., Putra, A.F.A., Muhaimin, F.G., & Mahanal, S. (2026). Moonlight Ritual: An Ethnobotanical Study of the Purnama Ceremony in the Hindu Community of Malang. *JPBIO (Jurnal Pendidikan Biologi)*, 11(1), 35-47. DOI: <https://doi.org/10.31932/jpbio.v11i1.6010>

INTRODUCTION

Indonesia's cultural diversity has given rise to a wide range of ethnobotanical practices that reflect local wisdom in the sustainable use of natural resources. This cultural richness forms the foundation of the dynamic relationship between humans and their environment (Nuraeni et al., 2022). Each region possesses distinctive cultural characteristics, manifested through traditional ceremonies, belief systems, and social practices that have been transmitted across generations. Cultural diversity is closely intertwined with biodiversity, as local communities develop unique ways of utilizing plant resources based on culturally embedded knowledge and rational ecological understanding (Berisha et al., 2022). This interconnection provides the basis for ethnobotanical studies, which explore interactions between humans and plants within cultural, spiritual, and environmental contexts. In the face of modernization and accelerating globalization, the



preservation of cultural values and local knowledge has become increasingly important to prevent the erosion of cultural identity and to ensure the continuity of traditional heritage (Irwandi et al., 2024).

Ethnobotanical research plays a crucial role in preserving local knowledge that is passed down through cultural and religious practices. Such studies serve not only as scientific documentation but also as an essential strategy for maintaining local knowledge systems and supporting biodiversity sustainability (Ege et al., 2025). Ethnobotany extends beyond identifying plant species used in cultural practices; it also uncovers the embedded local knowledge, values, and meanings associated with plant utilization (Nurrosyidah et al., 2020). Through an ethnobotanical perspective, culture and ecological knowledge are understood as an integrated system, demonstrating the profound interdependence between humans and nature, enriched with symbolic and spiritual significance (Darmawan et al., 2025).

One cultural practice that exemplifies the close relationship between humans and plants within a spiritual framework is the Purnama (Full Moon) ceremony practiced by the Hindu community in Wagir District, Malang Regency, East Java. Ethnobotanical practices among this community represent a tangible manifestation of how plant resources are utilized according to inherited local knowledge in everyday religious life. The selection and use of plants in these rituals reflect a deep connection between ecological awareness and spiritual values, which lies at the core of ethnobotanical studies aimed at preserving community-based knowledge systems (Das Chatterjee et al., 2025). However, it remains unknown whether the conservation of plants used in the Purnama ritual is still well maintained or has become largely neglected. This issue constitutes the central inquiry of the present study.

Several ethnobotanical studies have previously documented the use of plants in Hindu religious ceremonies. For instance, Krisnawan et al. (2023) reported 18 plant species utilized in the Galungan ceremony, involving flowers, fruits, stems, and leaves. Harsono et al. (2025) examined plant usage in the Balinese *ngaben* cremation ceremony, while Pramita et al. (2013) documented plant species employed in the Kasada ceremony by the Tengger community in Ngadas Village. However, to date, no ethnobotanical research has specifically addressed the Purnama ceremony, a regular Hindu ritual conducted during the full moon. This absence highlights a significant research gap that warrants further investigation to deepen understanding of the relationship between Hindu belief systems and the preservation of local botanical knowledge through ritual practices.

Despite limited scientific documentation, the Hindu community in Wagir District, Malang Regency, continues to sustain local knowledge through the regular observance of religious ceremonies. This indicates that Hindu spiritual practices outside Bali, particularly in Wagir, retain a rich repository of local knowledge with strong potential for ethnobotanical research. The novelty of this study lies in its position as the first systematic effort to document ethnobotanical practices associated with the Purnama ceremony in Wagir District. Consequently, this research not only contributes to academic discourse on culture–plant interactions but also provides tangible support for the preservation of local knowledge increasingly threatened by modernization.

This study is closely aligned with SDG 11 (Sustainable Cities and Communities) and SDG 15 (Life on Land). Documenting the Purnama ceremony offers a strategy to preserve cultural heritage while fostering ecological awareness within the community. The findings can support education based on local wisdom, guide cultural preservation policies, and inform biodiversity conservation initiatives, highlighting the role of local knowledge in sustainable plant resource use.

Therefore, this study aims to document and preserve local knowledge related to the use of traditional plants in the Purnama ceremony. The research encompasses the identification of plant species, growth forms (*habitus*), plant parts utilized, methods of preparation in ritual practices,

philosophical meanings embedded in ceremonial use, and conservation efforts undertaken by the Hindu community in Wagir District, Malang Regency, East Java.

RESEARCH METHODS

Research Design

This study employed a descriptive qualitative research design. Prior to data collection, official permission was obtained from the Department of Biology, Universitas Negeri Malang, as well as from the village authorities and the administrators of Pura Dharma Yasa. Data were collected through in-depth interviews, participatory observation, and documentation. All stages of the research were conducted in accordance with established research ethics principles, including the acquisition of informed consent from all informants and the maintenance of data confidentiality. To ensure data credibility and validity, source triangulation was applied to all information obtained. The study was conducted at Pura Dharma Yasa, located in Wagir District, Malang Regency, East Java, Indonesia. The geographical location of the study area is presented in Figure I, the spatial position of the research site within the regional context, providing a clearer understanding of the environmental and cultural setting in which the study was carried out.

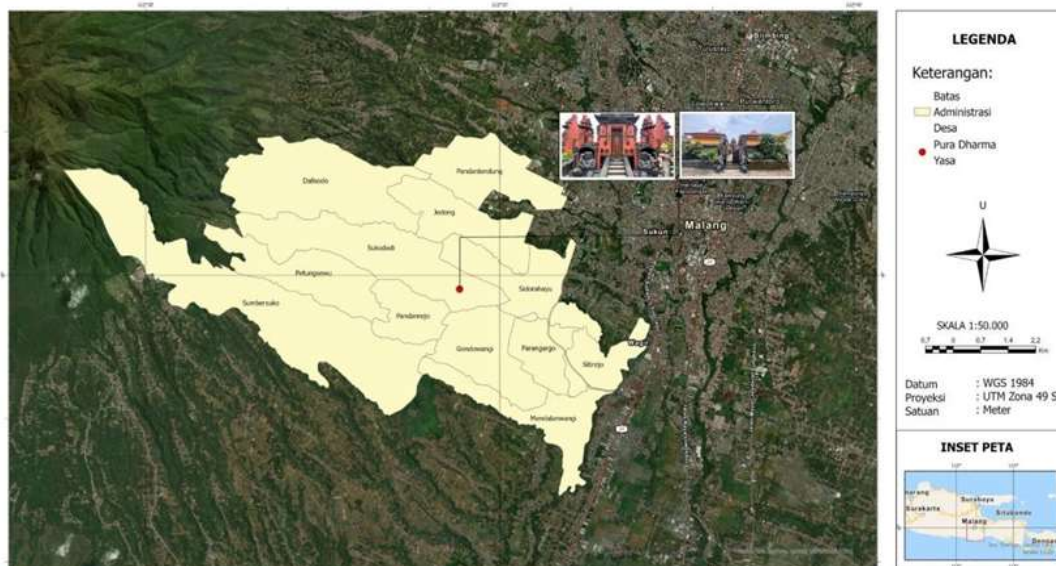


Figure I. Location of the study area at Pura Dharma Yasa, Wagir District, Malang Regency, East Java, Indonesia.

Population and Samples

The population of this study comprised members of the Hindu community involved in the Purnama ceremony at Pura Dharma Yasa, Jamuran Hamlet, Sukodadi Village, Wagir District, Malang Regency. A total of four informants participated in this study. Informants were selected using purposive sampling, targeting individuals with active involvement or in-depth knowledge of ritual practices and plant use, including religious leaders, ritual practitioners, and community members. Snowball sampling was subsequently employed by asking initial informants to recommend other potential participants who met the research criteria, allowing the researcher to expand the pool of informants and achieve data saturation. The informants included Romo Mangku, Sarati, the Head of Jamuran Hamlet, and participants of the Purnama ceremony.

Instruments

The research instruments used in this study included semi-structured interview guidelines, participatory observation sheets, and documentation formats developed by the researcher. Interviews focused on plant use, ritual procedures, and symbolic meanings. Observations and

documentation captured participant activities and plant materials during the Purnama ceremony, providing additional data for verification and analysis.

Interviews

In-depth interviews were conducted to collect data on plant utilization in the Purnama ceremony, including species identification, plant parts used, preparation methods, philosophical meanings, and conservation efforts undertaken by the Hindu community. A semi-structured interview guide was employed as the research instrument, enabling the researchers to obtain data in a systematic yet in-depth manner.

Observation

Observations were conducted directly at Pura Dharma Yasa to obtain contextual data on the implementation of the Purnama ceremony. The focus of the observations included: (1) the condition of the ceremonial site, (2) the parties involved, and (3) the preparation of ritual materials and plant resources. In addition, observations also encompassed the condition of the temple environment and community yards, as well as the management of plant material remnants following the ceremony. The instruments used for data collection included observation sheets and field notes.

Documentation

Documentation was conducted to supplement and strengthen the data obtained from interviews and observations. The documentation materials included photographs of plant species used in the ceremonies, images of the interview process, video recordings, and field notes. These documentation instruments served as supporting evidence for data analysis and the verification of research findings.

Procedures

This study was conducted in October 2025, beginning with interviews. The first interview was conducted with Romo Mangku, the key informant, to obtain information on the implementation of the Purnama ceremony and the types and meanings of plants used in the rituals. The second interview was conducted with Sarati to explore the preparation of ceremonial materials and the utilization of ritual plants. Subsequent interviews were held with the Head of the Hindu Youth Organization and participants of the Purnama ceremony to collect additional data on plant use practices and community involvement. A total of four informants participated in this study, including one key informant and three additional informants.

Data Analysis

The research data were analyzed using the Miles et al. (2014) model, which involves data reduction, data display, and conclusion drawing. Data were selected and categorized according to the research focus, then presented in narratives, tables, and visual documentation. The results were interpreted to obtain valid and in-depth conclusions.

RESULTS

Based on field observations and ethnobotanical analysis, data were collected on the diversity of plants used in the Purnama ceremony. These plants were classified by family, scientific name, vernacular name, and habitus to provide a more systematic overview of the characteristics of each species. The presentation of this data aims to demonstrate the variety of plant species used and the patterns of their utilization within the cultural context of the community. The details of the identified plant species are presented in Table I.

Table 1. Diversity of ritual plants in the Purnama ceremony

No	Family	Scientific Name	Vernacular Name	Habitus
1.	Rosaceae	<i>Rosa hybrida</i>	<i>Mawar abang</i>	Shrub
2.	Rosaceae	<i>Rosa alba</i>	<i>Mawar putih</i>	Shrub
3.	Magnoliaceae	<i>Magnolia alba</i>	<i>Kantil putih</i>	Tree
4.	Annonaceae	<i>Cananga odorata</i>	Kenanga	Tree
5.	Apocynaceae	<i>Plumeria alba</i>	Kamboja	Tree
6.	Rubiaceae	<i>Ixora javanica</i>	<i>Aśoka</i>	Shrub
7.	Nyctaginaceae	<i>Bougainvillea spectabilis</i>	<i>Kembang kertas</i>	Shrub
8.	Arecaceae	<i>Cocos nucifera</i>	<i>Nyū</i>	Tree
9.	Musaceae	<i>Musa paradisiaca</i>	<i>Gedhang</i>	Herb
10.	Piperaceae	<i>Piper betle</i>	<i>Serēh</i>	Liana
11.	Euphorbiaceae	<i>Codiaeum variegatum</i>	<i>Krakas</i>	Shrub
12.	Pandanaceae	<i>Pandanus amaryllifolius</i>	Pandan	Herb
13.	Pandanaceae	<i>Pandanus tectorius</i>	<i>Pudak</i>	Herb
14.	Fabaceae	<i>Erythrina variegata</i>	Dadap	Tree
15.	Arecaceae	<i>Salacca zalacca</i>	Salak	Shrub
16.	Rosaceae	<i>Malus domestica</i>	Apel	Tree
17.	Rosaceae	<i>Pyrus communis</i>	Pir	Tree
18.	Rutaceae	<i>Citrus sp.</i>	<i>Dlimun</i>	Tree
19.	Achariaceae	<i>Pangium edule</i>	<i>Kluwek</i>	Tree
20.	Poaceae	<i>Oryza sativa</i>	<i>Pari</i>	Herb
21.	Zingiberaceae	<i>Zingiber officinale</i>	<i>Jahi</i>	Herb
22.	Apiaceae	<i>Coriandrum sativum</i>	Ketumbar	Herb
23.	Piperaceae	<i>Piper nigrum</i>	<i>Mrica</i>	Liana
24.	Amaryllidaceae	<i>Allium cepa</i>	<i>Brambang</i>	Herb

Based on Table 1, a total of 22 plant families were recorded as being used in the Purnama ceremony. The Rosaceae family was the most widely utilized, comprising four species, followed by Arecaceae, Pandanaceae, and Piperaceae, each represented by two species. This distribution indicates that the Hindu community in Wagir District possesses extensive ethnobotanical knowledge in identifying and selecting plants from diverse families to meet ritual needs. Based on species identification, the Rosaceae family includes commonly used plants such as *Rosa hybrida* (red rose), *Rosa alba* (white rose), *Malus domestica* (apple), and *Pyrus communis* (pear). These species are widely used because their flowers and fruits are brightly colored, fragrant, and readily available in the surrounding environment.

Table 2. Utilization of ritual plants in the Purnama ceremony

No	Scientific Name	Parts of the Plant Used	Preparation Method
1	<i>Rosa hybrida</i>	Flower	Fresh
2	<i>Rosa alba</i>	Flower	Fresh
3	<i>Magnolia alba</i>	Flower	Fresh
4	<i>Cananga odorata</i>	Flower	Fresh
5	<i>Plumeria alba</i>	Flower	Fresh
6	<i>Ixora javanica</i>	Flower	Fresh
7	<i>Bougainvillea spectabilis</i>	Flower	Fresh
8	<i>Cocos nucifera</i>	Leaf and Flower	Fresh



9	<i>Musa paradisiaca</i>	Leaf and Flower	Fresh
10	<i>Piper betle</i>	Leaf	Fresh
11	<i>Codiaeum variegatum</i>	Leaf	Fresh
12	<i>Pandanus amaryllifolius</i>	Leaf	Fresh
13	<i>Pandanus tectorius</i>	Leaf	Fresh
14	<i>Erythrina variegata</i>	Leaf	Fresh
15	<i>Salacca zalacca</i>	Fruit	Fresh
16	<i>Malus domestica</i>	Fruit	Fresh
17	<i>Pyrus communis</i>	Fruit	Fresh
18	<i>Citrus</i> sp.	Fruit	Fresh
19	<i>Pangium edule</i>	Seed	Fresh
20	<i>Oryza sativa</i>	Seed	Cooked
21	<i>Zingiber officinale</i>	Rhizome	Fresh
22	<i>Coriandrum sativum</i>	Seed	Fresh
23	<i>Piper nigrum</i>	Seed	Fresh
24	<i>Allium cepa</i>	Tuber	Fresh

Based on the data presented in Table 2, the plant species used in the Purnama ceremony comprise various plant parts, including flowers, leaves, fruits, seeds, rhizomes, and tubers, which are predominantly utilized in fresh condition. To provide a clearer overview of the proportion of plant parts used in the Purnama ceremony, the distribution of plant part utilization is illustrated in the accompanying pie chart. In addition, the preparation methods of ritual plants are summarized visually to emphasize the predominance of fresh materials in ceremonial practices.

Table 3. Philosophical meanings of ritual plants in the Purnama ceremony

No	Scientific Name	Philosophical Meaning
1	<i>Rosa hybrida</i>	Offering to the Gods and Goddesses as manifestations of God
2	<i>Rosa alba</i>	Expression of gratitude to Lord Shiva
3	<i>Magnolia alba</i>	Beauty and love for ancestors
4	<i>Cananga odorata</i>	Beauty and love for ancestors
5	<i>Plumeria alba</i>	Beauty and love for ancestors
6	<i>Ixora javanica</i>	Beauty and love for ancestors
7	<i>Bougainvillea spectabilis</i>	Beauty and love for ancestors
8	<i>Cocos nucifera</i>	The leaves symbolize welfare and prosperity. In addition, its use also symbolizes the economy that runs through farmers and the community. The fruit symbolizes gratitude for the earth's produce and devotion to God as well as offerings to ancestors.
9	<i>Piper betle</i>	Offerings to God and ancestors.
10	<i>Codiaeum variegatum</i>	Offerings to God and ancestors.
11	<i>Pandanus amaryllifolius</i>	Offerings to God and ancestors.
12	<i>Pandanus tectorius</i>	Offerings to God and ancestors.
13	<i>Erythrina variegata</i>	Offerings to God and ancestors.
14	<i>Pangium edule</i>	Offerings to God and ancestors.
15	<i>Musa paradisiaca</i>	Gratitude for the fruits of the earth, devotion to God, and offerings to ancestors

16	<i>Salacca zalacca</i>	Gratitude for the fruits of the earth, devotion to God, and offerings to ancestors
17	<i>Malus domestica</i>	Gratitude for the fruits of the earth, devotion to God, and offerings to ancestors
18	<i>Pyrus communis</i>	Gratitude for the fruits of the earth, devotion to God, and offerings to ancestors
19	<i>Citrus sp.</i>	Gratitude for the fruits of the earth, devotion to God, and offerings to ancestors
20	<i>Oryza sativa</i>	Offerings to honor fellow creatures, both visible (ants, insects) and invisible (spirits)
21	<i>Zingiber officinale</i>	Offerings to honor fellow creatures, both visible (ants, insects) and invisible (spirits)
22	<i>Coriandrum sativum</i>	Offerings to honor fellow creatures, both visible (ants, insects) and invisible (spirits)
23	<i>Piper nigrum</i>	Offerings to honor fellow creatures, both visible (ants, insects) and invisible (spirits)
24	<i>Allium cepa</i>	Offerings to honor fellow creatures, both visible (ants, insects) and invisible (spirits)

In addition to their functional roles, each plant used in the Purnama ceremony holds specific philosophical meanings within the religious ritual practices of the Hindu community, as summarized in Table 3.

Table 4. Conservation efforts for ritual plants in the Purnama ceremony

No	Scientific Name	Source of Acquisition	Conservation Status According to the IUCN
1.	<i>Rosa hybrida</i>	Cultivation	Not Evaluated
2.	<i>Rosa alba</i>	Cultivation	Not Evaluated
3.	<i>Magnolia alba</i>	Cultivation	Not Evaluated
4.	<i>Cananga odorata</i>	Cultivation	Least Concern
5.	<i>Plumeria alba</i>	Cultivation	Least Concern
6.	<i>Ixora javanica</i>	Cultivation	Least Concern
7.	<i>Bougainvillea spectabilis</i>	Cultivation	Not Evaluated
8.	<i>Cocos nucifera</i>	Purchase	Not Evaluated
9.	<i>Musa paradisiaca</i>	Purchase	Not Evaluated
10.	<i>Piper betle</i>	Cultivation	Not Evaluated
11.	<i>Codiaeum variegatum</i>	Cultivation	Least Concern
12.	<i>Pandanus amaryllifolius</i>	Cultivation	Data Deficient
13.	<i>Pandanus tectorius</i>	Cultivation	Least Concern
14.	<i>Erythrina variegata</i>	Cultivation	Least Concern
15.	<i>Salacca zalacca</i>	Purchase	Data Deficient
16.	<i>Malus domestica</i>	Purchase	Not Evaluated
17.	<i>Pyrus communis</i>	Purchase	Least Concern
18.	<i>Citrus sp.</i>	Purchase	Not Evaluated
19.	<i>Pangium edule</i>	Purchase	Least Concern
20.	<i>Oryza sativa</i>	Purchase	Not Evaluated

21. <i>Zingiber officinale</i>	Purchase	Data Deficient
22. <i>Coriandrum sativum</i>	Purchase	Not Evaluated
23. <i>Piper nigrum</i>	Purchase	Not Evaluated
24. <i>Allium cepa</i>	Purchase	Not Evaluated

Based on Table 4, 12 plant species were obtained through cultivation, while the remaining 12 species were acquired from the market. In this context, cultivation refers to the voluntary initiatives of residents of Jamuran Hamlet to grow plant species used in the Purnama ceremony.

DISCUSSION

Diversity of ritual plants in the Purnama ceremony

The diversity of ritual plants in the Purnama ceremony reflects a close and dynamic relationship between the Hindu community in Wagir District and the surrounding natural environment. The use of plants from various botanical families indicates that ritual practices are strongly influenced by local biodiversity and the availability of plant resources within the community's immediate surroundings. This pattern demonstrates that ethnobotanical knowledge within the community has developed adaptively, enabling people to select appropriate plant species without dependence on a single botanical group. Similar patterns have been reported in other ethnobotanical studies, where the use of ritual plants is closely associated with ecological availability and culturally embedded traditions (Handayani et al., 2023).

The predominance of certain plant families, particularly Rosaceae, suggests that plant selection in ritual contexts is not random but based on specific characteristics considered valuable within ceremonial practices. Species belonging to this family are commonly associated with aesthetic attributes such as bright colors and fragrant aromas, which are regarded as important elements in ritual offerings. These sensory qualities enhance the symbolic and spiritual dimensions of ceremonies, as visually appealing and aromatic plants are often interpreted as representations of purity, harmony, and reverence. This finding supports previous ethnobotanical research indicating that sensory properties play a crucial role in determining plant selection for religious rituals.

Variation in the number of species among different plant families further reflects the community's selectivity in choosing plants deemed suitable for ritual purposes. Such selectivity is influenced not only by plant availability but also by cultural meanings and symbolic values attached to particular species. The continued use of a diverse range of plant families represents an adaptive strategy that allows ritual traditions to be sustained while reducing pressure on individual plant species, thereby contributing to the long-term sustainability of local plant resources.

Beyond taxonomic diversity, variation in plant growth forms further emphasizes the adaptive relationship between the community and its environment. The dominance of tree species in ritual use suggests a preference for long-lived plants with durable morphological characteristics, such as sturdy stems, persistent leaves, or fragrant flowers. Trees are often symbolically associated with life, stability, and balance, making them particularly meaningful in religious contexts. From an ecological perspective, the use of perennial plant species supports sustainability, as these plants can be harvested repeatedly without causing significant ecological degradation.

Herbaceous plants and shrubs are also widely utilized due to their rapid growth, ease of cultivation, and fresh appearance, making them readily accessible for routine or periodic rituals. In contrast, lianas are used more sparingly, which may be attributed to their growth habits and limited availability in the surrounding environment. This pattern suggests that practical considerations, including accessibility, regeneration capacity, and ease of management, play an important role alongside symbolic values in shaping plant selection practices.

Overall, the diversity of plant species and growth forms used in the Purnama ceremony reflects a form of local wisdom that integrates ecological sustainability with spiritual values. The community's plant selection practices demonstrate an awareness of maintaining harmony between humans and nature, aligning with the concept of *Tri Hita Karana*, which emphasizes balanced relationships among humans, the natural environment, and the divine. Through these practices, ritual traditions not only fulfill spiritual functions but also contribute meaningfully to the preservation of local biodiversity.

Utilization of ritual plants in the Purnama ceremony

The utilization of ritual plants in the Purnama ceremony by the Hindu community in Wagir District demonstrates a close relationship between ritual practices and the utilization of local natural resources. Based on the identification results, a total of 24 plant species are used throughout the ceremonial process. Most of these plants serve as components of *banten* and *segehan alit*, two essential offerings in Hindu ritual practices. According to Yoga (2025), *banten* functions as a medium for expressing gratitude, devotion, and reverence to God for the blessings of prosperity.

In the implementation of the Purnama ceremony, the community continues to uphold the tradition of preparing *banten* as an integral component of ritual activities. The preparation of *banten* is conducted collectively and voluntarily by community members prior to the ceremony, reflecting sincerity and devotion in presenting offerings to *Sang Hyang Widhi*. The individual responsible for preparing *banten* is known as a *Sarati*, who possesses in-depth knowledge of the procedures, materials, and symbolic meanings associated with each component of the offering. Typically, *banten* consists of flowers and fruits arranged carefully on containers made from palm leaves or banana leaves.

Based on interview results, the plant parts most commonly used in ritual offerings are flowers and leaves, which serve as decorative elements and complements. Flowers enhance the visual appeal and vibrancy of the offerings, while leaves, such as those from *Cocos nucifera* and *Pandanus tectorius*, function as containers, bases, or wrappers for *banten* components. According to Sudiarta (2022), in addition to their decorative role, flowers emit fragrances that can enhance concentration during prayer. Interviews with *Romo Mangku* also revealed that flowers must be colorful to symbolize beauty, with red and white flowers considered the minimum requirement.

In addition to flowers and leaves, fruits are also commonly used in offerings for the Purnama ceremony. Interviews indicated that fruits are frequently included due to their abundance in the surrounding environment and their significance as key components of the offerings. Fruits symbolize gratitude for the gifts of the earth, aligning with Suryatini et al. (2023), who stated that fruits in offerings express devotion and thanksgiving to *Sang Hyang Widhi Wasa* (God Almighty). After the ceremony, the fruits are typically consumed by participants.

Observational data further indicate that nearly all plant species are utilized in fresh form, with a total of 23 species used directly without processing in the preparation of ceremonial offerings. The preference for fresh plant materials reflects the continued preservation of local wisdom among the Hindu community in Wagir, particularly in utilizing plants cultivated in home gardens, agricultural fields, and obtained from traditional markets. Moreover, the use of fresh ingredients signifies the community's understanding of maintaining ritual purity while minimizing excessive processing of natural resources.

An exception to this pattern is *Oryza sativa*, which is processed through cooking prior to use. Cooked rice is utilized in the preparation of *segehan alit*, small offerings intended for other spiritual beings to maintain balance between humans and the unseen world. The Hindu community in Wagir believes in the coexistence of other beings within their environment, whose presence must be acknowledged and respected.

Based on interview results, *segehan alit* functions as an offering directed toward these beings believed to inhabit the surrounding environment. This is consistent with the perspective of Puspa & Saitya (2020), who stated that *segehan* is intended for *Bhūta* to neutralize negative forces and foster harmonious relationships among all of God's creations. Rice in *segehan alit* is typically accompanied by spices such as *Zingiber officinale* and *Allium cepa* as complementary components. *Zingiber officinale* is characterized by a pungent and bitter taste, while *Allium cepa* possesses a strong aroma and flavor. These sensory properties are considered favorable to *Bhūta* within Hindu belief systems (Puspa & Saitya, 2020).

Philosophical meanings of ritual plants in the Purnama ceremony

The results of this study demonstrate that the diversity of plant species used in the Purnama ceremony by the Hindu community in Wagir District is closely linked to the utilization of local natural resources. This finding is consistent with previous studies indicating that Hindu religious rituals commonly incorporate plant species available in the surrounding environment as an integral part of local belief systems and cultural traditions (Raman, 2020). The use of 24 plant species from diverse families highlights the significant role of local biodiversity in sustaining ritual continuity, while also reflecting the community's adaptive cultural responses to local environmental conditions.

The utilization of plants as ritual components in the form of *banten* and *segehan alit* has also been reported in ethnobotanical studies conducted in other regions inhabited by Hindu communities, revealing comparable patterns of plant use with symbolic and ritual functions (Mulyanto et al., 2023). This similarity suggests that plants serve not merely as ceremonial complements but also as symbolic media representing religious, cultural, and social values. Accordingly, the findings of this study reinforce earlier conclusions that Hindu ritual practices are deeply interconnected with the sustainable use of natural resources.

The philosophical meanings attributed to plants in this study further indicate that each plant species holds specific symbolic significance within religious practices. The use of flowers as symbols of purity, sincerity, and reverence toward God aligns with Darma et al. (2021) assertion that flowers constitute a central element in Hindu offerings because they embody pure intentions and devotion. Additionally, the use of food plants and agricultural products, such as rice, coconut, and banana, has been widely documented in previous studies emphasizing their symbolic roles as representations of life, prosperity, and gratitude for nature's abundance (Mulyanto et al., 2023). The convergence of these findings suggests that the philosophical meanings of plants in the Purnama ceremony in Wagir District are embedded within a broader symbolic framework of Hindu tradition.

Conceptually, the relationship between the findings of this study and plant utilization in the Purnama ceremony can be understood through the principle of *Tri Hita Karana*, which emphasizes the balance of relationships between humans and God (*parhyangan*), among humans (*pawongan*), and between humans and nature (*palemahan*). This principle provides a foundational explanation for the selection and use of local plant species in ritual practices, as such use reflects reverence for nature as a source of life and a medium for spiritual connection with the divine. These findings support the perspective that Hindu ritual practices are not solely spiritually oriented but also encompass ecological values that promote environmental stewardship.

Beyond spiritual and symbolic dimensions, the study also reveals active efforts by the community to conserve ritual plant species through independent cultivation around Pura Dharma Yasa. The practice of growing plants in home gardens, orchards, and temple surroundings demonstrates the community's awareness of the importance of ensuring the sustainable availability of ritual plant resources. These results are consistent with Raman (2020) findings, which highlight

that nature-based religious practices can contribute to biodiversity conservation through culturally embedded social mechanisms transmitted across generations.

Overall, the use of plants in the Purnama ceremony in Wagir District functions not only as a ritual instrument but also as an expression of the integration of spiritual, social, and ecological values. The findings of this study reinforce existing evidence that religious traditions can serve as effective vehicles for cultural preservation, environmental conservation, and ecological education grounded in local wisdom within Hindu communities.

Conservation efforts for ritual plants in the Purnama ceremony

Plant cultivation is generally conducted in plantations, home gardens, and green areas surrounding the temple. The primary purpose of this practice is to facilitate community access to plant parts required for ritual use. In addition, cultivation contributes to the sustainability and long-term availability of ritual plant species (Saragih et al., 2024). Besides cultivation, plants used in the Purnama ceremony may also be obtained through market purchases. Traditional markets play an important role in cultural transmission, where spiritual and economic practices are closely intertwined (Iskandar et al., 2024). Interview findings indicate that plant materials purchased from markets are typically those that are difficult to cultivate locally or required only in small quantities for ceremonial purposes. Although coconut trees are commonly found in areas surrounding temples, coconuts are more frequently purchased due to limited human resources capable of harvesting them, particularly the lack of individuals able to climb coconut trees.

The IUCN conservation status of the recorded plants includes Not Evaluated (NE), Data Deficient (DD), and Least Concern (LC). NE indicates species that have not yet been assessed, while DD refers to species with insufficient data, such as *Pandanus amaryllifolius*, *Salacca zalacca*, and *Zingiber officinale*. LC species are abundant, widely distributed, and face a low risk of extinction (Blegur & Binsasi, 2022). Several ceremonial plant species, such as *Cananga odorata*, *Plumeria alba*, *Ixora javanica*, *Codiaeum variegatum*, *Pandanus tectorius*, *Erythrina variegata*, *Pyrus communis*, and *Pangium edule*, exhibit high adaptability and are widely cultivated, contributing to their abundant populations and low extinction risk (Fauziah & Allysa, 2024). The Hindu community in Jamuran Village demonstrates a high level of awareness regarding the conservation of ritual plants. This is reflected in the predominant use of plant species that are abundant, unprotected, and not classified as threatened. The reliance on ritual plants that are commonly found in home gardens and temple surroundings, and that are not subject to legal protection, indicates that the community actively considers nature conservation and recognizes the importance of preserving ritual plant resources (Arini et al., 2021).

CONCLUSION

This study demonstrates that ethnobotanical practices associated with the Purnama ceremony in Wagir District, Malang Regency, represent an integrated relationship between humans, nature, and spirituality. A total of 24 plant species belonging to 22 families are utilized by the Hindu community in various ritual offerings, including *banten* and *segehan alit*. Most of these plants are used in fresh form, symbolizing purity, balance, and harmony between humans, nature, and the divine. Each plant carries a specific philosophical meaning that reinforces its ritual significance, while conservation efforts are reflected through local cultivation practices and the selective purchase of plant materials from traditional markets. These practices highlight the role of local ecological knowledge in sustaining both ritual traditions and plant resources. Therefore, further research is recommended to explore in greater depth the processes of knowledge transmission and the preservation of ethnobotanical traditions within Hindu communities in the context of ongoing modernization.



ACKNOWLEDGMENT

Gratitude is extended to the lecturer of the Ethnobotany course for guidance and academic support, as well as to the assistants who provided help during the study. Special thanks are given to Romo Mangku, Sarati, the Head of Peradah Dusun Jamuran, and participants of the Purnama ceremony in Jamuran Hamlet, Sukodadi Village, Wagir District, Malang Regency, for providing valuable information that made this research possible.

REFERENCES

- Arini, W., Rhoma Saputra, V., & Ramadani, H. (2021). Pemanfaatan Tumbuhan Lokal secara Tradisional dalam Peningkatan Ketahanan Pangan oleh Suku Dayak Iban di Desa Mensiau, Kalimantan Barat. *Biotropika: Journal of Tropical Biology*, 9(1), 38–45. <https://doi.org/10.21776/ub.biotropika.2021.009.01.05>
- Berisha, R., Sökand, R., Nedelcheva, A., & Pieroni, A. (2022). The Importance of Being Diverse: The Idiosyncratic Ethnobotany of the Reka Albanian Diaspora in North Macedonia. *Diversity*, 14(11). <https://doi.org/10.3390/d14110936>
- Blegur, W. A., & Binsasi, R. (2022). Ancaman Spesies Invasif Di Hutan Produksi Ombit Kabupaten Timor Tengah Utara. *Syntax Idea*, 4(1), 228. <https://doi.org/10.36418/syntax-idea.v4i1.1739>
- Darma, I. D. P., Hanum, S. F., Iryadi, R., & Rahayu, A. (2021). Flowers and Value of Conservation in The Culture of Hindu Community in Bali. *Biosaintifika*, 13(1), 34–40. <https://doi.org/10.15294/biosaintifika.v13i1.27054>
- Darmawan, R. I., Indriyanto, K., & Mendröfa, M. P. (2025). Exploring ethnobotany as an expression of Balinese culture in Elizabeth Gilbert's Eat, Pray, Love. *Acta Scientiarum Language and Culture*, 47(1). <https://doi.org/10.4025/actascilangcult.v47i1.70096>
- Das Chatterjee, N., Senapati, A., & Dinda, S. (2025). Preserving biodiversity through culture: the role of sacred groves in medicinal plant conservation in Jungle Mahal, West Bengal, India. *Biodiversity and Conservation*. <https://doi.org/10.1007/s10531-025-03194-8>
- Ege, B., Bustami, Y., Wahyuni, F. R. E., & Nova, M. K. (2025). Ethnobotany of spice plants among the community of Emparu Baru Village, Dedai District, Sintang Regency. *JPBIO (Jurnal Pendidikan Biologi)*, 10(2), 540–552. <https://doi.org/10.31932/jpbio.v10i2.5628>
- Fauziah, I., & Allysa, T. N. (2024). Keanekaragaman Tanaman Buah di Kebun Raya Indrokilo dalam Upaya Konservasi Tanaman Lokal Kabupaten Boyolali. *Jurnal Informasi, Sains Dan Teknologi*, 7(2), 40–54. <https://doi.org/10.55606/isaintek.v7i2.259>
- Handayani, N. L. N. V. T., Juliasih, N. K. A., Arsana, N., & Suardana, A. A. K. (2023). Jurnal Ekologi, Masyarakat dan Sains. *Jurnal Ekologi, Masyarakat Dan Sains*, 4(2), 64–72. <https://doi.org/10.55448/ems>
- Harsono, B. M., Totok, H. P., & Lis, N. J. (2025). Ethnobotanical Study of Plant Utilization in the Balinese Ngaben Ceremony in Patoman Village, Banyuwangi Regency, Indonesia. *Biologi Educatia: Jurnal Pendidikan Biologi*, 5(2), 91–105. <https://doi.org/10.62734/be.v5i2.736>
- Irwandi, A., Ermayanti, E., Indrizal, E., & Erwin, E. (2024). Pergumulan Antara Modernisasi dan Identitas Budaya di Mentawai. *Umbara*, 9(1), 33–54. <https://doi.org/10.24198/umbara.v9i1.54420>
- Iskandar, D., Rully, R., & Yulia, A. C. 2024. Faktor Pembentuk Eksistensi Pasar Tradisional (Studi Kasus Pasar Tradisional Desa Gawok-Sukoharjo). *NALARs*, 23(2), 131–144. <https://doi.org/10.24853/nalars.23.2.131-144>



- Krisnawan, A. C., Febri Antika, C., Basman Ramadan, A., Surya Fuady, A., Yeni, R., & Khairiah, A. (2023). Prosiding SEMNAS BIO 2023 UIN Raden Fatah Palembang. *Prosiding SEMNAS BIO 2023*, 49–57.
- Miles, M.B., Huberman, A.M., & Saldana, J. (2014). *Qualitative Data Analysis: A Methods Sourcebook* (3rd ed.). Thousand Oaks, CA: SAGE Publications
- Mulyanto, D., Supangkat, B., Nurseto, H. E., & Iskandar, J. (2023). Ethnobotanical identification of mango (*Mangifera indica* L.) and other fruit trees mentioned in Old Javanese Ramayana (10th century Java, Indonesia). *Biodiversitas*, 24(1), 609–616. <https://doi.org/10.13057/biodiv/d240169>
- Nuraeni, S., Supangkat, B., & Iskandar, J. (2022). Kajian Etnobotani Tanaman Rempah sebagai Bumbu, Obat dan Kias. *UMBARA Indonesian Journal of Anthropology*, 7, 27–38. <https://doi.org/10.24198/umbara.v7i1.39395>
- Nurrosyidah, I. H., Riya, M. A., & Ma'ruf, A. F. (2020). Studi etnobotani tumbuhan obat berbasis pengetahuan lokal di Desa Seloliman Kecamatan Trawas Kabupaten Mojokerto Jawa Timur. *Jurnal Riset Kefarmasian Indonesia*, 2(3), 169–185. <https://doi.org/10.33759/jrki.v2i3.101>
- Pramita, N. H., Indriyani, S., & Hakim, L. (2013). Journal of Indonesian Tourism and Development Studies Etnobotani Upacara Kasada Masyarakat Tengger, Di Desa Ngadas, Kecamatan Poncokusumo, Kabupaten Malang. *J.Ind. Tour. Dev. Std*, 1(2). <http://jitode.ub.ac.id>
- Puspa, I.A.T., & Saitya, I.B.S. 2020. Estetika Hindu Pada Segehan Manca Warna. *Mudra Jurnal Seni Budaya*, 35(2), 139-144. <https://doi.org/10.31091/mudra.v35i2.1050>
- Raman, S. (2020). Healing in hinduism. In *Spirited Practices: Spirituality and the Helping Professions*. Taylor and Francis (pp. 33–42). <https://doi.org/10.4324/9781003117377-7>
- Saragih, Y.H.J., Damanik, Y.R., Annisa, K., & Saragih, E. (2024). Penanaman Pohon Sebagai Penghijauan Lingkungan Di Desa Wisata Tigaras. *Jurnal Pengabdian Masyarakat Sapangambe Manoktok Hitei*, 4(1), 43-48. <https://doi.org/10.36985/bj35wd54>
- Sudiarta, I. W. (2022). Kajian Theologi Hindu Pada Banten Daksina. *Dharma Duta*, 20(1), 1–18. <https://doi.org/10.33363/dd.v20i1.757>
- Suryatini, K.Y., Putriningsih, A.A.A., Wiadnyana, I. G. A. G., & Milati, N.M. (2023). Pemanfaatan Buah Lokal Sebagai Upakara Dan Upaya Pelestariannya. In *SEMBIO: Prosiding Seminar Nasional Biologi dan Pendidikan Biologi*, 2,1-7. <https://doi.org/10.59672/sembio.v2.3770>
- Yoga, I.D.G. (2025). Banten: Sarana Upacara Yadnya Masyarakat Hindu Bali dalam Perspektif Perubahan Sosial Budaya. *Acintya: Jurnal Teologi, Filsafat dan Studi Agama*, 1(1), 127-137. <https://e-journal.samsarainstitute.com/jtfsa/article/view/97>