

Ethnomedicinal knowledge and antimicrobial applications of medicinal plants in Sehore district of central India

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ABSTRACT

Traditional plant-based healthcare systems remain an essential source of primary medicine for rural and tribal populations across central India. This study was conducted during 2024-2025 in the Sehore district of Madhya Pradesh to document the medicinal, socio-cultural and economic importance of local plant species utilized by the Bhil, Gond, Korku and Pardhi communities, while exploring the natural antimicrobial mechanisms that validate their usage. Through extensive field surveys, personal interviews and guided walks with traditional healers (Vaidyas) and village elders, key species such as *Azadirachta indica* (neem), *Ocimum* spp (Tulsi), *Phyllanthus emblica* (amla) and *Aegle marmelos* (Bael) were catalogued. These plants are heavily relied upon to manage skin infections, digestive disorders, fevers and respiratory illnesses. Scientifically, their therapeutic efficacy is driven by multi-targeted mechanisms including microbial cell membrane disruption, viral replication inhibition and immune modulation. Furthermore, local cultural practices, religious rituals and traditional clan restrictions function as highly effective, community-led in situ conservation systems. Ultimately, these findings reveal that indigenous health practices, rural livelihoods and biodiversity conservation are deeply interconnected, demonstrating that documenting this traditional knowledge is crucial to prevent cultural erosion and provide a validated baseline for future pharmaceutical research.

Keywords: Ethnomedicinal knowledge; Sehore district; Tribal healthcare; Antimicrobial mechanisms; Biodiversity conservation; Traditional medicine

INTRODUCTION

Sehore district lies in the heart of Madhya Pradesh, nestled within the Bhopal commissioner's division. Geographically positioned in central India, the district is characterized by a mix of agricultural lands, scattered forest patches and seasonal water bodies that create a diverse mosaic of habitats. A review of the available ethnobotanical literature reveals that extensive research has been conducted across India, including several regions of Madhya Pradesh. Notable contributions to the documentation of traditional plant knowledge and indigenous healthcare practices have been made by various researchers (Panda et al 2017, Afroz et al 2020, Ashraf et al 2023, Joshi et al 2020, Tatiya and Anil 2025, Anand et al 2022). The region experiences a typical subtropical climate with distinct summer, winter and monsoon seasons, conditions that

support a rich diversity of plant and animal life. Historically, Sehore has been part of larger cultural and ecological narratives. It was once integral to the Bhopal estate and later became a separate district after the formation of Madhya Pradesh. Compared to other regions of the state, southern Madhya Pradesh has received comparatively less ethnobotanical attention, with significant contributions primarily documented by Anand et al (2022), Wylie and Merrell (2022) and Ashraf et al (2023). Earlier studies in Sehore have documented wild edible arboreal species, highlighting the region's potential as a repository of untapped biodiversity and traditional knowledge.

Despite the rich biological and cultural heritage of Sehore district, comprehensive documentation of ethnobotanical knowledge associated with local communities remains limited. Rapid socio-economic

changes, urbanization and changing lifestyles are leading to the gradual erosion of traditional knowledge systems that have been transmitted orally across generations. Therefore, the present study was undertaken to document plant species of medicinal, cultural, religious and economic importance used by local and tribal communities of Sehore district. The study also aimed to record indigenous knowledge related to plant utilization, conservation practices and traditional healthcare systems, thereby, contributing to the preservation of valuable ethnobotanical heritage and providing baseline information for future research and conservation initiatives.

METHODOLOGY

The present study was carried out during 2024-2025 in selected villages of Sehore district, Madhya Pradesh, with the objective of documenting traditional knowledge related to medicinal plants. Extensive field surveys were conducted throughout the study period and repeated visits were made to different villages to establish rapport with local communities and gather reliable information. Regular field visits were conducted throughout the study period in selected villages inhabited by the Bhil, Gond, Korku and Pardhi communities. Information on medicinal plants used for the treatment of various ailments was documented through consultations and interviews with experienced tribal elders, traditional healers and knowledgeable community members.

Data were collected through personal interviews and informal discussions with traditional healers, village elders and other knowledgeable community members who possessed rich experience in the use of medicinal plants. Particular attention was given to documenting indigenous healthcare practices that have been passed down through generations. During the surveys, medicinal plant species used for the treatment of various ailments were recorded and collected with the assistance of experienced traditional practitioners and local residents. The collected plant specimens were identified using standard taxonomic literature and authenticated botanical references. For each species, detailed information was recorded, including botanical name, local name, family, plant parts used, mode of preparation and traditional medicinal applications.

RESULTS and DISCUSSION

Mechanism of action: how medicinal plants fight microbes

Medicinal plants possess antimicrobial properties due to the presence of a wide range of bioactive compounds synthesized as part of their natural defence mechanisms. These phytochemicals may act individually or synergistically to inhibit the growth and survival of microorganisms. Their antimicrobial activity is mediated through multiple mechanisms, including disruption of microbial cell walls and membranes, inhibition of essential enzymes, interference with nucleic acid synthesis and suppression of metabolic processes. Through these diverse modes of action, plant-derived compounds can effectively inhibit microbial growth or cause microbial cell death.

Fighting bacteria: Many medicinal plants are rich sources of secondary metabolites that have evolved as natural defence compounds against invading pathogens. Among the most important of these are alkaloids, flavonoids and essential oils, which are responsible for many of the characteristic aromas, tastes and therapeutic properties of plants. These bioactive compounds exhibit antimicrobial activity through several mechanisms, including disruption of bacterial cell membranes, inhibition of essential enzymes required for microbial survival and interference with DNA replication. Through these actions, they either kill bacteria directly or inhibit their growth and multiplication.

Blocking viruses: Certain plant-derived bioactive compounds possess antiviral properties and can inhibit viral infections through multiple mechanisms. These compounds may prevent viruses from entering host cells or interfere with viral replication after infection has occurred. Several medicinal plants have demonstrated promising antiviral activity, particularly against respiratory viruses. For example, extracts of *Echinacea purpurea* and *Sambucus nigra* have been reported to reduce the severity and duration of respiratory infections such as the common cold and influenza, highlighting their potential therapeutic value in the management of viral diseases.

Disrupting fungi: Plants also synthesize a wide range of antifungal compounds, particularly polyphenols and terpenoids, which inhibit fungal growth by disrupting cell membranes and interfering with essential metabolic

processes. Notable examples include extracts of tea tree (*Melaleuca alternifolia*) and neem (*Azadirachta indica*), both of which have demonstrated significant antifungal activity against various pathogenic fungi responsible for skin infections and other fungal diseases.

Boosting immunity: Not all antimicrobial activities of plants result from direct inhibition of microorganisms. Many medicinal plants exert indirect protective effects by enhancing or modulating the host immune response. Through the stimulation of immune functions and regulation of inflammatory pathways, these plants improve the body's ability to resist and eliminate microbial infections.

A notable advantage of plant-derived antimicrobials is their multifaceted mode of action. Rather than targeting a single microbial process, they often employ multiple mechanisms simultaneously, including direct antimicrobial effects, disruption of pathogen survival strategies and enhancement of host defenses. This multi-targeted approach reduces the likelihood of resistance development and helps explain the long-standing effectiveness of traditional plant-based remedies, even in the face of increasing antimicrobial resistance among pathogenic microorganisms.

Some of the plants found in the area are described hereunder:

***Achyranthes aspera* (Latzeera; Amaranthaceae):** An erect annual herb with simple leaves and spike-like inflorescences. The seeds, leaves and whole plant are traditionally used for managing bleeding piles (haemorrhoids), acting as a mild laxative and providing anti-inflammatory benefits. Specifically, taking seed powder for one week is a traditional remedy to help stop anal haemorrhoidal bleeding. Excessive consumption may cause gastrointestinal discomfort in sensitive individuals. It should be used with caution during pregnancy.

***Adina cordifolia* (Roxb) Benth and Hook f (Rubiaceae):** A large deciduous tree whose leaves and bark are traditionally used for wound management. Leaf juice is applied topically to sores and ulcers to cleanse the wound, promote healing and help eliminate parasitic infestations. Excessive internal use is not recommended, as the bark contains bioactive alkaloids that may cause toxicity at high doses.

***Allium cepa* L (Onion/Piyaj; Liliaceae):** A bulb-forming biennial herb widely cultivated as a vegetable crop. The bulb juice is the primary part used in traditional medicine. Local communities traditionally mix fresh onion juice with honey and administer it as a supportive remedy for cholera, as well as various respiratory and digestive ailments. The preparation is valued for its antimicrobial, expectorant and mucolytic properties. Excessive use of raw onion juice may cause irritation of the gastrointestinal and oral mucosa. Some individuals may experience allergic contact dermatitis.

***Alstonia scholaris* (L) R Br (Chatwa/Saptaparna; Apocynaceae):** A large evergreen tree whose bark is extensively used in indigenous healthcare systems. Traditional healers prepare a bark decoction and administer it three times daily for approximately one week to manage malarial fever and dysentery. The medicinal value of the bark is attributed to bioactive alkaloids possessing antipyretic and antimalarial activities. Due to the high potency of these alkaloids, prolonged or excessive consumption may result in toxic effects. Internal use should only be undertaken under proper medical guidance.

***Amaranthus tricolor* L (Matabhaji; Amaranthaceae):** An annual leafy vegetable commonly cultivated and consumed across India. In traditional medicine, the roots and leaves are utilized; root decoctions are administered twice daily for about a week to alleviate sore throats and throat infections. The species is generally regarded as safe due to its widespread use as a food crop. However, care should be taken to avoid plant material contaminated by pesticides or pollutants.

***Argemone mexicana* L (Bharbhara; Papaveraceae):** An annual herb characterized by prickly seed capsules and yellow latex. The stem juice is traditionally applied externally to wounds to accelerate healing and prevent infection. Although the plant possesses recognized medicinal properties, it contains toxic alkaloids such as sanguinarine, making internal consumption highly hazardous. Topical applications should also be used cautiously, as skin irritation may occur in sensitive individuals.

***Aristolochia indica* L (Aristolochiaceae):** A perennial climbing herb whose roots have long been employed in traditional medicine. Root paste is commonly applied externally as a remedy for venomous

insect bites and stings. Despite its ethnomedicinal importance, the species contains aristolochic acids, compounds known for their severe nephrotoxic (kidney damaging) and carcinogenic effects. Consequently, internal use is strictly discouraged and even external applications must be approached with extreme caution.

***Barleria prionitis* L (Kantaphul; Acanthaceae):** A spiny shrub valued in folk medicine for its therapeutic properties. A paste prepared from its roots and leaves is traditionally applied to boils, abscesses and glandular swellings to facilitate drainage and promote healing. The plant is generally considered safe for external application; nevertheless, individuals should monitor for possible allergic skin reactions.

***Bauhinia variegata* L (Mohla; Caesalpinaceae):** A medium-sized deciduous tree recognized by its characteristic bilobed leaves and attractive flowers. Traditional practitioners use flower powder for managing haemorrhagic conditions and bark powder for treating various skin disorders. While topical applications are generally considered safe, internal consumption should be restricted to recommended traditional dosages to avoid potential adverse effects.

***Blumea lacera* (Burm f) DC (Kukrondha; Asteraceae):** An aromatic annual herb commonly found in disturbed habitats. The juice extracted from the entire plant is traditionally employed to treat bleeding piles and diarrhoea. Although widely used in folk medicine, information regarding its long-term safety remains limited; therefore, prolonged use is not recommended.

***Bombax ceiba* L (Semal; Bombacaceae):** A large deciduous tree known for its striking red flowers and cotton-like seed fibres. The resin, bark and flowers are utilized medicinally, with resin powder commonly administered three times daily for the treatment of diarrhoea. Due to variations in dosage and preparation methods, proper identification of plant material and careful administration are essential, particularly for children and pregnant women.

***Cassytha filiformis* L (Lauraceae):** A parasitic twining vine traditionally valued for hair care. The powdered stem is mixed with sesame oil and applied externally as a hair tonic to improve scalp health and promote hair growth. External application is generally considered safe; however, oral ingestion should be avoided unless guided by an experienced practitioner.

***Chlorophytum arundinaceum* Baker (Safed Musli; Liliaceae):** A perennial tuberous herb widely recognized as a rejuvenating medicinal plant. The tubers are boiled in milk and consumed twice daily as a traditional remedy for male sexual debility and as a general health tonic. The species is highly regarded as an adaptogenic herb. However, due to quality concerns and market adulteration in commercial preparations, it is essential to use only authenticated plant material.

***Hordeum vulgare* L (Barley/Jau; Poaceae):** An important cereal crop cultivated worldwide. Traditionally, roasted and powdered grains are prepared as a nutritious gruel for managing painful and atonic dyspepsia (indigestion), providing soothing digestive benefits. The grain is generally safe and highly nutritious. However, individuals with gluten intolerance or coeliac disease must strictly avoid its consumption.

***Laggera alata* (D Don) Sch Bip ex Oliv (Sanpbuti; Asteraceae):** An aromatic perennial herb used in traditional medicine. Powder prepared from the leaves and roots is administered three times daily for approximately one week as a folk remedy for snakebites. While such practices hold cultural significance, a snakebite is a critical medical emergency requiring immediate professional emergency medical treatment. Herbal remedies should only be considered supportive measures, never a replacement for anti-venom.

***Leucas aspera* (Willd) Link (Lamiaceae):** An erect aromatic herb widely distributed across rural landscapes. Flowers mixed with honey are traditionally administered to children suffering from coughs and colds, while the leaf juice is applied externally to treat skin eruptions and painful swellings. The plant is generally regarded as safe for short-term medicinal use, though individuals prone to allergies should exercise caution.

***Mitragyna parvifolia* (Roxb) Korth (Mundi; Rubiaceae):** A medium-sized tree whose bark and roots are used in traditional healthcare systems. Preparations derived from these parts are employed to treat fever and colicky pain, likely owing to their febrifuge (fever-reducing) and antispasmodic properties. Since the plant contains biologically active alkaloids, internal use must strictly follow traditional dosage recommendations under appropriate supervision.

***Pergularia daemia* (Forsk) Chiov (Asclepiadaceae):** A perennial twining climber commonly found in wastelands and field margins. Leaf juice is traditionally administered to control excessive bleeding and is regarded as a reliable haemostatic remedy in folk medicine. Individuals with existing bleeding disorders or those on anticoagulant (blood thinner) therapy must consult healthcare professionals before using this plant.

***Phragmites karka* (Retz) Trin ex Steud (Poaceae):** A tall perennial reed growing in wetlands and marshy habitats. Traditional healers prepare a root paste and apply it externally to fractured bones as a supportive treatment intended to promote healing. Bone fractures require proper clinical orthopaedic management. Herbal poultices should only be considered supplementary measures and not a substitute for professional splinting or casting.

***Polygonum glabrum* Willd (Polygonaceae):** A herbaceous species used in various traditional medicinal preparations. Extracts of the whole herb are administered three times daily for managing pneumonia, while the rootstock is employed to treat piles. As respiratory infections like pneumonia can quickly become life-threatening, appropriate medical evaluation and antibiotic treatment remain essential. Traditional remedies should serve only as adjunctive therapies.

***Ricinus communis* L (Arandi/Rendi; Euphorbiaceae):** A perennial shrub recognized for its large palmate leaves and medicinal significance. In folk medicine, a root paste is applied externally to manage eczema and other skin disorders. Although the roots are used therapeutically, the plant, particularly its seeds, contains the highly potent toxin ricin. Therefore, ingestion of seeds or unprocessed plant parts must be strictly avoided. Topical preparations should only be applied cautiously to clean, unbroken skin.

The ethnomedicinal, socio-cultural and economic importance of plant species used by tribal communities of Sehore district, Madhya Pradesh are discussed in Table 1.

The ethnobotanical assessment revealed that local communities possess rich traditional knowledge regarding the utilization and conservation of plant resources. Similar observations have been reported from various tribal and rural regions of India, where indigenous knowledge systems continue to play a vital

role in the sustainable use of biological resources (Savithramma et al 2017, Iqbal et al 2017, Prakash 2024). The documented species in the present study serve multiple functions, including healthcare, nutrition, religious practices, household needs and cultural ceremonies, indicating their integral role in the socio-ecological framework of the study area.

Medicinal use emerged as the most prominent category, with a majority of the recorded species being employed in the treatment of common ailments such as skin diseases, digestive disorders, fever, respiratory disorders and metabolic conditions. Species such as *Azadirachta indica*, *Ocimum* spp, *Asparagus racemosus*, *Zingiber officinale*, *Phyllanthus emblica* and *Aegle marmelos* continue to constitute important components of traditional healthcare systems. Similar ethnomedicinal applications of these species have been documented by Panda et al (2017), Joshi et al (2020), Vashistha and Chaubey (2021). The continued use of these plants by local communities highlights the enduring relevance of indigenous healthcare practices and the dependence of rural populations on locally available medicinal resources. Furthermore, the reported antimicrobial potential of several of these species supports their traditional therapeutic use and is consistent with the findings of Wylie and Merrell (2022), Ashraf et al (2023) and Malya et al (2024).

Religious and cultural values were found to play a significant role in biodiversity conservation. Several species, including neem (*Azadirachta indica*), Tulsi (*Ocimum tenuiflorum*), Bael (*Aegle marmelos*), amla (*Phyllanthus emblica*), mango (*Mangifera indica*) and Harsingar (*Nyctanthes arbor-tristis*) are revered and protected because of their sacred associations. Similar conservation practices based on traditional beliefs and cultural values have been reported among indigenous communities in different parts of India (Savithramma et al 2017, Iqbal et al 2017, Prakash 2024). In many instances, local people refrain from cutting or damaging these species, thereby, contributing to their long-term conservation. Such belief-based protection mechanisms represent effective forms of community-led in situ conservation that function without formal management interventions. Clan traditions, customary laws and sacred values further strengthen the protection of plant resources, demonstrating the close relationship between cultural heritage and biodiversity conservation.

Table 1. Ethnomedicinal, socio-cultural and economic importance of plant species used by tribal communities

Scientific name	Species	Local name	Use and importance	Present status
<i>Azadirachta indica</i> A Juss	-	Neem	Tree highly respected and worshipped by local people; leaves, bark and oil used to treat acne, eczema, psoriasis and other skin infections; twigs traditionally used as toothbrushes to prevent tooth decay and gum disease; leaf chewing believed to purify blood and detoxify the body; tree protected from harm due to its medicinal and cultural significance	Tree twigs sometimes used in holy baths during festivals
<i>Ocimum gratissimum</i> L	<i>O basilicum</i> <i>O canum</i> <i>O tenuiflorum</i>	Tulsi	Leaves used for medicine; plant used in the treatment of skin and eye diseases; plant worshipped and held in high cultural and religious esteem	Commonly used
<i>Butea monosperma</i> (Lam) Taub	<i>B superb</i>	Palash	Leaves used for making plates and bowls; twigs used in ceremonies and cultural practices; twigs and flowers used during Holi and Diwali festivals	Commonly used
<i>Asperagus racemosus</i> Willd	<i>A filicinus</i> , <i>A gracilis</i>	Shatawari	Roots used for medicinal purposes; plant grown as an ornamental species	Commonly used
<i>Hibiscus rosa-sinensis</i> L	<i>H cannabinus</i> , <i>H radiatus</i> , <i>H vitifolius</i>	Gudhal	Plant cultivated as an ornamental species; various parts used for medicinal purposes; flowers and other plant parts used in worship and religious ceremonies	Commonly used
<i>Sapindus laurifolia</i> Vahl	-	Ritha	Fruits used for washing hair and clothes	Commonly used
<i>Zingiber officinale</i> Roscoe	<i>Z capitatum</i> , <i>Z roseum</i>	Adrak	Rhizomes used for flavouring food and medicinal purpose	Good example of conservation and sustainable use of natural resources
<i>Balanites aegyptiaca</i> (L) Delile	-	Hina Bel	Seed powder used as Surma for the treatment of cataract; fruit pulp used to treat dacryocystitis (Nasoor); small quantities used in the treatment of pneumonia and tuberculosis; bark powder used as a galactagogue, for removal of intestinal worms and as an antidote; fruits used as a natural soap in tribal areas	Commonly used
<i>Aegle marmelos</i> (L) Correa	-	Belpatra	Plant highly respected and worshipped by local people; ripe fruits and leaves used for the treatment of constipation and diarrhoea; leaf juice used to relieve bloating and gas-related problems; leaf extract used for controlling blood sugar levels	Leaves used in religious rituals

Scientific name	Species	Local name	Use and importance	Present status
<i>Phyllanthus emblica</i> L	-	Amla	Plant highly respected and worshipped by local people; plant parts used to regulate blood sugar levels and improve insulin sensitivity; acts as a hepatoprotective agent and aids in liver detoxification	Particularly used during Navaratri, Diwali and Chhath Puja celebrations
<i>Momordica charantia</i> L	<i>M dioica</i>	Karela	Fruits consumed as a vegetable; roots used as a sedative during fever; tubers used in the treatment of bleeding piles	Commonly used
<i>Mangifera indica</i> L	-	Aam	Plant highly respected and worshipped by local people; unripe fruits used in the treatment of diarrhoea and dysentery; fruits, leaves and bark used to aid digestion and relieve constipation; fruits, bark and leaves incorporated in Ayurvedic preparations for the treatment of digestive disorders, respiratory ailments and skin diseases	Leaves commonly used in temple rituals, Pooja and wedding ceremonies
<i>Cucumis prophetarum</i> L	-	Kachariya	Possesses potent antioxidant, anti-inflammatory and anticancer activities, which support its traditional medicinal use	Commonly used
<i>Mucuna pruriens</i> L	<i>M nigricans</i>	Kevanch	Pods occasionally consumed as a vegetable and used for medicinal purposes	Commonly used
<i>Nelumbo nucifera</i> Gaertn	<i>N nouchali</i> , <i>N pubescens</i> , <i>N rubra</i>	Kamal	Peduncles, rhizomes and seeds consumed as food; petals used in indigenous medicinal preparations	Commonly used
<i>Nyctanthes arbour-tristis</i> L	-	Sirali	Plant highly respected and worshipped by members of the Sirali clan (Gotra); leaves used in the treatment of sciatica, rheumatic pain and high fever; tender branches used for making baskets and mats	Good example of conservation and sustainable use of natural resources
<i>Trichosanthes cucumerina</i> L	<i>T anguina</i> , <i>T bracteates</i> , <i>T cordata</i>	Jangali Chichinda	Roots and fruits used for medicinal purposes; fruits cooked and consumed as a vegetable; seeds considered medicinal and used in traditional remedies	Commonly used

The study also highlighted the socio-economic importance of plant resources. Species such as *Butea monosperma*, *Sapindus laurifolia*, *Nelumbo nucifera* and *Momordica charantia* provide food, natural detergents, household materials and products used in cultural and religious ceremonies. Similar multifunctional uses of plant resources have been reported by Iqbal et al (2017) and Prakash (2024) who emphasized the contribution of ethnobotanical resources to rural livelihoods and household economies.

The diverse utility of these species enhances their livelihood value and encourages sustainable resource management by local communities.

Overall, the findings demonstrate that indigenous knowledge, cultural beliefs and traditional resource-use practices are closely linked with biodiversity conservation. The continued protection and utilization of ethnobotanically important species not only support local healthcare and livelihoods but also

contribute significantly to the preservation of biological and cultural diversity. Similar conclusions have been drawn by Panda et al (2017), Ashraf et al (2023) and Prakash (2024) who highlighted the importance of integrating traditional knowledge systems into biodiversity conservation and sustainable resource management strategies. Therefore, recognizing and incorporating indigenous knowledge into conservation programmes can strengthen community participation, enhance biodiversity stewardship and promote the sustainable utilization of natural resources.

CONCLUSION

The findings of this study underscore the enduring relevance of ethnomedicinal practices among the tribal and rural communities of Sehore district, Madhya Pradesh. In an era marked by rapid modernization, local flora continues to serve as an indispensable repository for primary healthcare, nutritional security and livelihood support. The documented reliance of the Bhil, Gond, Korku and Pardhi communities on traditional remedies for common ailments highlights a deep-seated ecological wisdom that has successfully sustained these populations for generations.

Scientifically, the therapeutic efficacy of these plants is well-supported by their multifaceted antimicrobial properties. Rather than targeting a single microbial pathway, the bioactive compounds in these species act through diverse mechanisms, such as cellular disruption, enzyme inhibition and immune modulation. This multi-targeted nature explains the long-standing efficacy of traditional preparations and offers promising pathways for tackling modern challenges like antimicrobial resistance. Crucially, the study reveals that biodiversity conservation in this region is not merely a regulatory exercise but an intrinsic part of the local culture. The sacred status given to plants like neem, Tulsi, Bael and amla, along with strict clan-based restrictions, provides a powerful and cost-effective in situ conservation framework driven entirely by the community.

Ultimately, there is an urgent need to bridge the gap between traditional knowledge systems and modern science. Protecting this orally transmitted heritage through systematic documentation and active community participation is vital. Doing so will not only preserve a rich cultural legacy from extinction but will

also provide a reliable foundation for future pharmacological discovery and sustainable development policies in central India.

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