

# Ethnomedicinal Value of Some Medicinal Plant growing Locally in Deoghar, Jharkhand, India

Archana Singh<sup>1</sup>, Nidhi Pateria Mishra<sup>2</sup>

Department of Botany, Madhyanchal Professional University, Bhopal

Corresponding Author Email: [archanasingh3443\[at\]gmail.com](mailto:archanasingh3443[at]gmail.com)

**Abstract:** *Ethnomedicine, rooted in the traditional knowledge and practices of indigenous communities, offers a wealth of information about the medicinal use of plants. In Deoghar, Jharkhand, India, where cultural diversity is rich, various communities have developed unique ethnomedicinal practices that are integral to their way of life. This study highlights the ethnomedicinal value of ten native plants used by the indigenous communities in Deoghar: Butea monosperma (Palash), Saccharum officinarum (Kash), Aegle marmelos (Bel), Bryophyllum pinnatum (Pattherchatta), Tagetes erecta (Genda), Rosa indica/Rosa damascena (Gulab), Datura stramonium (Dhatura), Clitoria ternatea (Aprajita), Nyctanthes arbor-tristis (Harshingar), and Cannabis sativa (Bhang). Each plant holds significant cultural and medicinal importance, with uses ranging from treating skin diseases and gastrointestinal disorders to respiratory problems and stress relief. The study reveals how traditional knowledge, passed down through generations, plays a crucial role in the healthcare practices of these communities. However, it also underscores the need for careful documentation and preservation of this knowledge in the face of modernization and the potential loss of biodiversity. The findings contribute to a broader understanding of ethnomedicine and highlight the importance of preserving traditional practices in the context of global healthcare.*

**Keywords:** Ethnopharmacology, Ethnomedicine, Deoghar, Traditional Knowledge, Medicinal Plants

## 1. Introduction

Ethnomedicine, the study of traditional medicine practiced by various ethnic groups, particularly indigenous populations, is a discipline deeply rooted in history [1]. It encompasses the knowledge, skills, and practices used by cultures to diagnose, treat, and prevent diseases, often involving a holistic approach to health that integrates spiritual, physical, and emotional well-being [2,3]. In recent years, ethnomedicine has gained global recognition as a valuable source of medicinal knowledge, particularly in the search for new drugs and therapies. Medicinal plants, which are an integral part of ethnomedicine, serve as a foundation for the health care practices of many indigenous communities. The state of Jharkhand in India, with its rich biodiversity and vibrant cultural heritage, is one such region where ethnomedicine and the use of medicinal plants are deeply intertwined with the lives of its indigenous populations [4,5].

Jharkhand, located in the eastern part of India, is renowned for its vast forested areas and diverse flora. The state is home to a significant tribal population, including Santhals, Oraons, Mundas, and Ho, among others. These communities have a long history of using medicinal plants for their healthcare needs, a tradition passed down through generations. The rich biodiversity of Jharkhand, combined with the indigenous knowledge of its people, makes it a treasure trove of ethnomedicinal practices. [6,7] The forests of Jharkhand are teeming with a wide variety of medicinal plants, many of which are used to treat ailments ranging from common colds to chronic diseases. For instance, the plant *Tinospora cordifolia* (locally known as Guduchi) is widely used by tribal healers to boost immunity and treat fever, diabetes, and jaundice [8,9]. Similarly, *Andrographis paniculata* (Kalmegh) is employed for its anti-inflammatory and hepatoprotective properties. The use of *Centella asiatica* (Brahmi) for enhancing memory and treating neurological

disorders is another example of the rich ethnomedicinal knowledge prevalent in Jharkhand [10,11].

The indigenous knowledge of medicinal plants in Jharkhand is not just limited to the treatment of common diseases. Several plants are also used for their therapeutic properties in more specialized areas. For example, the roots of *Withania somnifera* (Ashwagandha) are used for their adaptogenic properties, helping the body cope with stress [12]. The leaves of *Ocimum sanctum* (Tulsi) are used in the treatment of respiratory disorders, while *Aegle marmelos* (Bael) is employed in the treatment of gastrointestinal issues [13,14]. These plants, among many others, form the backbone of the traditional healthcare system in the region.

The ethnomedicinal practices in Jharkhand are closely linked to the cultural and spiritual beliefs of its tribal communities. Traditional healers, often referred to as "Pahans" or "Ojhas," play a crucial role in the preservation and dissemination of this knowledge. They are highly respected members of the community, and their expertise is sought after for various health issues. The healers use a combination of rituals, prayers, and medicinal plants to treat ailments, reflecting a holistic approach to health that is characteristic of ethnomedicine. [15]

Despite the wealth of knowledge and resources, the ethnomedicinal practices in Jharkhand face several challenges. The rapid pace of modernization, deforestation, and the erosion of traditional knowledge pose significant threats to the survival of these practices. Many younger members of the tribal communities are moving away from their traditional ways of life, leading to a gradual loss of knowledge about medicinal plants. Furthermore, the commercialization of medicinal plants and the entry of pharmaceutical companies into the region have led to over-exploitation of some plant species, endangering their survival. In recent years, there has been a growing recognition of the need to document and preserve the

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ethnomedicinal knowledge of Jharkhand. Various governmental and non-governmental organizations are working towards this goal by conducting ethnobotanical surveys, creating herbariums, and promoting the sustainable use of medicinal plants. These efforts aim to protect the rich biodiversity of the region and ensure that the traditional knowledge of its people is not lost. [16,17]

## 2. Materials and Methods

### Study Area

The study was conducted in Deoghar, a district in Jharkhand, India, known for its diverse flora and rich cultural heritage. Deoghar is predominantly inhabited by various tribal communities, including the Santhal, Oraon, Munda, and Ho tribes, who rely on traditional knowledge for their healthcare needs. The region's climate is tropical, with dense forests that support a variety of medicinal plants. The ethnomedicinal practices in this area are deeply connected to the local ecology and the cultural practices of its inhabitants.

### Selection of Plant Species

The selection of the ten native plants for this study was based on their prominence in the traditional healthcare practices of the indigenous communities in Deoghar. Information on the medicinal uses of these plants was gathered through field surveys, interviews with local healers (Pahans and Ojhas), and community elders who possess extensive knowledge of ethnomedicine. The plants selected include *Butea monosperma* (Palash), *Saccharum officinarum* (Kash), *Aegle marmelos* (Bel), *Bryophyllum pinnatum* (Pattherchatta), *Tagetes erecta* (Genda), *Rosa indica/Rosa damascena* (Gulab), *Datura stramonium* (Dhatura), *Clitoria ternatea* (Aprajita), *Nyctanthes arbor-tristis* (Harshingar), and *Cannabis sativa* (Bhang). These plants were chosen based on their frequent mention in local medicinal practices and their widespread availability in the region.

### Data Collection

Data collection involved a combination of ethnobotanical surveys, interviews, and participant observation. Ethnobotanical surveys were conducted in various villages across Deoghar to document the medicinal plants used by the local communities. Semi-structured interviews were carried out with traditional healers, community elders, and knowledgeable individuals to gather detailed information on the medicinal uses of the selected plants. The interviews focused on the parts of the plant used, methods of preparation, dosage, and the specific ailments treated.

Participant observation involved spending time with the local communities and observing the preparation and application of medicinal plants in real-time. This method provided insights into the practical aspects of ethnomedicine, such as the rituals and cultural practices associated with the use of these plants.

### Plant Identification

The collected plant specimens were identified using standard taxonomic methods and verified with the help of local botanists.

### Documentation and Analysis

The ethnomedicinal data collected were documented in a structured format, including the plant's scientific name, local name, parts used, method of preparation, and the ailments treated. This information was analyzed to identify commonalities and differences in the use of plants among the different communities. The analysis also focused on understanding the cultural significance of these plants and their role in the health and well-being of the local population.

### Ethical Considerations

The study adhered to ethical guidelines for ethnobotanical research, ensuring informed consent from all participants. The intellectual property rights of the indigenous communities were respected, and any sensitive information was kept confidential. The study aimed to benefit the local communities by providing a platform for documenting and preserving their traditional knowledge, while also contributing to the broader field of ethnomedicine.

## 3. Results and Discussion

### Ethnomedicinal value

Ethnomedicine refers to the traditional knowledge and practices of various indigenous communities regarding the use of plants for medicinal purposes. In Deoghar, Jharkhand, India, where cultural diversity thrives, different communities have their unique ethnomedicinal practices (**Table 1**). The following discussion highlights the ethnomedicinal value of the ten native plants among various communities in Deoghar:

#### 1) *Palash k Phool (Butea monosperma)*:

Among the indigenous communities in Deoghar, Palash holds significant ethnomedicinal value. Its flowers, bark, and leaves are used in traditional medicine to treat various ailments, including skin diseases, gastrointestinal disorders, and respiratory problems. The Santal and Santhal tribes, prominent in the region, utilize Palash extracts for its anti-inflammatory and antimicrobial properties.

#### 2) *Kash k Phool (Saccharum officinarum)*:

Sugarcane, or Kash, is not only a staple crop but also holds ethnomedicinal importance among the local communities. Its juice is consumed for its cooling properties during the hot summer months, aiding in hydration and combating heat-related illnesses. Additionally, sugarcane juice is believed to possess rejuvenating properties, particularly among the Adivasi and Munda communities.

#### 3) *Bel (Aegle marmelos)*:

Bel is revered for its medicinal properties in Deoghar, with its fruits, leaves, and roots being used in traditional medicine. Among the local communities, including the Oraon and Ho tribes, Bel is utilized to treat digestive disorders, respiratory ailments, and skin conditions. Its leaves are often chewed to alleviate gastrointestinal issues, while the fruit pulp is consumed to boost immunity.

#### 4) *Pattherchatta (Bryophyllum pinnatum)*:

Pattherchatta, known as the Miracle Leaf, holds a special place in ethnomedicine in Deoghar. Its succulent leaves are

used topically to treat wounds, burns, and insect bites. The plant's ability to propagate from leaf margins is well-known among the local communities, who often cultivate it in home gardens for its medicinal benefits. The Santhal and Munda tribes utilize Pattherchatta as a natural remedy for various skin ailments.

#### 5) *Genda (Tagetes erecta)*:

Genda, or Marigold, is valued for its ethnomedicinal properties among different communities in Deoghar. Its flowers are used to prepare poultices and ointments for treating wounds, cuts, and bruises. The plant is also believed to have antimicrobial properties, making it a popular choice for disinfecting minor injuries. Among the indigenous communities, including the Santal and Oraon tribes, Genda holds cultural significance and is often incorporated into rituals and ceremonies.

#### 6) *Gulab (Rosa indica or Rosa damascena)*:

Gulab, or Rose, is esteemed for its ethnomedicinal value in Deoghar, where its petals are used in traditional medicine. Rose water, extracted from its flowers, is believed to have cooling and astringent properties, making it an essential ingredient in skincare preparations. The fragrance of Gulab is also valued for its therapeutic effects, promoting relaxation and reducing stress. Among the local communities, including the Santhal and Munda tribes, Gulab is used in various rituals and ceremonies for its auspicious symbolism.

#### 7) *Dhatura (Datura stramonium)*:

Dhatura, although toxic, is utilized in ethnomedicine among certain communities in Deoghar, albeit with caution. Its leaves and seeds are used in traditional medicine to alleviate respiratory problems, such as asthma and bronchitis. However, due to its potent toxicity, the use of Dhatura is

restricted and requires expert knowledge among the local healers. Among the Santal and Ho tribes, Dhatura is used sparingly in specific medicinal preparations under controlled doses.

#### 8) *Aprajita (Clitoria ternatea)*:

Aprajita, or Butterfly Pea, is valued for its ethnomedicinal properties among different communities in Deoghar. Its flowers are used to prepare herbal teas and decoctions known for their antioxidant and anti-inflammatory properties. Aprajita tea is believed to promote relaxation, improve cognitive function, and enhance overall well-being. Among the indigenous communities, including the Munda and Oraon tribes, Aprajita is also used as a natural dye for textiles.

#### 9) *Harshingar (Nyctanthes arbor-tristis)*:

Harshingar, or Night-flowering Jasmine, is esteemed for its ethnomedicinal value in Deoghar. Its fragrant flowers are used in traditional medicine to treat fever, arthritis, and digestive disorders. The leaves of Harshingar are also utilized for their antipyretic and analgesic properties. Among the local communities, including the Santhal and Ho tribes, Harshingar is often incorporated into medicinal decoctions and poultices for its therapeutic effects.

#### 10) *Bhang (Cannabis sativa)*:

Bhang, although primarily known for its psychoactive properties, holds ethnomedicinal significance among certain communities in Deoghar. Its leaves and flowers are used in traditional medicine to alleviate pain, induce relaxation, and stimulate appetite. Bhang preparations are also believed to have antiemetic properties, making them useful for relieving nausea and vomiting. However, due to legal restrictions and concerns regarding substance abuse, the use of Bhang in ethnomedicine is limited and closely regulated.

**Table 1:** Different medicinal plants and their use as ethnomedicine in Deoghar, Jharkhand, India

Plant Name	Local Name	Parts Used	Ethnomedicinal Uses	Communities
<i>Butea monosperma</i>	Palash	Flowers, bark, leaves	Treats skin diseases, gastrointestinal disorders, respiratory problems; has anti-inflammatory and antimicrobial properties	Santal, Santhal
<i>Saccharum officinarum</i>	Kash	Juice	Cooling properties, aids in hydration, combats heat-related illnesses, has rejuvenating properties	Adivasi, Munda
<i>Aegle marmelos</i>	Bel	Fruits, leaves, roots	Treats digestive disorders, respiratory ailments, skin conditions; boosts immunity	Oraon, Ho
<i>Bryophyllum pinnatum</i>	Pattherchatta	Leaves	Treats wounds, burns, insect bites; used as a natural remedy for various skin ailments	Santhal, Munda
<i>Tagetes erecta</i>	Genda	Flowers	Used in poultices and ointments for wounds, cuts, bruises; has antimicrobial properties	Santal, Oraon
<i>Rosa indica/Rosa damascena</i>	Gulab	Petals	Cooling and astringent properties; promotes relaxation, reduces stress; used in skincare preparations and rituals	Santhal, Munda
<i>Datura stramonium</i>	Dhatura	Leaves, seeds	Treats respiratory problems like asthma and bronchitis; used with caution due to toxicity	Santal, Ho
<i>Clitoria ternatea</i>	Aprajita	Flowers	Antioxidant and anti-inflammatory properties; promotes relaxation, cognitive function, and well-being	Munda, Oraon
<i>Nyctanthes arbor-tristis</i>	Harshingar	Flowers, leaves	Treats fever, arthritis, digestive disorders; has antipyretic and analgesic properties	Santhal, Ho
<i>Cannabis sativa</i>	Bhang	Leaves, flowers	Alleviates pain, induces relaxation, stimulates appetite, relieves nausea and vomiting	Various (under regulation)

## 4. Limitations

The study faced certain limitations, including the reluctance of some community members to share knowledge due to the sacred nature of ethnomedicine. Additionally, the

documentation of traditional practices was challenging due to the oral transmission of knowledge and the lack of written records. Despite these challenges, the study provides valuable insights into the ethnomedicinal practices of

Deoghar and underscores the importance of preserving this knowledge for future generations.

## 5. Conclusion

The study of ethnomedicinal practices in Deoghar, Jharkhand, highlights the deep connection between the indigenous communities and their natural environment. The ten native plants examined—*Butea monosperma*, *Saccharum officinarum*, *Aegle marmelos*, *Bryophyllum pinnatum*, *Tagetes erecta*, *Rosa indica/Rosa damascena*, *Datura stramonium*, *Clitoria ternatea*, *Nyctanthes arbor-tristis*, and *Cannabis sativa*—are integral to the traditional healthcare systems of the Santhal, Oraon, Munda, and Ho tribes. These plants are not only valued for their medicinal properties but also hold cultural and spiritual significance. The study emphasizes the urgent need to document and preserve this traditional knowledge, which is at risk due to modernization and environmental changes. By recognizing and safeguarding the ethnomedicinal heritage of Deoghar, we can contribute to the conservation of biodiversity and the sustainable use of medicinal plants, ensuring that this valuable knowledge continues to benefit future generations.

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