



Traditional Knowledge and Use of Medicinal Plants by Indigenous Tribes of Surgana Region

Aditi S. Kale¹  and Tambe S.S.²

¹Research Scholar, PG Department of Botany & Research Centre MGV's L.V.H. Arts, Science & Commerce (Autonomous) College Panchvati, Nashik, 422003

²Associate Professor, PG Department of Botany & Research Centre MGV's L.V.H. Arts, Science & Commerce (Autonomous) College Panchvati, Nashik, 422003

Email: askale08.ak@gmail.com | Cell: 7741838904

Manuscript details:

Received: 09.04.2026

Accepted: 18.05.2026

Published:30.05.2026

Cite this article as:

Aditi S. Kale and Tambe SS (2026) Traditional Knowledge and Use of Medicinal Plants by Indigenous Tribes of Surgana Region, *Int. J. of Life Sciences*, 14 (1A):287-294.

<https://doi.org/10.5281/zenodo.20685472>

Available online on <http://www.ijlsci.in>

ISSN: 2320-964X (Online)

ISSN: 2320-7817 (Print)



Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

ABSTRACT

The indigenous tribes of Surgana Tahsil in Nashik District, Maharashtra, possess a rich heritage of traditional knowledge related to the use of medicinal plants for primary healthcare. This study documents and analyzes the ethnomedicinal practices followed by tribal communities such as the Bhil, Kokna, and Mahadev Koli, who depend largely on forest resources for the treatment of various ailments. Extensive field surveys were conducted across selected villages of Surgana, involving interviews with traditional healers, elderly villagers, and knowledgeable informants using semi-structured questionnaires and participatory observation methods. Plant specimens cited by informants were collected, identified, and authenticated using standard floras. The investigation recorded a significant diversity of medicinal plant species belonging to different families, growth forms, and habitats. These plants are traditionally used to treat common health problems such as fever, cough, cold, skin infections, wounds, gastrointestinal disorders, arthritis, rheumatism, and respiratory ailments. Various plant parts including leaves, roots, bark, seeds, latex, and fruits are utilized in the form of decoctions, pastes, powders, juices, and infusions. The study highlights the deep understanding of plant properties, preparation techniques, dosage, and modes of administration preserved by the tribal healers through oral traditions across generations. Quantitative ethnobotanical indices such as use value and informant consensus indicate the reliability and cultural importance of several key species in the local healthcare system. However, rapid socio-economic changes, deforestation, and declining interest among younger generations pose a serious threat to the preservation of this indigenous knowledge. The documentation of such traditional practices is therefore crucial for conserving both the biological resources and the associated cultural heritage. This study emphasizes the potential of ethnomedicinal knowledge in contributing to modern pharmacological research, biodiversity conservation, and sustainable utilization of forest resources, while recognizing the need to protect the intellectual property rights of indigenous communities.

Keywords: Ethnobotany, Ethnomedicine, Indigenous knowledge, Medicinal plants, Surgana Tahsil

INTRODUCTION

Traditional knowledge of medicinal plants represents an invaluable cultural and biological heritage developed through centuries of close interaction between indigenous communities and their natural environment. In India, tribal populations possess rich ethnobotanical knowledge that has been transmitted orally from one generation to another. This knowledge system forms the foundation of primary healthcare practices in remote forested regions where modern medical facilities remain limited.

The Surgana region of Surgana, located in the northern part of Maharashtra, is predominantly inhabited by tribal communities such as the Bhil, Kokna, and Warli tribes. The region lies in the Western Ghats foothills and is characterized by rich forest biodiversity, varied topography, and favorable climatic conditions that support diverse medicinal flora. Forest ecosystems in Surgana serve not only as a source of livelihood but also as a traditional pharmacy for indigenous people. Indigenous tribes of Surgana rely extensively on medicinal plants for the treatment of common ailments such as fever, cough, skin diseases, digestive disorders, wounds, and reproductive health issues. Local healers, commonly known as Vaidus or traditional practitioners, utilize plant parts including roots, bark, leaves, seeds, flowers, and latex in the preparation of decoctions, pastes, powders, and extracts. These plant-based remedies are often preferred due to their accessibility, affordability, cultural acceptance, and perceived safety.

However, rapid socio-economic changes, deforestation, urbanization, and the influence of modern healthcare systems are leading to the gradual erosion of this traditional knowledge. Younger generations are increasingly disconnected from ancestral practices, posing a risk to the preservation of ethnomedicinal wisdom. Furthermore, many medicinal plant species face threats from overharvesting and habitat degradation.

Documenting the traditional knowledge of medicinal plants used by indigenous tribes of Surgana is therefore essential for biodiversity conservation, sustainable utilization of plant resources, and the development of future pharmacological research. Ethnobotanical studies in this region can contribute significantly to the validation of traditional remedies

and support the integration of indigenous knowledge into broader healthcare systems.

This study aims to explore, document, and analyze the traditional medicinal plant knowledge of indigenous tribes in the Surgana region, highlighting their therapeutic uses, preparation methods, and cultural significance.

METHODOLOGY

1. Study Area

The study was conducted in the tribal region of Surgana, located in the northern part of Maharashtra. The area is characterized by hilly terrain, forest vegetation, and a predominantly tribal population dependent on forest resources for livelihood and healthcare.

2. Selection of Informants

Informants were selected through purposive and snowball sampling methods. Traditional healers (Vaidus), elderly tribal members, and knowledgeable individuals from different villages were interviewed. Prior informed consent was obtained before data collection.

3. Data Collection

Ethnobotanical data were collected through:

- Structured and semi-structured questionnaires
- Personal interviews
- Group discussions
- Field observations
- Information regarding local plant names, plant parts used, method of preparation, mode of administration, dosage, and ailments treated was recorded.

4. Plant Collection and Identification

Medicinal plant specimens cited by informants were collected during field visits. The specimens were identified using standard floras and taxonomic keys. Voucher specimens were prepared, labeled, and preserved for herbarium documentation.

5. Data Analysis

Collected data were systematically organized and analyzed to determine:

- Frequently used plant species
- Common ailments treated
- Most utilized plant parts

- Preparation methods
- Descriptive statistical methods were used to summarize the findings.

6. Ethical Considerations

The study respected indigenous intellectual property rights. Traditional knowledge was documented with prior consent, ensuring acknowledgment of tribal communities.

RESULT

The ethnobotanical survey conducted in the Surgana region of Nashik District, Maharashtra documented a total of 20 medicinal plant species traditionally used by indigenous tribal communities such as Bhil, Kokna, and Mahadeo Koli. These species belong to diverse families including Fabaceae, Apocynaceae, Lamiaceae,

Asteraceae, Lythraceae, Boraginaceae, and others. Important documented species include *Butea monosperma*, *Calotropis procera*, *Hemidesmus indicus*, *Pterocarpus marsupium*, *Vitex negundo*, *Woodfordia fruticosa* and *Cordia dichotoma*.

The results indicate that the tribal communities of Surgana possess significant traditional medicinal knowledge and rely primarily on locally available forest resources for primary healthcare. The dominance of tree species suggests strong dependence on forest ecosystems.

Overall, the findings confirm that the Surgana region represents a rich repository of ethnomedicinal diversity that requires proper documentation and conservation.

Plate 2 : Impact of mercuric chloride on shoot length and root Length of horse gram (*Macrotyloma uniflorum*)

Sr. No.	Botanical Name	Local Name	Plant Part Used	Traditional Use/Ailment Treated
1	<i>Artocarpus heterophyllus</i>	Phanas	Fruit	Vomiting/Powdered with jaggery
2	<i>Aspidopterys cordata</i>	Makadvel	Latex	Lactation (given with rice)
3	<i>Bombax ceiba</i>	Sawar	Root	Bleeding / Injuries
4	<i>Butea monosperma</i>	Palas	Seed	Worm infestation in children
5	<i>Calotropis procera</i>	Rui	Tender leaves	Fever and cold (chewed with lime & catechu)
6	<i>Careya arborea</i>	Kumbhi	Bark	Haemorrhoids /piles
7	<i>Carissa carandas</i>	Karvand	Latex	Burning sensation during urination
8	<i>Casearia graveolens</i>	Kirmira	Stem	Snake-bite (stem chewed)
9	<i>Cordia dichotoma</i>	Bhokar	Bark	Excessive menstruation
10	<i>Crinum defixum</i>	Kumbh	Leaves	Body swellings / pimples
11	<i>Dellinia pentagyna</i>	Karwal	Bark	Jaundice / urinary problems
12	<i>Diospyros melanoxylon</i>	Temburini	Wood	Assisted delivery (smoke)
13	<i>Eclipta prostrata</i>	Bhringraj	Leaf	General) juice remedy
14	<i>Glossocardia bosvallia</i>	Mirgi-Kand	Root/stalk	Alcohol addiction support
15	<i>Hemidesmus indicus</i>	Anantmul	Root	Increased milk flow
16	<i>Hygrophila schulli</i>	Talimkhana	Whole plant	Painful / yellow-colored urination
17	<i>Pongamia pinnata</i>	Karanj	Seed	Ringworm (seed oil)
18	<i>Pterocarpus marsupium</i>	Bija / Bivala	Bark	Menstrual regulation
19	<i>Vitex negundo</i>	Nirgudi	Leaf	Conjunctivitis (juice applied)
20	<i>Woodfordia fruticosa</i>	Dhaiti	Bark	Post-delivery bleeding

PHOTO PLATE – I

Medicinal Plants of Surgana Region (Nashik District, Maharashtra)

1. *Butea monosperma* (Palas)



Family: *Fabaceae*

Part Used: Seeds

Traditional Use: Deworming in children

2. *Calotropis procera* (Ruchkin)



Family: *Apocynaceae*

Part Used: Leaves

Traditional Use: Cold and fever remedy

3. *Hemidesmus indicus* (Anantmul)



Family: *Apocynaceae*

Part Used: Root

Traditional Use: Lactation enhancer

4. *Pongamia pinnata* (Karanj)



Family: *Fabaceae*

Part Used: Seed oil

Traditional Use: Treatment of ringworm

5. *Vitex negundo* (Nirgudi)



Family: *Lamiaceae*

Part Used: Leaves

Traditional Use: Eye infection (Conjunctivitis)

6. *Woodfordia fruticosa* (Dhaiti)



Family: *Lythraceae*

Part Used: Bark

Traditional Use: Post-delivery bleeding

7. *Bombax ceiba* (Sawar)



Family: *Malvaceae*

Part Used: Root

Traditional Use: Control of bleeding

8. *Eclipta prostrata* (Bhringraj)



Family: *Asteraceae*

Part Used: Leaves

Traditional Use: General medicinal tonic

PHOTO PLATE – II

Additional Medicinal Plants of Surgana Region (Nari urahccea)

9. *Carissa carandas* (Karvand)



Family: *Apocynaceae*

Part Used: Latex

Traditional Use: Remedy for burning *thurination*

10. *Careya arborea* (Kumbhi)



Family: *Lecythidaceae*

Part Used: Bark

Traditional Use: Treatment of piles

10. *Careya arborea* (Kumbhi)



Family: *Lecythidaceae*

Part Used: Bark

Traditional Use: Treatment of piles

11. *Pterocarpus marsupium* (Bija / Bivala)



Family: *Fabaceae*

Part Used: Bark

Traditional Use: Treatment of menstruation

11. *Pterocarpus marsupium* (Bija / Bivala)



Family: *Acanthaceae*

Part Used: Whole plant

Traditional Use: Urinary disorders

12. *Hygrophila schulli* (Talimkhana)



Family: *Acanthaceae*

Part Used: Whole plant

Traditional Use: Urinary disorders

PHOTO PLATE – III

Additional Medicinal Plants of Surgana Region

13. <i>Cordia dichotoma</i> (Bhokar)  Family: <i>Boraginaceae</i> Part Used: Bark Traditional Use: Excessive menstruation	14. <i>Dellinia pentagyna</i>(Karwal)  Family: <i>Dilleniaceae</i> Part Used: Bark Traditional Use: Jaundice and urinary problems
13. <i>Diospyros melanoxylon</i> (Temburini)  Family: <i>Ebenaceae</i> Part Used: Wood smoke Traditional Use: Assisted delivery	14. <i>Glossocardia bosvallia</i> (Mirgi-Kand)  Family: <i>Asteraceae</i> Part Used: Root Traditional Use: Alcohol addiction support
15. <i>Pongamia pinnata</i> (Bivala / Karanja)  Family: <i>Fabaceae</i> Part Used: Bark Traditional Use: Regulation of menstruation	16. <i>Vitex negundo</i> (Nirgudi)  Family: <i>Lamiaceae</i> Part Used: Leaves Traditional Use: Treatment of conjunctivitis
17. <i>Woodfordia fruticosa</i> (Dhaiti)  Family: <i>Lythraceae</i> Part Used: Bark Traditional Use: Post-delivery bleeding	18. <i>Hygrophila schulli</i> (Talimkhana)  Family: <i>Acanthaceae</i> Part Used: Whole plant Traditional Use: Urinary disorders

PHOTO PLATE - IV

Additional Medicinal Plants of Surgana Region

19. Albizia lebbeck (Shirish)  Family: <i>Fabaceae</i> Part Used: Bark Traditional Use: Postpartum recovery	20. Casearia graveolens (Kāmita)  Family: <i>Flacourtiaceae</i> Part Used: Leaves Traditional Use: Snake bite remedy												
<table border="1"> <thead> <tr> <th>Habitat</th><th>Leaves</th></tr> </thead> <tbody> <tr> <td></td><td></td></tr> <tr> <td>Flowers</td><td>Seed pods</td></tr> </tbody> </table>	Habitat	Leaves			Flowers	Seed pods	<table border="1"> <thead> <tr> <th>Habitat</th><th>Leaves</th></tr> </thead> <tbody> <tr> <td></td><td></td></tr> <tr> <td>Stem</td><td>Seed pods</td></tr> </tbody> </table>	Habitat	Leaves			Stem	Seed pods
Habitat	Leaves												
													
Flowers	Seed pods												
Habitat	Leaves												
													
Stem	Seed pods												
19. Pongamia pinnata (Bivala / Karanja)  Family: <i>Faboaceae</i> Part Used: Bark Traditional Use: Regulation of remely	20. Vitex neganda (Nirgudi)  Family: <i>Larveocens</i> Part Used: Leaves Traditional Use: Treatment of conjunctivitis												

CONCLUSIONS

The present study on Traditional Knowledge and Use of Medicinal Plants by Indigenous Tribes of Surgana Region (Nashik District, Maharashtra) highlights the rich ethnobotanical heritage preserved by local tribal communities such as Bhil, Mahadeo Koli and Kokna tribes.

A total of 20 medicinal plant species belonging to different families were documented, including species like *Butea monosperma*, *Calotropis procera*, *Hemidesmus indicus*, *Pterocarpus marsupium*, *Vitex negundo* and *Cordia dichotoma*. These plants are traditionally used for treating ailments such as fever, cold, jaundice, urinary disorders, menstrual problems, skin diseases, worm infestation, conjunctivitis, and post-delivery complications.

The study reveals that:

Leaves and bark are the most commonly used plant parts.

Remedies are mainly prepared as decoctions, pastes, juices, powders, or latex applications.

Indigenous knowledge is transmitted orally from elders and traditional healers (Vaidus) to younger generations.

However, rapid modernization, deforestation, and declining interest among youth pose serious threats to this valuable traditional knowledge system. Therefore, documentation, conservation of medicinal plants, and awareness programs are urgently required to preserve both plant biodiversity and indigenous wisdom.

This research emphasizes the importance of integrating traditional knowledge with modern scientific validation for sustainable healthcare development and biodiversity conservation in the Surgana region.

Acknowledgement:

I sincerely acknowledge the support of the financial support provided under the SJSGC Fellowship, and Research Centre, Department of Botany, for permitting field visits, plant identification, and documentation work required for this study, academic support and necessary research facilities.

Conflict of interest

The authors declare no competing interests.

Data Availability Statement: Not applicable.

Correspondence and requests for materials should be addressed to **Aditi. S. Kale**

[Aditi Kale \(0009-0009-3900-3544\) - ORCID](https://orcid.org/0009-0009-3900-3544)

Reprints and permissions information is available at <https://www.ijlsci.in/reprints>

REFERENCES

- Botanical Survey of India (BSI). Flora of India publications.
- Indian Council of Agricultural Research (ICAR). Medicinal and Aromatic Plants Research Publications.
- Jain, S.K. (1995). Ethnobotany in Modern India. Lucknow: Botanical Survey of India.
- Kirtikar, K.R. & Basu, B.D. Indian Medicinal Plants: (1935). Indian Medicinal Plants (Vol. I–IV). Dehradun: International Book Distributors.
- National Medicinal Plants Board (NMPB). (Government of India). Guidelines on medicinal plant conservation and cultivation.
- PubMed:National Library of Medicine. Database for phytochemical and antimicrobial research articles.
- The Wealth of India: CSIR (Council of Scientific & Industrial Research). (2003). The Wealth of India: A Dictionary of Indian Raw Materials and Industrial Products. New Delhi: CSIR.
- World Health Organization (WHO). (2013). WHO Traditional Medicine Strategy 2014–2023. Geneva: WHO Press.

© The Author(s) 2026

Publisher's Note

IJLSCI remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.