



## Indigenous Knowledge and Ethnomedicinal Practices among the Santal Tribe of Birbhum, West Bengal

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### Abstract

*This study explores the present status of indigenous knowledge related to medicinal plants among the Santal tribes residing in the Birbhum district of West Bengal, India. With a rich heritage of ethnomedicinal practices, the Santal community holds significant traditional knowledge that has been passed down orally through generations. The primary objectives of this research are twofold: firstly, to assess the current extent and usage of traditional medicinal plant knowledge within the community; and secondly, to identify and document the medicinal practitioners, locally known as ojhas or traditional healers, who play a vital role in preserving and disseminating this knowledge. The study employs qualitative methods, including field surveys, interviews, and participatory observations, to gather insights from community members, particularly elders and medicinal men. The findings aim to highlight both the resilience and the challenges facing this indigenous knowledge system in the context of modernization, socio-cultural changes, and declining interest among younger generations. This research contributes to the broader understanding of ethnobotany and the urgent need for documentation and preservation of traditional health practices among indigenous communities.*

**Keywords:** *Indigenous Knowledge, Medicinal Plants, Santal Tribe, Traditional Healers, Ethnobotany*

### Introduction

Indigenous knowledge is a rich blend of cultural, spiritual, social, and practical wisdom that guides how communities live and interact with nature (IDRC, 1993). For generations, tribal societies—especially those in remote rural areas—have preserved and passed down traditional knowledge, particularly in the use of medicinal plants. Forests play a central role in their lives, providing essential resources like food, fuel, and medicine. Despite facing challenges such as poor health, malnutrition, poverty, and limited access to healthcare, tribal communities have developed their own medical systems led by traditional healers. Traditional or folk medicine, mostly plant-based, remains vital to their lives. The WHO estimates that about 80% of the global population still relies on such practices for primary healthcare.

In India, Scheduled Tribes constitute 8.2% of the population (Census 2001), and in West Bengal, they make up 5.5%, with 40 recognized tribes. The Santals are the largest group, forming 51.8% of the state's tribal population. Concentrated in forested districts like Bankura, Birbhum, Burdwan, and Medinipur, the Santals have

developed extensive knowledge of medicinal plants through generations of close interaction with their natural surroundings.

### ***Origin of the Santals***

According to Santal mythology, their ancestors originated from two eggs laid by a wild goose at Hihiri Pipri, which hatched into Pilchu Haram and Pilchu Budhi. They had 14 children—seven sons and seven daughters—who married among themselves, after which sibling marriage was forbidden. Their descendants formed seven main exogamous clans: Hansdak/Hansda, Murmu, Kisku, Hembrom, Mandi/Marandi, Soren, and Tudu. Over time, these clans expanded into over a hundred sub-clans, often named after natural elements.

Though the Santals lack written records, scholars believe they migrated either from the northwest or northeast of India before settling in the Chhotanagpur plateau. Historical evidence shows that by the 18th century, they had established themselves in areas like Birbhum, Burdwan, and Chhotanagpur. With the creation of the Damin-i-Koh estate in 1833 (now part of Jharkhand), large numbers of Santals migrated there—over 83,000 by 1851. Today, in the Santal Parganas region (including Dumka, Godda, and Deoghar), they make up more than one-third of the population.

### ***General Characteristics and Community Life of the Santals***

The Santals are known for their cheerful, hardworking, and resilient nature. Music and dance are central to their culture, accompanying both celebrations and daily life. They value community cooperation, especially in farming, and often share rice beer (*handi*) during festivals. Their diet is mainly rice and vegetables, along with some meat and forest foods.

Traditionally semi-nomadic, Santals now practice settled agriculture, hunting, and gathering. Their clean, mud-built homes feature decorative wall paintings reflecting their artistic and spiritual values. They worship *Thakur Jiu* (the Supreme God) and various spirits (*Bongas*), practicing ancestor worship and rituals tied to nature.

The community rejects the caste system, maintaining equality among clans. Social unity and traditional values are central to their identity. Families are typically patriarchal, with men heading households. Though women do not inherit property, they play vital roles in family management and have freedom in domestic and economic activities.

### ***Forest-Tribe Relationship***

For generations, tribal communities have shared a close, sustainable relationship with forests, which provide them with food, medicine, fuel, and income. In India, around 53 million tribal people—about 60% of the rural tribal population—depend on forest resources for their livelihood. Despite social and economic marginalization, their traditional ecological knowledge promotes conservation and balance with nature. In West Bengal's Birbhum district, for example, the Santals sustainably gather forest products, helping protect biodiversity while supporting their daily needs.

### ***Importance of Medicinal Plants***

Medicinal plants are used to prevent or treat diseases and are generally safe for human use. They may grow naturally or be cultivated by humans. Herbal medicine has long been central to traditional healing and remains important today. Between 1950 and 1970, about 100 plant-based drugs—such as vincristine and deserpentine—were developed in the U.S. Despite advances in synthetic drugs, many conditions like liver disease, diabetes, and digestive disorders still rely on plant remedies.

Growing interest in herbal medicine stems from its perceived safety and fewer side effects. In many countries across Africa, Asia, and Europe, traditional and modern treatments coexist in healthcare. As research expands, medicinal plants continue to provide valuable sources for both modern drugs and traditional therapies.

## Review of Related Literature

Panghal et. al (2010) carried out a study titled "*Indigenous knowledge of medicinal plants used by the Saperas community of Khetawas, Jhajjar District, Haryana, India.*" The research focused on documenting the ethnobotanical knowledge and traditional medicinal practices of the snake charmer (Saperas) community in Khetawas village, located in Jhajjar district, Haryana—an area where limited prior research had been conducted. Data on plant usage and traditional remedies were collected through semi-structured oral interviews with knowledgeable rural individuals. The study found that members of the Saperas community utilize 57 species of medicinal plants, spanning 51 genera and 35 plant families, for treating a wide range of health conditions.

Mondal & Rahaman (2012) conducted a study titled "*Medicinal Plants Used by Tribal People of Birbhum District of West Bengal and Dumka District of Jharkhand in India.*" The research focused on documenting indigenous knowledge related to the ethnomedicinal use of plants by tribal communities living in the border areas of Birbhum (West Bengal) and Dumka (Jharkhand). This ethnobotanical survey was carried out to gather information on how medicinal plants are traditionally used by these communities. The study identified 28 ethnomedicinal plant species, which are utilized in preparing 10 different traditional remedies used to treat 10 types of diseases and health conditions.

Guruprasad et al., (2013) carried out an anthropological study titled "*Indigenous Knowledge on Medicinal Plants among the Iruliga Tribal Population of Western Ghats Areas, Karnataka, India.*" The study explored the Iruliga tribe's traditional knowledge of medicinal plants, including their preparation and use for treating ailments. Fieldwork involving observation, interviews, and case studies with 100 participants revealed that the tribe inhabits areas rich in medicinal herbs and that traditional healers hold extensive knowledge. However, this knowledge is declining as younger members migrate to urban areas and show less interest in traditional practices.

## Objective of the Study

1. To know the present scenario of the indigenous knowledge on medicinal plants among santal tribes in Birbhum district.
2. To find medicinal men in the santal community.
3. To know the history of the acquisition of the knowledge on medicinal plants.
4. To know the future tendency of the said knowledge.

## Research Questions

1. What is the present scenario of the indigenous knowledge on medicinal plants among santal tribes?
2. How does the member of santal community acquire knowledge on medicinal plants?
3. How many medicinal men found in the santal community of Birbhum district?
4. What is the future tendency of the mentioned indigenous knowledge?

## Methodology of the Study

This study uses a qualitative ethnographic approach to document the Santal community's traditional medicinal plant knowledge in Birbhum, West Bengal. Villages with active ojhas (healers) and ongoing herbal practices were selected. Using purposive sampling, 20–30 participants—including elders, healers, and knowledgeable locals—were interviewed. Data were gathered through semi-structured and key informant interviews, participant observation, field notes, photography (with consent), and herbarium specimen collection. Thematic analysis focused on healer roles, knowledge transmission, plant use, and cultural shifts. Ethical measures included informed consent, confidentiality, cultural respect, and sharing results with the community.

## Result and Discussion

### *History of the Transmission of Indigenous Knowledge on the Use of Medicinal Plants*

Research shows that most tribal groups in Birbhum live near forests rich in medicinal plants, but little attention has been given to the Santals' specific traditional knowledge of these resources. Their deep ecological understanding, built through generations of interaction with nature, has often been dismissed as unscientific due to colonial stereotypes portraying Adivasis as primitive. In truth, they developed sophisticated, adaptive systems for managing natural resources and sustaining life in harmony with their environment. Although pre-colonial Adivasi life incorporated some external influences, colonial rule disrupted and reshaped their traditional practices, replacing indigenous methods with imposed "modern" ones and altering their relationship with nature.

### **Nature of Interaction Between the Santal Community and Plant Resources**

Human societies interact with nature in different ways shaped by their food, health, work, and beliefs. For the Santals, these interactions have fostered deep knowledge of local plants and their uses. Their spiritual beliefs, taboos, and traditions help protect forests and biodiversity. The true value of plant diversity lies not only in species count but also in the community's understanding and dependence on them. Recognizing such indigenous knowledge is vital for sustainable resource conservation.

### **Transmission of Knowledge**

Within the Santal community, common knowledge is shared through daily life, while specialized wisdom is held by elders, healers, and ritual leaders closely tied to local traditions and places. These knowledge-keepers preserve culture through stories and teachings and are highly respected within their communities, though their expertise is often undervalued in academic and scientific settings.

*Oral Transmission:* Oral traditions—stories, myths, and historical tales—are vital to preserving traditional knowledge, serving as shared memory and education within communities. Validated by elders, these narratives combine storytelling and performance to reinforce culture. In the study area, many Santals learn about medicinal plants through family teachings and community stories, with around 30% acquiring their knowledge from such oral traditions.

*Transmission Through Medicine Men:* The number of medicine men in the studied area is relatively small. Present-day practitioners say they inherited their knowledge from their forefathers, who were highly regarded in their communities for their healing abilities. In the past, the Santal people placed deep trust in these medicine men.

*Through Specialized Training:* About 15–20 years ago, most Santals had little formal education, and medicine men learned plant-based healing through ancestral knowledge and experience rather than official training. Recently, some have received formal instruction to integrate scientific perspectives, supported by organizations like Nayantara Memorial Trust and Visva-Bharati's Rural Development Centre. Some have even trained outside West Bengal, in states such as Bihar and Jharkhand, to further preserve and expand Santal medicinal knowledge.

### **Finding Medicine Men Among the Santal Tribes in Birbhum**

In the past, Indigenous communities, such as Native Indians, relied on traditional healers or medicine men instead of modern doctors. These healers used various parts of plants—leaves, roots, stems, flowers, berries—to treat common ailments like colds, fevers, asthma, and insect bites, now known as medicinal plants. Knowledge was gained through practice and passed down orally rather than written records. Today, this tradition continues in some tribal communities, though the number of practicing medicine men is declining due to greater access to modern healthcare and improved living conditions. Some Santals still preserve and transmit this traditional healing knowledge across generations.

## Nature of Medicine Men

Within the Santal community, medicine men hold a special position due to their unique abilities and traits. Some of their key characteristics include:

1. They inherit knowledge about medicinal plants from their ancestors.
2. Many of them chant *mantras* while applying specific parts of a plant (such as root, leaf, or stem) to treat illnesses.
3. They are generally calm, confident, and deeply rooted in their beliefs.
4. They behave like a wise teacher or a friendly guide to others.
5. They are highly trusted within their communities.
6. They usually do not charge fees for their services—only a small amount for the cost of the medicine, which is very affordable.
7. They maintain strong relationships with other members of their community.
8. Women medicine practitioners often show a stronger inclination toward spiritual practices than their male counterparts.
9. In today's era of increased access to information, some medicine men have received formal education. They combine traditional healing knowledge inherited from their parents with modern training in ethno-medicine.
10. They are known for being hard working and dedicated to their practice.

## Current Medicine Men in Birbhum

In Birbhum district, the Santal community forms a significant portion of the population in various regions. During visits to several villages in the Bolpur, Suri, and Rampurhat subdivisions, **only 10 medicine men** were found to be actively practicing traditional healing. These include:

***Raphael Murmu, Laxmi Tudu, Malati Hansda, Robi Tudu, Debi Murmu. Ganesh Kora, Binoy Kora, Billu Hansda, Dharom Hansda, Somai Hansda***

All of them are actively involved in using various parts of plants as raw materials for treating a wide range of diseases.



Raphael Murmu, Age- 55 years, Identity- Kobiraj, Sub div- Rampurhat and Debi Murmu, Age- 75years, Identity- Roza, Sub div- Bolpur

**Figure 1: Few Medicinal men in Birbhum district**

Table 1: List of Medicine men found in Birbhum district

Sl. No.	Name of the Medicine men	Age Yrs	G.P/Sub-div	Special Identity In the community	Name of the motivator/ training Centre	EXP (Yrs)
1.	Raphael Murmu	55	Rampurhat Sub- division	Kobiraj	Mother plus trained in Bhagolpur	25
2.	Malati Hansda	60	Bolpur Sub division	Raza/ Janguru	Father in law	23
3.	Debi Murmu	75	Suri Sub-division	Janguru / Raza	Father in law	28
4.	Laxmi Tudu	55	Bolpur sub – division	Kobiraj	Father	22
5.	Binoy kora	48	Bolpur Sub - Division	Kobiraj	Grand- father	15
6.	Robi Tudu	86	Bolpur sub- Division	Janguru	Mother	45
7.	Billu Hansda	45	Suri Sub- Division	Janguru	Grand– father	12
8.	Dharom Hansda	66	Bolpur sub- Division	Kobiraj	Father	35
9.	Ganesh kora	68	Bolpur sub – division	Kobiraj	Mother	39
10.	Somai Hansda	63	Suri sub- Division	Janguru	Grand– mother	34

## Present scenario of Indigenous Knowledge among Santal Tribe son using Medicinal Plants

A few decades ago, Birbhum's dense forests made the region rich in medicinal plants, with tribal communities, including the Santals, relying on them for health care. Traditional medicine men guided herbal remedies, which were later adopted by others. Santals living near forests and rivers in western Birbhum still use medicinal plants extensively, and even those in mixed settlements often grow them in kitchen gardens. This study examines the current use of medicinal plants among the Santals based on their traditional knowledge.

## Changes Observed in the Community

After reviewing past records and engaging directly with the Santal people, the following changes have been noted:

- The number of traditional medicine men is declining, mainly due to aging, while younger generations show less interest in learning about medicinal plants.
- Deforestation and human activities have reduced forest areas, limiting the Santals' interaction with these natural spaces.
- Living in mixed cultural environments has weakened the traditional medicinal plant practices among the Santals.
- Existing medicine men and some community members still collect medicinal plants from nearby or distant forests to prepare remedies for specific ailments.
- With the rise of hospitals and modern medical facilities, many Santals are moving away from their traditional healing practices.
- Nevertheless, some patients suffering from chronic conditions like diabetes, jaundice, and gout still rely on traditional medicine due to the fast and effective results from herbal formulations.
- Researchers and students frequently visit the community to gather information on medicinal plant usage.
- Several NGOs provide free training and advice to the Santal people on the preparation and application of herbal remedies, helping to preserve and expand their knowledge.
- Many Santal families now sell medicinal plants—such as tender Neem and Moringa leaves, or twigs of Kulekhara and Guduchi (*Tinospora cordifolia*)—in local markets as a source of livelihood.

## Common Diseases in the Santal Community

Due to certain unhealthy practices and low immunity, the Santal people are commonly affected by illnesses such as fever, cough, cold, liver and lung diseases, gout, respiratory issues, jaundice, headaches, abdominal pain, and complications during childbirth.

## Use of Medicinal Plants by the Santal Tribes

The study documented the Santal community's use of twenty medicinal plants, employed by both medicine men and villagers in specific combinations to treat various ailments. Commonly used plants include Vasaka, Tulsi, Neem, Guduchi, Kulekhara, Apang, Kalmegh, Harjora, and Papaya. The Santals possess detailed knowledge of which plant parts to use and the proper preparation methods. Traditional tools like mortars and pestles are still used, though some now use modern grinders to make pastes, which are sometimes dried and shaped into tablets for convenience. Herbaceous plants are primarily used, with practices aimed at sustainably preserving natural resources.



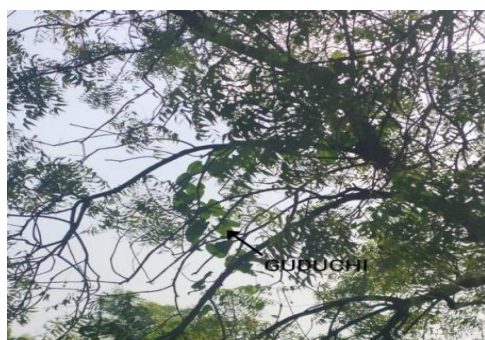
Figure 2: A santal woman has planted two medicinal plants named as 'Patharkuchi' (left side) and 'Harjora' (right side)

**Table 2: List of ethnomedicinal plants used by the santal tribes of Birbhum**

Sl. No.	Name of the Plant	Local name	Human disorder	Part of plant used	Method of preparation
1.	<i>Bryophyllum Pinnatum</i>	Patharkuchi	Diarrhoea, Ulcer	Leaves	Leaves are smashed to make pills to prevent Diarrhoea And Ulcer.
2.	<i>Tinospora cordifolia</i>	Guduchi, Neem guloncha	Diabetes mellitus	Stem	Partially smashed pieces of stem kept in a glass of water at night and this water is taken orally at morning before breakfast for 3 days in a week to treat diabetes Mellitus
3.	<i>Heliotropium indicum</i>	Hatishur	Wounds & skin infection, snakebites, Leukorrhea	Whole plant, Leaves, Root	Paste of whole plant is used to treat wound & skin infection; leaf juice mixed with hot water is used to treat snake bites and scorpion sting, Paste of root and white China rose is Used to treat leukorrhea
4.	<i>Achyranthus aspera</i>	Apang, Chirchira	Jaundice	Root	Paste of the roots mixed with jaggery is taken orally to treat jaundice.
5.	<i>Asparagus racemosus</i>	Satamuli	Gastric problem	Root	Smashed roots mixed with black pepper is taken orally to get rid of gastric problem
6.	<i>Cissus quadrangularis</i>	Hadjora	Bone fractures	Stem	Salt added paste of stem with mild temperature, is applied on the skin to cure bone fractures.
7.	<i>Andrographis paniculata</i>	Kalmegh	Snakebites, Diabetes	Whole plant	Paste of whole plant is applied on the snake beaten or any poisonous insect beaten part of the body to get rid of snake bites; Decoction of leaves are taken orally to treat diabetes.
8.	<i>Aloevera</i>	Ghritkumari	Skin injuries due to burn, Piles	Leaves	Pulp of juicy leaves is applied on the burned skin and it is eaten up to get rid of Piles.

9.	<i>Carica papaya</i>	Pepe	Tuberculosis	Latext of leaves and stem	White latex of the plant mixed with water is drunk to treat TB
10.	<i>Vitax negundo</i>	Nishinda	Headaches, neck gland sores, catarrh, Fever	Leaves	Both dried leaves used in the pillow and the crushed leaves are used externally to treat headaches, catarrh, neck gland sore, fever. Smoking of the dried leaves are also useful for the same purpose
11.	<i>Ocimum sanctum</i>	Bontulshi	Cough&col d	Leaves	Leaves chewed with honey give best result to cough & cold
12.	<i>Adhatoda vasica</i>	Vasaka	Cough & cold	Leaves	Bathing by using mild hot water with decoction of leaves used to treat cough & cold.
13.	<i>Azadirachta indica</i>	Neem	Leprosy, Diabetes, intestinal worm, oral infection	Leaves, Twig	Leaf extract is either used to make pill or directly eaten to get rid of leprosy, diabetes, intestinal worms. Major part of the twig is used as toothbrush to remove oral infection
14.	<i>Hygrophila auriculata</i>	Kulekhara	Anaemia	Leaves	Leaf extract is taken internally to remove anaemia.
15.	<i>Centella asiatica</i>	Thankuni	Dysentery, Wound, Fever, Ulcer	Whole plant	Whole plant extract is taken internally to remove the mentioned disorders.
16.	<i>Commelina benghalensis</i>	Kansiri	Burns, Indigestion	Whole plant	Paste of whole plant used to treat burns and decoction of root taken internally to remove indigestion.
17.	<i>Terminalia arjuna</i>	Arjun	Heart problem, Chestpain	Bark	Powder of the bark is taken by mouth to remove the chance of Heart attack and chest pain.
18.	<i>Calotropis procera</i>	Akanda	Dysentery, ringworm, pneumonia	Barkof stem&root	Powdered root& stem bark mixed with mild heated water to treat the mentioned disorders.

19.	<i>Catharanthus roseus</i>	Nayantara	Diabetes	Leaves	Decoction of small amount of leaves in 1 litre water, is drunk at morning in empty stomach.
20.	<i>Cassia alata</i>	Daad gach	Ringworm, Itching	Leaves	Grinded leaf juice is applied on infected skin.



Neem Plant with Guduchi



Akanda



Hatishur



Vasaka

**Figure 3: Picture of some medicinal plants used in indigenous culture**

### Major Findings

- Most traditional healers are elderly, while younger community members show limited interest in medicinal plant use.
- Deforestation and the loss of native plant species are reducing opportunities for learning and practicing ethnomedicine.
- Twenty different medicinal plants were documented, including Neem, Tulsi, Guduchi, Kulekhara, Vasaka, and Papaya.
- The spread of modern medical facilities has led to a decline in the use of indigenous knowledge among Santals, especially those living near urban areas or in mixed communities.
- Among the medicine practitioners, 60% were men and 40% were women. Female healers had an average of 29.5 years of experience; male healers had 26.6 years.
- Only 10% of these practitioners had formal training in herbal medicine; the rest learned orally through family and community traditions.
- Many Santal families earn a living by selling medicinal plants in local markets.
- Oral transmission remains the dominant method of knowledge sharing in the community.

## Educational Implications

This study highlights the importance of integrating indigenous knowledge into the education system. Since education is itself a form of cultural development, preserving and teaching such knowledge can benefit both individuals and communities. The following educational applications are suggested:

- **Sustainable Knowledge Sharing:** Teaching traditional healing methods promotes self-reliance in managing minor health issues.
- **Social Contribution:** Educated individuals with indigenous knowledge can serve their communities effectively.
- **Environmental Education:** Understanding plant-based remedies encourages the conservation of local biodiversity.
- **Curriculum Integration:** Indigenous medicine should be part of the school curriculum at the primary and secondary levels to ensure early awareness.
- **School Herbal Gardens:** Schools should maintain medicinal gardens and educate students about the uses of various plants, enabling practical learning and application during school hours.

## Conclusion

Indigenous knowledge stands as one of the most valuable forms of knowledge in the world, as many modern systems have evolved from it. In earlier times, when modern medical facilities were unavailable, people relied entirely on traditional healers like the *ojha*, *Roza*, *Janguru*, and *kobiraj*, who used herbal remedies. These healers held a vital place in society. However, with the advancement of education and technology, their importance has significantly declined. According to many traditional healers, medicinal plants are rapidly disappearing due to factors such as lack of cultivation, urban expansion, deforestation, and overgrazing by animals. This study highlights the negative trends affecting indigenous knowledge in the current context. The fact that there are very few young traditional healers among the Santal tribes of Birbhum suggests a stagnation in the transmission of knowledge related to medicinal plants. As a result, the future of this indigenous cultural practice is under serious threat. To address this issue, the government should take proactive measures—such as providing farming support for medicinal plant cultivation, offering specialized training to enhance the skills of traditional healers, promoting awareness about the health benefits of medicinal plants, and integrating the study of these plants as a compulsory subject in primary and secondary education through a spiral curriculum. In addition, efforts should be made to prevent deforestation and encourage the planting of medicinal species in forested areas. These steps would help the Santal people preserve their ethnomedical traditions. In conclusion, conserving both medicinal plants and the traditional healers who use them is essential for sustaining indigenous knowledge and supporting a truly sustainable Santal community.

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