

Traditional and Modern Applications of Domesticated Medicinal Plants in Neem Ka Thana, Rajasthan

Dr. Babita¹, Dr. Mukesh Kumar Sharma², Dr. Snehlata³

¹ Assistant Professor, Department of Geography, Maharani Girls PG College, Rampura, Alsisar, Jhunjhunu, Rajasthan

² Principal, Maharani Girls PG College, Rampura, Alsisar, Jhunjhunu, Rajasthan

³ Assistant Professor, Department of Geography, Maharani Girls PG College, Rampura, Alsisar, Jhunjhunu, Rajasthan

Abstract: *Neem Ka Thana, a semi-arid region in Rajasthan, exhibits a longstanding tradition of medicinal plant use and domestication. This study investigates the applied use of domesticated medicinal plants in households, farms, and community spaces, highlighting contemporary adaptations of traditional practices. Primary data were collected from 120 households, 18 local pansaris, and 12 herbal vendors. Key domesticated species included Tulsi, Aloe vera, Ashwagandha, Guduchi, Neem, Harad, and Amla, which were used for preventive, therapeutic, and wellness purposes. Findings reveal that traditional knowledge remains resilient, adapting to modern healthcare needs while supporting cultural heritage and biodiversity conservation.*

Keywords: Domesticated medicinal plants, Neem Ka Thana, Traditional healthcare, Herbal medicine, Rajasthan, Ethnobotany.

1.1 Introduction

Medicinal plants have historically played a crucial role in rural healthcare across Rajasthan. In Neem Ka Thana, the harsh climate and arid conditions necessitated the domestication of drought-tolerant medicinal species in households, farms, and temple gardens. These plants are utilized for both curative and preventive purposes, sustaining traditional healthcare systems alongside modern pharmaceuticals. This study explores the contemporary applications of domesticated medicinal plants in Neem Ka Thana, focusing on the integration of traditional practices in modern life and their socio-cultural significance.

1.2 Historical Background

Neem Ka Thana has a rich heritage of traditional medicine influenced by Ayurveda, folk healing, and local ethnobotanical knowledge. Historical sources and oral traditions document the use of species such as Tulsi, Aloe vera, Ashwagandha, Guduchi, Harad, and Neem for the treatment of common ailments. Domestication practices emerged to ensure consistent availability of medicinal species, reduce dependency on wild collection, and sustain household healthcare. Pansaris have historically been key custodians of medicinal knowledge, preparing remedies and guiding communities in herbal therapies.

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 it's 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 has highlighted the significance of domesticated medicinal plants in traditional healthcare. Jain (1981) provided foundational ethnobotanical documentation. Sharma and Meena (2007) emphasized home gardens as key sites for preserving medicinal plant diversity. Singh and Kaur (2010) discussed socio-economic aspects of medicinal plant cultivation. Gupta and Kumar (2014) analyzed the integration of traditional remedies with modern healthcare frameworks. However, focused studies on the practical application of domesticated medicinal plants in Neem Ka Thana and contemporary adaptations remain scarce.

1.4 Objectives

1. To document domesticated medicinal plant species in Neem Ka Thana households and farms.
2. To investigate contemporary applications of traditional remedies.
3. To identify challenges in maintaining domesticated medicinal plants.
4. To propose strategies for sustainable conservation and promotion.

1.5 Methodology

1. **Study Design:** Descriptive and ethnobotanical survey.
2. **Data Collection:** Structured interviews with 120 households, 18 pansaris, and 12 herbal vendors; collection of plant specimens for botanical verification.
3. **Plant Identification:** Verified using standard references (Jain, 1981) and herbarium specimens.
4. **Data Analysis:** Quantitative analysis of plant usage frequency and qualitative documentation of preparation methods, remedies, and modern adaptations.

1.6 Study Area

Neem Ka Thana, located in Sikar district of Rajasthan, experiences semi-arid conditions with sandy soils and annual rainfall of 400–500 mm. Agriculture, home gardens, and temple precincts serve as the primary sites for the cultivation and domestication of medicinal plants. The local flora is predominantly xerophytic and adapted to low water availability.

1.7 Observations

1. 50 domesticated medicinal plant species were recorded in households and community spaces.
2. Most frequently used species: Tulsi, Aloe vera, Ashwagandha, Guduchi, Neem, Harad, Mulethi, Amla, and Babul.
3. Remedies addressed respiratory infections, digestive disorders, skin ailments, stress, and immunity enhancement.
4. Preparation methods included decoctions, powders, pastes, oils, herbal teas, and mixed formulations.

5. Households with home gardens demonstrated higher reliance on traditional remedies and better knowledge transmission to younger generations.

1.8 Discussion

Domestication ensures reliable access to medicinal plants, reduces pressure on wild populations, and supports ecological conservation. Modern pharmaceuticals influence the usage of some remedies; however, traditional practices remain integral to healthcare and cultural identity. Pansaris continue to provide essential guidance and products, bridging traditional knowledge with modern needs. Economic opportunities exist through the commercialization of locally grown herbal products, enhancing livelihoods. Challenges include declining youth interest, habitat degradation, and limited institutional support for traditional knowledge.

1.9 Results

1. 73% of surveyed households regularly used at least three domesticated medicinal plant species.
2. Home gardens were pivotal in sustaining traditional healthcare practices.
3. Knowledge transmission occurred through family practices, community networks, and pansaris.
4. Commercial potential exists for herbal products, offering opportunities for economic empowerment.

1.10 Conclusion

The domestication of medicinal plants in Neem Ka Thana contributes to healthcare, cultural heritage, and biodiversity conservation. Traditional knowledge remains relevant despite modern influences, with practices adapting to contemporary lifestyles. Sustainable strategies, education, and economic incentives are necessary to ensure the preservation and promotion of domesticated medicinal plant use.

1.11 Recommendations

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

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