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Ethnomedicinal Plant Diversity of Rajasthan: A Review of Distribution Patterns and Traditional Healthcare Practices

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ABSTRACT: Rajasthan, the largest state of India, possesses remarkable ecological heterogeneity ranging from the arid Thar Desert to the forested tracts of the Aravalli and Vindhyan ranges. Despite harsh climatic conditions, the state supports a rich diversity of medicinal plants that form the backbone of traditional healthcare systems among rural and tribal communities such as the Saharia, Bhil, Meena, and Garasia. The present review synthesizes available literature on the diversity, distribution, traditional applications, and conservation status of ethnomedicinal plants in Rajasthan.

KEYWORDS: Ethnomedicinal plants; Rajasthan; Traditional knowledge; Medicinal plant diversity; Conservation.

I. INTRODUCTION

Rajasthan, India's largest state by area, exhibits a distinctive ecological landscape marked by intense weather conditions, varied topography, and numerous types of flora. The state has dry, semi-arid, sub-humid, and humid zones, extending from the Thar Desert in the west to the forested areas of the Aravalli and Vindhyan ranges in the south and southeast. Despite being commonly regarded as a desert state, Rajasthan sustains an impressive variety of plant resources that are adapted to extreme environmental circumstances, including minimal precipitation, elevated temperatures, and deficient soil fertility. The flora of Rajasthan comprises thorn woods, dry deciduous forests, scrublands, grasslands, and riparian vegetation. The southeastern districts, such as Baran, Kota, and Jhalawar, have comparatively greater precipitation and sustain denser forest cover than western Rajasthan. These places are recognized for their varied flora, encompassing many botanicals of therapeutic significance.

Plant resources in Rajasthan have historically been employed by local communities for sustenance, medicinal purposes, livestock feed, fuel, and cultural traditions. Ethnomedicinal knowledge pertains to the comprehension of medicinal plants and their applications cultivated by indigenous and local cultures. This understanding derives from extensive engagement with the natural environment and embodies a comprehensive perspective on health and illness. Ethnomedicinal practices frequently prioritize the utilization of entire plants or certain plant components, including roots, leaves, bark, seeds, and flowers, while taking into account variables such as dose, preparation methods, and seasonal accessibility. Tribal groups including the Saharia, Bhil, Meena, and Garasia exhibit profound understanding of indigenous flora and their medicinal attributes. This indigenous knowledge has empowered communities to endure in adverse conditions and address health concerns with locally accessible resources. Medicinal plants have constituted the cornerstone of healthcare systems throughout civilizations and persist in their essential contribution to human health. In India, phyto-therapeutics are extensively utilized in traditional systems like Ayurveda, Siddha, Unani, and folk medicine.

A significant segment of the population, especially in rural and tribal regions, continues to depend on medicinal plants for the treatment of prevalent maladies like fever, cough, digestive disorders, skin diseases, wounds, and infections. Medicinal plants encompass a diverse array of bioactive compounds, such as alkaloids, glycosides, flavonoids, tannins, terpenoids, and phenolic compounds, which confer their therapeutic properties. These herbs are utilized in many forms, including decoctions, powders, pastes, infusions, and extracts, contingent upon the specific condition and customary procedures. Nonetheless, plant resources are progressively endangered by human activities including deforestation, mining, overgrazing, agricultural development, and unauthorized collection of medicinal herbs.

The preservation of medicinal plants has become a significant issue at both national and international levels. Medicinal plants are becoming endangered due to overharvesting, habitat damage, climate change, and inadequate sustainable management techniques. Numerous species are harvested indiscriminately from their natural habitats without regard for their regenerative capacity, resulting in population decline and diminished genetic diversity. The delicate ecosystems and sparse forestation in Rajasthan render medicinal plants especially susceptible. The unsustainable harvesting of roots, bark, and entire plants for commercial use exacerbates the issue. Moreover, insufficient awareness regarding conservation methods and the lack of effective regulatory frameworks exacerbate the decline of medicinal plant resources. The conservation of medicinal plants is crucial for maintaining biodiversity, protecting traditional healthcare systems, and ensuring the accessibility of plant-based medicines for future generations. Therefore, the aim of this paper is to review the diversity, distribution, traditional uses, and conservation status of ethnomedicinal plants in Rajasthan, and to highlight the urgent need for sustainable management and protection strategies to preserve these valuable biological and cultural resources.

II. REVIEW OF LITERATURE

Katewa et al. (2001) conducted a comprehensive evaluation of 24 ethnomedicinal grasses in Rajasthan. Forest inhabitants employ ethnomedicinal grasses to address many diseases in their daily existence. While numerous grasses possess significant medical properties, others are regarded as unpalatable. The need of promoting the distinctiveness and value of grasses, as well as the imperative to establish a repository of indigenous knowledge possessed by tribes, was emphasized.

Swarnkar and Katewa (2007) documented 42 tuberous plants of ethnobotanical significance from the Aravalli Hills of Rajasthan. The principal tribes residing in the research area are the Bhil, Meena, Garasia, Damor, and Kathodi. These tribes employ tuberous plants for several functions in their daily existence. The indigenous population ascribes their health, vigor, and life to these wild tuberous plants. Environmental alterations and insufficient understanding of tuberous plant conservation have made certain species rare, fragile, and endangered. The extinction of several plant species is certain and unavoidable without enough attention. Consequently, the acknowledgment and application of these tuberous plants, together with the creation of a database that encompasses the indigenous knowledge possessed by the tribes, is emphasized.

Katewa (2009) emphasized substantial ethnobotanical knowledge of the use of wild plants by tribal communities in Rajasthan for nutritional, medicinal, veterinary, and cultural applications. When examined scientifically, this traditional knowledge may provide significant advantages for humanity.

Meena and Meda (2009) performed a floristic assessment of ethnomedicinal plants in the tribal region of Rajasthan to ascertain the potential of these plant resources for contemporary therapeutic applications. The Aravalli hills of Rajasthan are home to various tribes, primarily the Meena, Bhil, Grasia, Damor, and Kathodia. These tribes employ the plants for several functions in their daily lives. The indigenous populations credit their health, energy, and survival to the use of these natural herbs. However, due to environmental changes and insufficient plant conservation efforts, many species have become rare, threatened, and endangered. This study aimed to provide a comprehensive inventory of plant species, detailing the utilized plant parts and the documented methods of administration for the efficient treatment of various ailments as practiced by the Meena population of Rajasthan.

Sharma and Khandelwal (2010) examined multiple weed species in Rajasthan. Weeds, sometimes regarded as undesirable flora, are employed by tribal and traditional communities in the state for medical and culinary purposes, among others. Certain weeds serve as insect repellents, dental cleansers, fiber sources, and materials for domestic items. This research discovered 33 plant species and their corresponding applications.

Singhadiya et al. (2016) examined 26 ethnomedicinal plant species from 17 families utilized as antipsoriatics by the indigenous population in Rajasthan. The research examined the different forms of psoriasis, including botanical nomenclature, regional terminology, familial classification, employed plant compounds, and their significance in psoriasis therapy.

Vijayvergia (2017) cataloged the conventional therapeutic uses of common medicinal plants in Rajasthan. A total of 18 plant species from 13 families are recorded, employed for various purposes. Comprehensive details for each plant, encompassing botanical nomenclature, taxonomic family, vernacular designation, and medicinal application, are supplied.

Kumari and Jain (2018) performed a botanical study of medicinal flora in the arid and semi-arid areas of the Harshnath Hills, Sikar District. The indigenous and tribal inhabitants of the region employ these plant species in their daily lives for several purposes. The data was gathered through dialogues with local traditional medicine practitioners. The survey identified 105 ethnobotanical plant species across 49 families in the study area. The plant species, their employed components, and the method of administration were methodically classified.

Maheshwari and Sharma (2019) emphasized the significance of ethnomedicinal herbs from various regions of Rajasthan. A comprehensive survey was conducted in four districts (Kota, Bindi, Jhalawar, and Baran) in Rajasthan, particularly in the Hadauti region, gathering data on medicinal practices through systematic interviews with local indigenous medicine practitioners, peasants, priests, and tribal populations. The plants were categorized using conventional monographs and flora. Previous scholars have also cited the use of ethnobotanical plants in the treatment of severe illnesses such as cancer, diabetes, AIDS, dermatological disorders, and depression. This research aims to elucidate the therapeutic qualities of specific plants, facilitating the treatment of disorders with herbal remedies devoid of adverse effects. Medicinal plants are crucial for delivering healthcare to approximately 80% of the population in India.

Kotia et al. (2020) provided essential data on approximately 2412 blooming plants in Rajasthan, distinguished by diverse morphological, ecological, medicinal, and commercial characteristics. A comprehensive description of their ecological parameters, specifically. The discussion encompassed climate, geology, geography, soil, drainage systems, and types of vegetation. This research analyzed the distribution of commercially significant plants throughout the State, including those having medicinal properties and other species yielding non-wood forest products such as gum, tannin, non-edible oils, dyes, and fibers. A segment was allocated to rare, endangered, and native flora of Rajasthan, which may aid in conservation measures and future population evaluations of these species. This study documented 2412 plant species, including 1804 dicots and 608 monocots, classified into 155 families and 941 genera. This study documented several plant species, specifying their scientific nomenclature, local or Hindi designations, familial classifications, geographical locations, and their medicinal or economic applications. This included more than 215 color photographs of various habitats and vegetation, which could significantly aid in field identification for taxonomic research.

Swarnkar et al. (2021) examined various medicinal plants and their significant traditional uses in the treatment of multiple diseases. Medicinal herbs employed in the Indian system from the Keladevi Sanctuary have been systematically analyzed and categorized.

Somani (2022) noted the prevalence of medicinal plants in the Barmer region of the Thar Desert. The utilization of herbal plants in medicine and pharmacology possesses significant promise. Historically, these therapeutic herbs have been employed by local inhabitants, indigenous communities, sellers, traditional healers such as Bhopas, and Ayurveda practitioners for several diseases. In the arid expanse of the Thar Desert, members of the Mimosaceae family of plants are more abundant.

Bhodiwal et al. (2022) examined the current literature on the ethnobotany of Rajasthan as of 2022. In 1895, Harshberger used the word ethnobotany to refer to plants employed by indigenous communities. Plants have served as a fundamental source of medicinal medicines from the dawn of human civilization. Despite considerable advancements in Allopathy over the twentieth century, plants remain a vital source of medications in contemporary and traditional medical systems worldwide. Approximately 33% of all pharmaceuticals originate from plants, encompassing creatures such as fungi and microbes, including bacteria. Over 60% of all pharmaceuticals are derived from botanical sources. Indigenous and local communities employ herbs to treat various ailments. The principal health troubles in contemporary society are linked to lifestyle, and herbal remedies may effectively alleviate these issues.

The Kota district, located in southeastern Rajasthan, is notable for its floral diversity. Malav et al. (2023) performed a study in the Nanta forest region of the Sakatpura forest range, situated within the Kota Forest division. Human activities jeopardize the diversity of ethnomedicinal plants in the studied area.

Rao (2024) analyzed the sacred forests of Sawai Madhopur district in Rajasthan, India, emphasizing their ethnobotanical importance, cultural history, and contribution to biodiversity protection. Jain and Singh (2024) conducted a study to identify the variables leading to the changes among the Bhils, which are progressively undermining the continuity of ethnobotanical knowledge.

Agarwal and Deora (2025) conducted a study in the tribal-dominated areas of southern Rajasthan, including Banswara, Chittorgarh, Dungarpur, Pratapgarh, Udaipur, and parts of Sirohi District. The study encompassed group discussions and interviews with the active involvement of local women, health practitioners, and elders, known as dais or gunis, who are experts in delivering traditional health care services to breastfeeding mothers in the research area. This study identifies 11 plant species from 9 families employed by tribal women to augment milk production and aid postpartum recovery. The study revealed essential information about the variety of medicinal plants employed by traditional practitioners in postnatal care, which might be integrated into the modern healthcare system to improve the health of nursing women worldwide.

Balkrishna et al. (2025) presented definitive pharmacological evidence concerning the ethnomedicinal plants employed by indigenous tribes in southern Rajasthan for the management of gastrointestinal problems. The information offered can markedly improve the development of more efficient and less harmful medications. Besides pharmaceutical creation and pharmacological research, the implications may include opportunities for alternative remedies.

III. CONCLUSION

The review clearly demonstrates that Rajasthan, despite its arid and semi-arid climate, harbours a rich and diverse assemblage of ethnomedicinal plants distributed across varied ecological zones. Numerous studies conducted in different districts of the state confirm the extensive use of medicinal flora by tribal and rural communities for treating a wide range of health disorders. Herbs constitute a major proportion of documented species, though shrubs, trees, grasses, and climbers also contribute significantly to traditional therapeutic practices. The dominance of certain families such as Fabaceae, Euphorbiaceae, Asteraceae, and Solanaceae reflects ecological adaptability as well as cultural familiarity. The accumulated literature reveals that traditional knowledge systems in Rajasthan are highly structured and region-specific, incorporating detailed information regarding plant parts used, preparation methods, dosage, and seasonal availability. However, increasing anthropogenic pressures—including deforestation, overgrazing, mining, agricultural expansion, and indiscriminate harvesting—pose serious threats to medicinal plant populations. Additionally, the gradual erosion of indigenous knowledge due to socio-cultural transformation further endangers this valuable heritage. Therefore, it is imperative to adopt integrated conservation strategies combining in situ and ex situ approaches, promote community participation, establish regulatory mechanisms for sustainable harvesting, and encourage scientific validation of traditional remedies.

REFERENCES

1. Agarwal, J., & Deora, G. S. (2025). Ethnobotanical investigation of medicinal plants for lactation enhancement and postpartum recuperation in tribal communities of southern Rajasthan. *International Journal of Pharmaceutical Sciences and Research*, 810–816.
2. Balkrishna, A., Sharma, H., Verma, S., Singh, S. K., Dobhal, V., & Arya, V. (2025). Antimicrobial activity of ethnomedicinal plants used by indigenous tribes of Southern Rajasthan districts of India to treat gastrointestinal diseases. *Next Research*, 2(2), 100367. <https://doi.org/10.1016/j.nexres.2025.100367>
3. Bhodiwal, S., Pathan, S., & Barupal, T. (2022). A review: Ethnobotany of various plants in respect to health.
4. Katewa, S. S. (2009). Indigenous people and forests: Perspectives of an ethnobotanical study from Rajasthan (India). In *Ethnobotany and Medicinal Plants* (pp. 43–56). https://doi.org/10.1007/978-3-540-79116-4_3
5. Katewa, S. S., Guria, B. D., & Jain, A. (2001). Ethnomedicinal and obnoxious grasses of Rajasthan, India. *Journal of Ethnopharmacology*, 76, 293–297. [https://doi.org/10.1016/S0378-8741\(01\)00233-1](https://doi.org/10.1016/S0378-8741(01)00233-1)
6. Kotia, A., Solanki, Y., & Reddy, G. (2020). *Flora of Rajasthan* (Vol. 2).

7. Kumari, V., & Jain, S. (2018). *Ethnomedicinal plants of Harshnath Hills of Shekhawati region of Rajasthan* (Vols. 1–2, pp. 1–16).
8. Maheshwari, S., & Sharma, A. (2019). Ethnobotanical studies on medicinal plants in Hadoti region of Rajasthan. *Journal of Pharmacognosy and Phytochemistry*, 8(2), 546–549.
9. Malav, A., Dadhich, P., & Jaiswal, P. (2023). Ethnomedicinal plant diversity and their usage among rural communities in Nanta Forest region, Kota District, Rajasthan. *International Journal of Pharmaceutical Sciences and Research*, 14(7), 3566–3574. [https://doi.org/10.13040/IJPSR.0975-8232.14\(7\).3566-74](https://doi.org/10.13040/IJPSR.0975-8232.14(7).3566-74)
10. Meena, A., & Meda, M. (2009). Folk herbal medicines used by the Meena community in Rajasthan. *Asian Journal of Traditional Medicine*, 5.
11. Rao, P. (2024). Sacred groves of Sawai Madhopur District of Rajasthan: An ethnobotanical study. *International Journal of Innovative Research in Management, Pharmacy and Sciences*, 12(6), Article IJIRMP2406231586.
12. Sharma, L., & Khandelwal, S. (2010). Weeds of Rajasthan and their ethno-botanical importance. *Studies on Ethno-Medicine*, 4(2), 75–79. <https://doi.org/10.1080/09735070.2010.11886363>
13. Singhadiya, M., Pandey, I., Maina, V., Pandey, R., & Peddy, H. (2016). Ethnobotanical study of traditional medicinal plants used as anti-psoriatic in Rajasthan. *Journal of Non-Timber Forest Products*, 23(4), 225–232. <https://doi.org/10.54207/bsmps2000-2016-4U6M8O>
14. Somani, G. (2022). Ethnobotanical survey of Mimosaceae family in Barmer, Rajasthan. *International Research Journal of Science Engineering and Technology*, 9, 146–149. <https://doi.org/10.17148/IARJSET.2022.91021>
15. Swarnkar, S., & Katewa, S. (2007). Ethnobotanical observation on tuberous plants from tribal area of Rajasthan (India). *Ethnobotanical Leaflets*, 12.
16. Swarnkar, V., Khandelwal, S., & Verma, R. (2021). Medicinal plants of the Keladevi Wildlife Sanctuary of Rajasthan. *Paripex Indian Journal of Research*, 44–46. <https://doi.org/10.36106/7801706>
17. Vijayvergia, R. (2017, June 15–17). Study of some medicinal plants of Rajasthan used by tribes for different diseases. In *2nd International Conference and Exhibition on Marine Drugs and Natural Products*, London, UK. *Natural Products Chemistry & Research*, 5(3, Suppl.).



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