

Applied Domestication of Medicinal Plants and Traditional Practices in Sikar, Rajasthan: Contemporary Utilization

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Abstract: Sikar district, located in the Shekhawati region of Rajasthan, has a rich history of medicinal plant use and domestication in households, farms, and community spaces. This study explores the applied use of domesticated medicinal plants, focusing on their contemporary applications in modern life. Data were collected through structured interviews with 120 households, 20 local pansaris, and 15 herbal vendors. Key domesticated species included Tulsi, Aloe vera, Ashwagandha, Guduchi, Neem, Harad, Amla, and Mulethi. Findings reveal that traditional knowledge remains actively applied, supporting healthcare, cultural heritage, and biodiversity conservation, while integrating modern practices.

Keywords: Domesticated medicinal plants, Sikar, Traditional healthcare, Herbal medicine, Rajasthan, Ethnobotany, Home gardens.

1.1 Introduction

Traditional medicine has been central to rural healthcare in Rajasthan. Sikar, with its semi-arid climate and sandy soils, relies heavily on domesticated medicinal plants cultivated in households, farms, and temple gardens. These plants serve preventive, curative, and wellness purposes, complementing modern pharmaceuticals. This study examines the contemporary applications of domesticated medicinal plants in Sikar, highlighting the adaptation of traditional practices to modern life and their socio-cultural relevance.

1.2 Historical Background

Sikar has a longstanding tradition of herbal medicine influenced by Ayurveda, folk practices, and local ethnobotanical knowledge. Historical accounts and oral traditions document the use of Tulsi, Aloe vera, Ashwagandha, Guduchi, Neem, Harad, and Mulethi for common ailments. Domestication practices were developed to ensure year-round availability, reduce reliance on wild species, and sustain household healthcare. Pansaris and local healers have historically acted as custodians of medicinal knowledge, preparing remedies and guiding communities.

1.3 Review of Literature

The area under research work was studied by following botanists and time to time viz; first of all the Sekhawati region was touched from vegetational study point of view by Mulay and Ratnam (1950), Bikaner and pilani neighbourhood areas by Joshi (1956 and 1958), vegetation of chirawa by Nair (1956), again Nair and Joshi for Pilani and neighbourhood areas (1957), vegetation of harsh nath in aravalli's hills was studied by Nair and Nathawat (1957), vegetation of Jhunjhunu, Manderella and neighbourhood by Nair (1961), vegetation of ajit sagar dam by Nair and Kanodia (1959); Nair, Kandodia and Thomas (1961) studied the vegetation of Khetri town and

neighbourhood areas and vegetation of Lohargal and its neighbourhood areas of Sikar district by Nair and Malhotra (1961). After the work of Nair and Malhotra (1961), i.e. four decades ago. the area was again left for any sort of further research work in the field of applied Botany.

Earlier studies by Bhandari (1978) emphasized adaptation strategies of desert flora including reduced leaf area, deep-root systems, and succulence. Sharma (2003) investigated ethnomedicinal species in western Rajasthan and documented climate-sensitive taxa. Studies by Singh and Rathore (2010) reveal that rainfall decline affects reproductive success in several desert medicinal plants.

A significant, very authentic taxonomic work was contributed in the field of botany by Bhandari with the publication of a book Flora of the Indian desert (1990). From the field of applied phytogeography point of view. Charan gave a valuable contribution with a publication of a book on Plant Geography (1992). Bhattacharjee (2000) gave a very valuable authentic contribution through the publication of a book on Handbook of Medicinal Plants in which he presented the medicinal plants of Indian Sub-continental back ground with their coloured photographs also and Sharma (2007) gave a very valuable authentic contribution through the publication of a book on Medical Plant Geography.

Research in Rajasthan emphasizes the ecological, socio-economic, and cultural importance of domesticated medicinal plants. Jain (1981) provides foundational ethnobotanical documentation. Sharma and Meena (2007) highlight the role of home gardens in conserving medicinal plant diversity. Singh and Kaur (2010) analyze socio-economic aspects of medicinal plant cultivation. Gupta and Kumar (2014) discuss integrating traditional remedies with modern healthcare. However, focused studies on Sikar's domesticated plant applications and modern adaptations remain limited.

1.4 Objectives

1. Document domesticated medicinal plant species in Sikar households and farms.
2. Explore contemporary applications of traditional remedies.
3. Identify challenges in sustaining domesticated medicinal plants.
4. Recommend strategies for sustainable conservation and promotion.

1.5 Methodology

1. **Study Design:** Descriptive and ethnobotanical research.
2. **Data Collection:** Structured interviews with 120 households, 20 pansaris, and 15 herbal vendors; collection of plant specimens for verification.
3. **Plant Identification:** Verified using Jain (1981) and herbarium specimens.
4. **Data Analysis:** Quantitative assessment of plant usage frequency and qualitative analysis of preparation methods, remedies, and contemporary adaptations.

1.6 Study Area

Sikar, located in northeastern Rajasthan, experiences semi-arid conditions with sandy soils and annual rainfall of 400–500 mm. Agriculture, home gardens, and temple precincts serve as the main sites for domesticated medicinal plants. The local flora is predominantly xerophytic, drought-resistant, and adapted to low water availability.

1.7 Observations

1. 52 domesticated medicinal plant species were recorded in households and community gardens.
2. Frequently used species: Tulsi, Aloe vera, Ashwagandha, Guduchi, Neem, Harad, Mulethi, Amla, Babul.
3. Remedies addressed respiratory infections, digestive disorders, skin ailments, stress, and immunity enhancement.
4. Preparation methods included decoctions, powders, pastes, oils, and herbal teas.
5. Households with home gardens demonstrated higher engagement with traditional remedies and better knowledge transfer to younger generations.

1.8 Discussion

Domestication ensures sustainable availability of medicinal plants, reduces pressure on wild populations, and supports biodiversity conservation. Traditional practices remain relevant despite urbanization and modern pharmaceuticals. Pansaris continue to serve as knowledge custodians and providers of herbal remedies. Economic opportunities exist through the commercialization of herbal products. Challenges include declining interest among youth, environmental degradation, and limited formal recognition of traditional knowledge.

1.9 Results

1. 76% of households regularly used at least three domesticated medicinal plant species.
2. Home gardens were essential for sustaining traditional healthcare practices.
3. Knowledge transmission occurred through family practices, community networks, and guidance from pansaris.

4. Commercial opportunities exist for herbal products, supporting livelihoods.

1.10 Conclusion

The domestication of medicinal plants in Sikar supports healthcare, cultural heritage, and biodiversity conservation. Traditional knowledge remains relevant and adaptable to modern lifestyles. Awareness programs, education, and economic incentives are necessary to preserve these practices and promote sustainable use of domesticated medicinal plants.

1.11 Recommendations

1. Encourage cultivation of medicinal plants in homes, schools, and community gardens.
2. Integrate traditional remedies with primary healthcare initiatives.
3. Support pansaris with training in sustainable collection, processing, and marketing.
4. Educate youth to preserve traditional medicinal knowledge.
5. Document endangered species and traditional preparation methods for long-term conservation.

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