



"Studies on Ethnomedicinal Plants in Rural Areas of Karimnagar District, Telangana: A Review"

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Abstract

India possesses one of the richest traditions of herbal medicine, with a significant proportion of the rural population depending on medicinal plants for primary healthcare. The rural areas of Karimnagar district, Telangana, are endowed with diverse medicinal flora and indigenous knowledge preserved by local communities and traditional healers. However, rapid urbanisation, habitat degradation, and the declining interest of younger generations threaten the survival of this valuable traditional knowledge. The present review documents and summarises the ethnomedicinal importance of 25 medicinal plant species belonging to 18 families recorded from rural villages of Karimnagar district through field surveys, interviews with traditional healers, and available literature. The documented species include *Azadirachta indica*, *Ocimum sanctum*, *Aloe vera*, *Phyllanthus emblica*, *Curcuma longa*, *Withania somnifera*, *Terminalia chebula*, *Mentha arvensis*, *Catharanthus roseus*, *Eucalyptus globulus*, *Tinospora cordifolia*, *Andrographis paniculata*, *Aegle marmelos*, *Moringa oleifera*, *Syzygium cumini*, *Adhatoda vasica*, *Ricinus communis*, *Vitex negundo*, *Cassia fistula*, *Boerhavia diffusa*, *Achyranthes aspera*, *Centella asiatica*, *Calotropis gigantea*, *Tridax procumbens*, and *Leucas aspera*. Among the plant parts used, leaves constituted the highest proportion (40%), followed by roots (24%), whole plants (16%), fruits, rhizomes, and bark. The herbal preparations were commonly administered as decoctions, pastes, powders, juices, and infusions for treating fever, cough, skin infections, gastrointestinal disorders, diabetes, inflammation, wounds, and respiratory ailments. The review emphasizes the urgent need for documentation, conservation, and scientific validation of traditional medicinal knowledge to ensure its sustainable utilization. The findings provide valuable baseline information for future phytochemical, pharmacological, and conservation studies while promoting the preservation of indigenous ethnomedicinal heritage in Karimnagar district, Telangana.

Keywords: Ethnomedicinal plants, Traditional knowledge, Karimnagar district, Telangana, Medicinal flora, Rural healthcare, Biodiversity conservation, Indigenous medicine.

1. Introduction

Ethnomedicinal plants constitute an important component of traditional healthcare systems and have been used by indigenous communities for centuries to prevent and treat various diseases. Ethnomedicine represents the cumulative knowledge, beliefs, and practices developed by different cultures regarding the use of plants and other natural resources for maintaining human health. India, recognised as one of the world's **17 mega-biodiverse countries**, harbours nearly **45,000 plant species**, of which approximately **7,500–8,000 species** are reported to possess medicinal value. These medicinal plants form the backbone of traditional systems of medicine such as **Ayurveda, Siddha, Unani, Sowa-Rigpa, and Folk Medicine**, which continue to serve millions of people across the country (Jain, 1991; WHO, 2023).

The **World Health Organization (WHO)** estimates that nearly **80% of the population in developing countries** relies on traditional herbal medicine for primary healthcare. In India, medicinal plants are not only culturally significant but also economically important, contributing substantially to the pharmaceutical, nutraceutical, cosmetic, and herbal industries. The growing global demand for herbal medicines has further emphasized the need for systematic documentation, scientific validation, and conservation of medicinal plant resources (WHO, 2023; Ministry of AYUSH, 2023).

Ethnobotany, a multidisciplinary science introduced by **John W. Harshberger (1896)**, focuses on the relationship between people and plants. Ethnomedicinal studies specifically investigate how local communities utilize plants to treat diseases, preserve health, and maintain traditional healthcare practices. Such studies provide valuable information for identifying novel bioactive compounds, developing new pharmaceuticals, conserving biological diversity, and preserving indigenous knowledge systems (Cotton, 1996; Martin, 2010).

India possesses an extraordinarily rich heritage of indigenous medicinal knowledge preserved by tribal and rural communities. More than **700 tribal communities** inhabit different ecological regions of the country, each possessing unique knowledge regarding medicinal plants and their therapeutic applications. This knowledge has traditionally been transmitted orally from one generation to another. However, rapid urbanization, industrialization, habitat degradation, deforestation, changing lifestyles, migration, and the declining interest of younger generations are leading to the gradual erosion of this invaluable cultural heritage. Consequently, documentation of ethnomedicinal knowledge has become an urgent priority for biodiversity conservation and sustainable utilization of medicinal plant resources (Jain, 1991; Kala, 2005).

The state of **Telangana**, situated in the Deccan Plateau, possesses diverse agro-climatic conditions that support rich floral diversity. The state is home to numerous medicinal plant species distributed across dry deciduous forests, scrublands, agricultural fields, wetlands, and village ecosystems. Several tribal communities, including **Gonds, Lambadas (Banjaras), Chenchus, Kolams, Naikpods, Koyas, and Pardhans**, continue to rely on medicinal plants for treating common ailments such as fever, cough, skin diseases, digestive disorders, diabetes, wounds, snakebite, jaundice, and inflammatory conditions. Their traditional knowledge forms an important component of the state's ethnomedicinal heritage (Pullaiah, 2015; Reddy et al., 2010).

Karimnagar district, located in northern Telangana, is characterised by tropical climatic conditions, fertile agricultural lands, dry deciduous vegetation, and scattered forest patches. The district supports a rich diversity of medicinal plant species growing in natural habitats as well as cultivated landscapes. Rural communities and traditional healers possess considerable knowledge regarding the identification, collection, preparation, dosage, and therapeutic uses of medicinal plants. Herbal remedies prepared from leaves, roots, bark, fruits,

seeds, rhizomes, flowers, and whole plants continue to be used for the treatment of various human ailments. Despite their significance, comprehensive documentation of ethnomedicinal plants from the rural areas of Karimnagar district remains limited, and much of the traditional knowledge is at risk of disappearing due to modernization and changing socio-economic conditions.

Numerous ethnobotanical investigations have demonstrated that medicinal plants such as *Azadirachta indica*, *Ocimum tenuiflorum* (syn. *O. sanctum*), *Aloe vera*, *Curcuma longa*, *Withaniasomnifera*, *Tinospora cordifolia*, *Terminalia chebula*, *Centella asiatica*, and *Andrographis paniculata* possess significant antimicrobial, anti-inflammatory, antioxidant, antidiabetic, hepatoprotective, immunomodulatory, and wound-healing properties. These findings highlight the importance of integrating traditional knowledge with modern scientific research for the discovery of novel therapeutic agents (Fabricant & Farnsworth, 2001; Gurib-Fakim, 2006).

Ethnomedicinal surveys not only help preserve indigenous healthcare practices but also contribute to biodiversity conservation, sustainable harvesting of medicinal plants, cultivation of threatened species, and formulation of conservation policies. Documentation of traditional medicinal knowledge provides baseline information for pharmacological screening, phytochemical investigations, and evidence-based validation of herbal medicines. Such studies are therefore essential for safeguarding both biological and cultural diversity.

The present review compiles and analyzes the ethnomedicinal information on **25 medicinal plant species belonging to 18 families** recorded from rural areas of Karimnagar district, Telangana. The study emphasizes the medicinal uses, plant parts utilized, methods of preparation, therapeutic applications, and conservation status of these species. The findings are expected to serve as a valuable resource for researchers,

students, healthcare professionals, conservation biologists, and policymakers interested in medicinal plant research, traditional healthcare systems, and biodiversity conservation.

Objectives of the Study

The present study was undertaken with the following objectives:

1. To document the ethnomedicinal plant species used by rural communities and traditional healers in Karimnagar district, Telangana.
2. To record the local names, plant parts used, methods of preparation, and therapeutic applications of medicinal plants.
3. To evaluate the diversity and traditional significance of medicinal plant species used in primary healthcare.
4. To promote the conservation and sustainable utilization of ethnomedicinal plant resources.
5. To preserve indigenous traditional knowledge for future pharmacological, phytochemical, and biotechnological research.

2. Study area

Karimnagar district is situated in the northern part of the state of Telangana, India, between approximately **18°10'–18°55' North latitude** and **78°30'–79°35' East longitude**. The district is bounded by **Rajanna Sircilla** to the west, **Peddapalli** to the east, **Jagtial** to the north, and **Siddipet** district to the south. The region lies on the **Deccan Plateau** at an average elevation of about **250–300 meters above mean sea level**, characterised by undulating plains, low hillocks, and fertile agricultural lands.

The climate of Karimnagar district is **tropical semi-arid**, with three distinct seasons: summer, monsoon, and winter. Summers are generally hot, with temperatures ranging from **30°C to 45°C**, while winters are relatively mild, with temperatures between **15°C and 28°C**. The district receives an average annual rainfall of approximately **800–1,000 mm**, mainly from the **Southwest Monsoon (June–September)**. The

climatic conditions are favourable for the growth of a wide variety of medicinal and economically important plant species.

The district is traversed by the **Godavari River** and its tributaries, including the **Manair River**, which support agriculture and contribute to the region's rich floral diversity. The soils are predominantly **red sandy loam, black cotton soils, and alluvial soils**, providing suitable habitats for both cultivated and wild medicinal plants.

The natural vegetation of Karimnagar district is primarily composed of **tropical dry deciduous forests**, interspersed with scrub vegetation, grasslands, agricultural fields, village commons, and roadside plantations. Common tree species include *Azadirachta indica*, *Tectona grandis*, *Terminalia arjuna*, *Syzygiumcumini*, *Butea monosperma*, and *Acacia nilotica*. These habitats support numerous medicinal herbs, shrubs, climbers, and trees that are traditionally used by rural communities.

The district is inhabited by diverse rural populations, including tribal communities such as the **Lambada (Banjara)** and **Gond**, along with other indigenous and farming communities. These groups possess extensive traditional knowledge of medicinal plants, which has been transmitted orally from generation to generation. Local healers, commonly known as **Vaidyas** or traditional herbal practitioners, utilize locally available plant species to prepare herbal remedies for treating ailments such as fever, cough, skin diseases, digestive disorders, diabetes, wounds, jaundice, snakebite, and inflammatory conditions.

Agriculture is the primary occupation of the people, and medicinal plants are commonly found in agricultural fields, home gardens, forest margins, wastelands, and along riverbanks. Many households cultivate medicinal plants such as *Ocimum tenuiflorum* (Tulsi), *Aloe vera*, *Moringa oleifera*, and *Curcuma longa* for domestic healthcare. However, increasing urbanization, expansion of agriculture, indiscriminate harvesting, deforestation, and changing lifestyles

have resulted in the gradual depletion of natural medicinal plant populations and the erosion of valuable traditional knowledge.

The rich floristic diversity, favorable ecological conditions, and strong indigenous knowledge systems make **Karimnagar district** an important region for ethnobotanical and ethnomedicinal investigations. Therefore, documenting the medicinal plants used by local communities is essential for preserving traditional healthcare practices, promoting biodiversity conservation, and providing a scientific foundation for future phytochemical and pharmacological research.

3. Materials and Methods

3.1 Study Period

The present ethnomedicinal survey was conducted during **January and February 2026** in selected rural areas of **Karimnagar District, Telangana, India**. The survey was undertaken to document the traditional knowledge of medicinal plants used by local communities to treat various human ailments.

3.2 Field Survey

Extensive field visits were conducted in five villages in Karimnagar district, representing diverse ecological and socio-cultural backgrounds. The survey was conducted under the guidance and supervision of **Prof. T. Srinivas, M.Sc., Ph.D., Head, Department of Botany, SRR Government Degree and PG College (Autonomous), Karimnagar**. The fieldwork was actively carried out by Shivani Pilli along with the participation of **ten (10) Postgraduate (M.Sc. Botany) students**, who assisted in plant collection, interviews, specimen documentation, photography, and data recording.

3.3 Collection of Ethnomedicinal Information

Ethnomedicinal information was collected through **field observations, personal interviews, semi-structured questionnaires, and informal**

discussions with 15 knowledgeable informants, including traditional healers (Vaidyas), elderly villagers, herbal practitioners, and experienced farmers. Information regarding the **local names of plants, plant parts used, methods of preparation, dosage, mode of administration, and therapeutic uses** was carefully recorded. Whenever possible, the information provided by one informant was verified with other respondents to ensure the reliability and authenticity of the recorded data.

3.4 Plant Collection and Identification

Medicinal plant specimens cited by the informants were collected from their natural habitats, agricultural fields, home gardens, village surroundings, and nearby forest areas. Standard methods of herbarium preparation were followed for specimen collection, pressing, drying, mounting, and labeling. Botanical identification of the collected specimens was carried out using standard taxonomic literature, including **Flora of Telangana, Flora of the Presidency of Madras**, and other authenticated floras. The scientific names were further verified using recognised botanical databases wherever necessary. Voucher specimens were deposited in the **Herbarium of the Department of Botany, SRR Government Degree and PG College (Autonomous), Karimnagar**, for future reference.

3.5 Documentation

Digital photographs of medicinal plants, field surveys, traditional healers, plant collection sites, and specimen processing were taken during the field visits. Detailed field notes were maintained, including habitat characteristics, abundance, phenological observations, local uses, and geographical locations of the documented plant species. The collected information was systematically organised for further analysis.

3.6 Data Analysis

The documented ethnomedicinal information was compiled and classified based on botanical family, scientific name, local name, habit, plant

parts used, method of preparation, and medicinal applications. The frequency of plant parts used and the distribution of species among different plant families were analysed using simple descriptive statistics and presented in tabular form.

3.7 Ethical Considerations

Prior informed consent was obtained from all the informants before conducting interviews and documenting their traditional knowledge. The objectives of the study were clearly explained to the participants, and the information was collected voluntarily. The study followed the ethical principles recommended by the **International Society of Ethnobiology (ISE) Code of Ethics**, ensuring respect for indigenous knowledge, cultural traditions, confidentiality, and the intellectual property rights of the local communities. The documented information is intended solely for academic, educational, conservation, and research purposes.

4. Results and Discussion

The present ethnomedicinal survey conducted in five rural villages of **Karimnagar District, Telangana**, during **January–February 2026** documented **25 medicinal plant species belonging to 18 botanical families**. These plant species are traditionally used by local villagers, tribal communities, and traditional healers (Vaidyas) for the treatment of various human ailments. The information was gathered through interviews with **15 experienced informants**, including elderly villagers and herbal practitioners.

Among the documented families, **Fabaceae** was the dominant family represented by **four species**, followed by **Lamiaceae (2 species)**, **Combretaceae (2 species)**, **Phyllanthaceae (2 species)**, and **Apocynaceae (2 species)**, while the remaining families were represented by one species each. The predominance of Fabaceae indicates its ecological abundance and medicinal importance in the study area.

Analysis of plant parts used revealed that **leaves were the most frequently utilized plant part (40%)**, followed by **roots (24%)**, **whole plants (16%)**, **fruits (12%)**, **rhizomes (4%)**, and **bark/latex/seeds (4%)**. Leaves are preferred because they are easily available throughout the year, rich in secondary metabolites, and can be harvested without destroying the plant.

Traditional herbal formulations were mainly prepared as **decoctions, fresh juice, paste, powder, infusion, and poultice**. Most remedies were administered orally, while topical applications were commonly used for skin diseases, wounds, burns, and inflammatory disorders.

The documented medicinal plants were primarily used for treating **fever, cough, cold, diabetes, digestive disorders, skin diseases, wounds, inflammation, jaundice, hypertension, respiratory ailments, urinary disorders, rheumatism, and general weakness**. Similar ethnomedicinal practices have been reported from other districts of Telangana, indicating the widespread use of indigenous medicinal knowledge in rural healthcare (Reddy et al., 2010; Pullaiah, 2015).

The study also revealed that traditional knowledge is predominantly transmitted orally from one generation to another. However, modernisation, migration of rural youth, habitat degradation, and indiscriminate harvesting of medicinal plants are causing a rapid decline in this valuable indigenous knowledge. Therefore, systematic documentation, conservation, cultivation, and scientific validation of medicinal plants are urgently needed.

4.1 Diagnostic (Identification) Keys Used During the Survey

Plant identification was carried out using standard taxonomic characters based on **habit, leaf arrangement, stem morphology, inflorescence, floral characters, fruit type, seed morphology, and habitat**. Identification was confirmed using regional floras and herbarium specimens.

The following standard taxonomic references were used:

1. Pullaiah, T. (2015). *Flora of Telangana*. Regency Publications, New Delhi.
2. Gamble, J.S. & Fischer, C.E.C. (1935). *Flora of the Presidency of Madras*. Botanical Survey of India.
3. Singh, N.P., Vohra, J.N., Hajra, P.K., & Singh, D.K. (2000). *Flora of India*. Botanical Survey of India.
4. Botanical Survey of India (BSI) herbarium keys.
5. POWO (Plants of the World Online, Royal Botanic Gardens, Kew) for nomenclature verification.

4.2 Threats to Ethnomedicinal Plant Resources

The present field investigation revealed that the ethnomedicinal wealth of Karimnagar district is under increasing pressure due to both anthropogenic and environmental factors. During interactions with traditional healers and local villagers, several concerns regarding the declining availability of medicinal plants and the erosion of indigenous knowledge were identified.

The major threats observed during the study include:

1. Overexploitation of medicinal plants:

Excessive and indiscriminate collection of wild medicinal plants for commercial and domestic purposes has reduced the natural populations of several valuable species.

2. Habitat degradation and land-use changes:

Expansion of agriculture, urbanization, road construction, industrial development, and deforestation have resulted in the destruction and fragmentation of natural habitats supporting medicinal plant diversity.

3. Loss of traditional knowledge: Indigenous ethnomedicinal knowledge is primarily transmitted orally from one generation to another. However, younger generations are increasingly adopting modern lifestyles and showing limited interest in learning traditional herbal practices,

leading to a gradual loss of this invaluable cultural heritage.

4. Lack of systematic documentation: Much of the traditional medicinal knowledge remains undocumented, making it vulnerable to permanent loss with the passing of experienced traditional healers.

5. Climate change: Variations in rainfall patterns, increasing temperatures, and prolonged droughts adversely affect the growth, distribution, and regeneration of medicinal plant species.

6. Unsustainable harvesting practices: Uprooting of whole plants and indiscriminate harvesting of roots, bark, and rhizomes reduce the natural regeneration potential of several medicinal species.

4.3 Conservation Measures

Based on the findings of the present study, the following conservation strategies are recommended for the sustainable utilisation and preservation of ethnomedicinal plant resources in Karimnagar district:

1. Promote **cultivation of important medicinal plants** in home gardens, school herbal gardens, community lands, and farmers' fields.
2. Systematically **document and digitally preserve indigenous ethnomedicinal knowledge** through scientific surveys and ethnobotanical databases.
3. Organize **awareness programmes, workshops, and training camps** for students, farmers, tribal communities, and the general public regarding the importance of medicinal plant conservation.
4. Establish **Medicinal Plant Conservation Gardens** in educational institutions, particularly in colleges and universities, for teaching, research, and ex-situ conservation.
5. Encourage **scientific validation** of traditional herbal remedies through phytochemical, pharmacological, and clinical studies.
6. Promote **sustainable harvesting practices** and community participation in biodiversity conservation.
7. Strengthen collaboration among educational institutions, forest departments, AYUSH

organizations, Botanical Survey of India, and local communities for long-term conservation programmes.

The present investigation clearly demonstrates that immediate conservation of both **medicinal plant diversity and indigenous traditional knowledge** is essential for sustainable healthcare, biodiversity conservation, and future drug discovery.

5. Discussion

The present ethnomedicinal survey documented **25 medicinal plant species belonging to 18 families** from selected rural areas of Karimnagar district, Telangana. The findings demonstrate that traditional plant-based healthcare remains an integral part of rural life, particularly among elderly villagers, traditional healers (Vaidyas), and tribal communities such as the Lambadas and Gonds. These communities continue to rely on locally available medicinal plants because they are affordable, easily accessible, culturally accepted, and have been used successfully for generations.

The dominance of **Fabaceae** among the recorded families agrees with earlier ethnobotanical studies conducted in Telangana and other parts of India (Jain, 1991; Reddy et al., 2010). Members of Fabaceae are widely distributed in tropical ecosystems and are known to contain diverse phytochemicals including flavonoids, alkaloids, tannins, glycosides, and phenolic compounds that exhibit antimicrobial, antioxidant, anti-inflammatory, and antidiabetic activities.

The present study revealed that **leaves constituted the most frequently used plant part (40%)**, followed by roots (24%), whole plants (16%), fruits (12%), and rhizomes (4%). Similar observations have been reported by Cotton (1996), Kala (2005), and Martin (2010), who suggested that leaves are preferred because they are readily available, regenerate quickly, and their collection generally does not destroy the plant. Sustainable harvesting of leaves also contributes

to biodiversity conservation compared to destructive harvesting of roots or bark.

The majority of herbal medicines documented in this survey were prepared as **decoctions, pastes, powders, fresh juices, and infusions**. These traditional formulations are simple to prepare, inexpensive, and are based on empirical knowledge accumulated over many generations. Oral administration was the predominant mode of treatment for fever, cough, diabetes, digestive disorders, and general weakness, whereas topical application was commonly employed for skin diseases, wounds, burns, and inflammatory conditions.

Among the documented species, *Azadirachta indica* (Neem) was one of the most versatile medicinal plants. Its leaves and bark are widely used as antiseptic, antimicrobial, antifungal, and anti-inflammatory agents for treating skin infections, wounds, fever, and dental problems. Numerous phytochemical studies have reported the presence of azadirachtin, nimbidin, nimbolide, and quercetin, which contribute to its medicinal efficacy (Subapriya & Nagini, 2005).

Ocimum tenuiflorum (Tulsi) occupies a special place in Indian traditional medicine and is widely used for respiratory disorders, fever, cough, and common cold. It possesses significant antioxidant, antimicrobial, immunomodulatory, and adaptogenic properties owing to bioactive compounds such as eugenol, ursolic acid, and rosmarinic acid (Prakash & Gupta, 2005).

Aloe vera is extensively used for wound healing, burns, skin disorders, and gastrointestinal ailments. The gel contains acemannan, anthraquinones, vitamins, and polysaccharides that exhibit anti-inflammatory, antimicrobial, and tissue regenerative activities (Hamman, 2008).

The rhizome of *Curcuma longa* (Turmeric) is one of the most extensively researched medicinal plants worldwide. Curcumin, the principal bioactive compound, exhibits remarkable antioxidant, antimicrobial, anti-inflammatory,

hepatoprotective, anticancer, and immunomodulatory properties. Traditional healers commonly use turmeric paste for wounds, skin infections, and inflammatory disorders (Aggarwal & Harikumar, 2009).

Withaniasomnifera (Ashwagandha) has long been recognized as an important adaptogenic medicinal plant in Ayurveda. The roots contain withanolides that possess anti-stress, neuroprotective, immunomodulatory, and anti-inflammatory activities. The plant is widely prescribed for fatigue, weakness, anxiety, and age-related disorders (Mishra et al., 2000).

Phyllanthus emblica (Amla) is valued for its exceptionally high vitamin C content and abundance of polyphenols. It is traditionally used as a rejuvenating tonic, antioxidant, digestive aid, and immune enhancer. Modern pharmacological studies have confirmed its antioxidant, hepatoprotective, antidiabetic, and cardioprotective activities (Baliga & Dsouza, 2011).

The climber *Tinospora cordifolia* (Guduchi/Tippa Teega) is another important medicinal plant recorded during the survey. It is traditionally used to treat fever, diabetes, liver disorders, and immune-related diseases. Scientific investigations have demonstrated its immunomodulatory, antioxidant, antipyretic, and hepatoprotective properties (Saha & Ghosh, 2012).

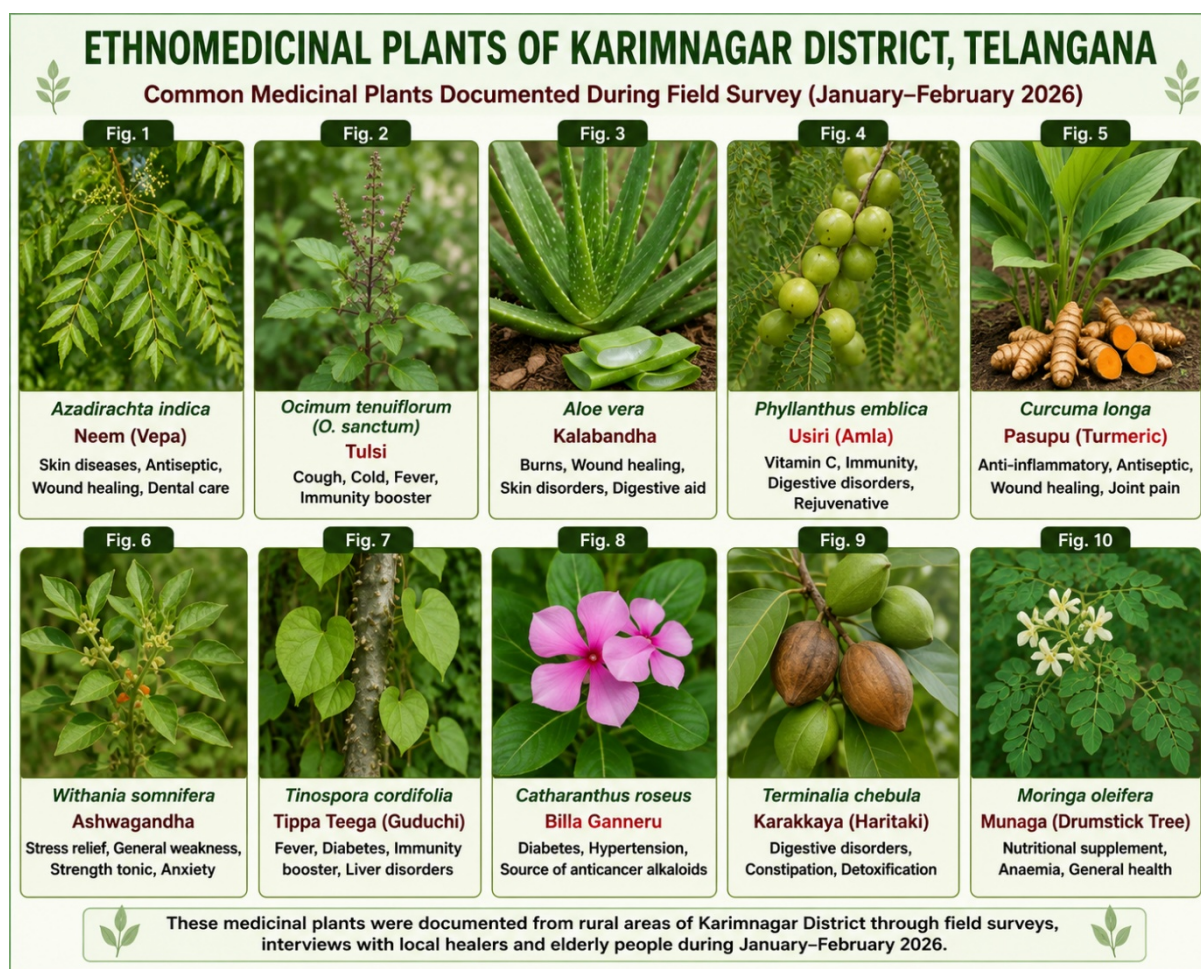
Catharanthus roseus is internationally recognized as a source of the anticancer alkaloids vincristine and vinblastine. Although local communities primarily use the plant for diabetes and hypertension, modern medicine has established its importance in the treatment of leukemia and lymphoma (Van Der Heijden et al., 2004).

Terminalia chebula, *Aegle marmelos*, *Adhatodavasica*, *Syzygiumcumini*, and *Moringa oleifera* were frequently cited by informants for gastrointestinal disorders, respiratory diseases, diabetes, nutritional deficiencies, and

inflammatory conditions. Their medicinal properties have been supported by several phytochemical and pharmacological studies.

The survey further demonstrated that the medicinal plants documented in Karimnagar are rich sources of **alkaloids, flavonoids, tannins, terpenoids, glycosides, phenolic compounds,**

saponins, essential oils, and steroids. These phytochemicals are responsible for a wide spectrum of biological activities, including antimicrobial, antioxidant, antidiabetic, anticancer, antiviral, anti-inflammatory, hepatoprotective, cardioprotective, nephroprotective, and immunomodulatory effects.



Despite their immense therapeutic value, medicinal plant resources are increasingly threatened by habitat destruction, urban expansion, indiscriminate harvesting, climate change, and the gradual disappearance of indigenous knowledge. The present study therefore emphasises the urgent need for **scientific documentation, herbarium**

preservation, ex situ and in situ conservation, cultivation of medicinal plants, community participation, and pharmacological validation of traditional herbal remedies. Such efforts will help preserve both biological diversity and the invaluable ethnomedicinal heritage of Karimnagar district for future generations.

ETHNOMEDICINAL PLANTS OF KARIMNAGAR DISTRICT, TELANGANA (Contd...)				
Plants Documented During Field Survey (January–February 2026)				
 11 <i>Tinospora cordifolia</i> Menispermaceae Tippa Teega (Guduchi) Fever, Immunity booster, Diabetes, Liver disorders	 12 <i>Andrographis paniculata</i> Acanthaceae Nelavemu Fever, Cold, Liver disorders, Anti-inflammatory	 13 <i>Aegle marmelos</i> Rutaceae Maredu Diarrhoea, Dysentery, Digestive disorders	 14 <i>Moringa oleifera</i> Moringaceae Munaga Nutrition, Anaemia, General health	 15 <i>Syzygium cumini</i> Myrtaceae Neredu Diabetes, Diarrhoea, Digestive disorders
 16 <i>Adhatoda vasica</i> Acanthaceae Addasaram Cough, Asthma, Bronchitis, Expectorant	 17 <i>Ricinus communis</i> Euphorbiaceae Aamudam Constipation, Joint pain, Anti-inflammatory	 18 <i>Vitex negundo</i> Lamiaceae Vavili Joint pain, Headache, Anti-inflammatory	 19 <i>Cassia fistula</i> Fabaceae Rela Laxative, Constipation, Skin diseases	 20 <i>Boerhavia diffusa</i> Nyctaginaceae Punarnava Kidney disorders, Oedema, Liver disorders
 21 <i>Achyranthes aspera</i> Amaranthaceae Uttareni Wounds, Snake bite, Anti-inflammatory	 22 <i>Leucas aspera</i> Lamiaceae Thummi Cold, Cough, Fever, Insect bites	 23 <i>Calotropis gigantea</i> Apocynaceae Jilledu Joint pain, Skin diseases, Wound healing	 24 <i>Tridax procumbens</i> Asteraceae Gaddi Chamanthi Wound healing, Skin infections, Anti-inflammatory	 25 <i>Clitoria ternatea</i> Fabaceae Shankhapushpi Memory enhancer, Anxiety, Brain tonic
 These medicinal plants were documented from rural areas of Karimnagar District through field surveys, interviews with local healers and elderly people during January–February 2026. 				

6. Conclusion

The present ethnomedicinal survey, conducted in selected rural villages of Karimnagar District, Telangana, documented 25 medicinal plant species belonging to 18 botanical families, traditionally used by local communities and indigenous healers to treat a wide range of human ailments. The study revealed that **leaves** were the most frequently utilized plant part, followed by roots, fruits, rhizomes, and whole plants. Herbal preparations such as decoctions, pastes, powders, juices, and infusions continue to play a significant role in primary healthcare among rural populations.

The survey highlights the rich ethnomedicinal heritage of Karimnagar district and emphasises the importance of preserving indigenous knowledge passed down orally through generations. However, modernisation, habitat destruction, overexploitation of plant resources, and declining interest among younger generations pose serious threats to this valuable heritage.

During the field investigation, **25 voucher specimens** representing all documented medicinal plant species were scientifically identified, processed, mounted, labelled, and preserved as herbarium specimens following standard herbarium techniques. These authenticated specimens have been deposited in the **Herbarium of the Department of Botany, SRR Government Arts & Science College (Autonomous), Karimnagar**, where they serve as permanent reference materials for **teaching, practical training, taxonomic research, ethnobotanical studies, biodiversity documentation, and future scientific investigations.**

The herbarium collection also provides an excellent learning resource for **M.Sc. Botany students**, enabling them to acquire practical skills in plant collection, identification, herbarium preparation, botanical nomenclature, ethnobotanical documentation, and biodiversity conservation. The field survey significantly enhanced students' understanding of medicinal plant diversity, traditional healthcare systems, and scientific documentation methods.

Overall, the present study provides valuable baseline information for future ethnobotanical, phytochemical, pharmacological, conservation, and biodiversity research in Telangana. Collaborative efforts involving local communities, educational institutions, government agencies, and researchers are essential for safeguarding the ethnomedicinal wealth of the region for future generations.

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The authors are deeply indebted to the **traditional healers (Vaidyas), tribal elders, farmers, and**

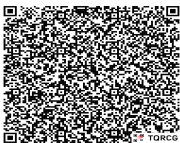
villagers of the surveyed villages in Karimnagar district for generously sharing their invaluable indigenous ethnomedicinal knowledge and extending their wholehearted cooperation during the field investigations.

Finally, the authors gratefully acknowledge the facilities provided by the **Department of Botany, SRR Government Arts & Science College (Autonomous), Karimnagar**, particularly the **Botany Herbarium**, where the **25 authenticated voucher specimens** documented during this investigation have been permanently preserved for future teaching, research, reference, and biodiversity conservation purposes. Their support has greatly strengthened the academic and scientific value of the present study.

References

- Aggarwal, B. B., & Harikumar, K. B. (2009). Potential therapeutic effects of curcumin. *International Journal of Biochemistry & Cell Biology*, 41, 40–59.
- Baliga, M. S., & Dsouza, J. J. (2011). Amla (*Phyllanthus emblica*): A review. *Journal of Evidence-Based Complementary & Alternative Medicine*, 2011, 1–17.
- Botanical Survey of India (2022). *Flora of India*.
- Cotton, C. M. (1996). *Ethnobotany: Principles and Applications*. John Wiley & Sons.
- Fabricant, D. S., & Farnsworth, N. R. (2001). The value of plants used in traditional medicine for drug discovery. *Environmental Health Perspectives*, 109(Suppl. 1), 69–75.
- Gamble, J. S. (1935). *Flora of the Presidency of Madras*. Botanical Survey of India.
- Gurib-Fakim, A. (2006). Medicinal plants: Traditions of yesterday and drugs of tomorrow. *Molecular Aspects of Medicine*, 27, 1–93.
- Hamman, J. H. (2008). Composition and applications of Aloe vera. *Molecules*, 13, 1599–1616.
- Heinrich, M., Barnes, J., Gibbons, S., & Williamson, E. M. (2018). *Fundamentals of Pharmacognosy and Phytotherapy* (3rd ed.). Elsevier.

- International Society of Ethnobiology (2006). Code of Ethics.
- Jain, S. K. (1991). Dictionary of Indian Folk Medicine and Ethnobotany. Deep Publications.
- Kala, C. P. (2005). Current status of medicinal plants and traditional knowledge in India. Ethnobotany Research & Applications, 3, 23–37.
- Martin, G. J. (2010). Ethnobotany: A Methods Manual. Earthscan.
- Ministry of AYUSH. (2023). Medicinal Plants and Traditional Medicine in India. Government of India.
- Mishra, L. C., Singh, B. B., & Dagenais, S. (2000). Scientific basis for the therapeutic use of *Withania somnifera*. Alternative Medicine Review, 5, 334–346.
- Prakash, P., & Gupta, N. (2005). Therapeutic uses of *Ocimum sanctum*. Indian Journal of Physiology and Pharmacology, 49, 125–131.
- Pullaiah, T. (2015). Flora of Telangana. Regency Publications.
- Rao, R. R., & Henry, A. N. (1996). The Ethnobotany of Eastern Ghats in Andhra Pradesh.
- Reddy, K. N., Reddy, C. S., & Trimurthulu, G. (2010). Ethnobotanical survey of medicinal plants in Andhra Pradesh. Indian Journal of Traditional Knowledge, 9(1), 158–162.
- Reddy, K. N., Reddy, C. S., & Trimurthulu, G. (2010). Ethnobotanical survey of medicinal plants in Andhra Pradesh. Indian Journal of Traditional Knowledge, 9(1), 158–162.
- Raha, S., & Ghosh, S. (2012). *Tinospora cordifolia*: One plant, many roles. Ancient Science of Life, 31, 151–159.
- Schippmann, U., Leaman, D. J., & Cunningham, A. B. (2006). A Comparison of Cultivation and Wild Collection of Medicinal and Aromatic Plants under Sustainability Aspects. Biodiversity and the Ecosystem Approach.
- Schippmann, U., Leaman, D.J., & Cunningham, A.B. (2006). Sustainability of medicinal plants.
- Subapriya, R., & Nagini, S. (2005). Medicinal properties of neem (*Azadirachta indica*). Current Medicinal Chemistry – Anti-Cancer Agents, 5, 149–156.
- Van Der Heijden, R., et al. (2004). The catharanthus alkaloids: Pharmacognosy and biotechnology. Current Medicinal Chemistry, 11, 607–628.
- World Health Organisation (WHO). (2023). WHO Traditional Medicine Strategy 2025–2034. Geneva: WHO.
- World Health Organization (WHO). (2023). WHO Traditional Medicine Strategy 2025–2034. Geneva: WHO.

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