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Domesticated Medicinal Plants and Traditional Healing Practices in Khetri, Rajasthan: Contemporary Applications

Dr. Babita [1], Dr. Mukesh Kumar Sharma [2], Dr. Snehlata [3]

[1] Assistant Professor, Department of Geography, S.K.D. University, Hanumangarh, 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: ***Khetri, a semi-arid town in Jhunjhunu district of Rajasthan, has a rich heritage of traditional medicinal plant use and domestication. This study investigates the applied use of domesticated medicinal plants in households, farms, and community areas, focusing on modern adaptations of traditional practices. Data were collected through structured interviews with 115 households, 18 local pansaris, and 12 herbal vendors. Key domesticated species included Tulsi, Aloe vera, Ashwagandha, Guduchi, Neem, Harad, Mulethi, and Amla, used for preventive and curative purposes. Findings indicate that traditional knowledge remains relevant, supporting cultural identity, primary healthcare, and biodiversity conservation while adapting to modern lifestyles.***

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

1.1 Introduction

Traditional medicine has been central to rural healthcare in Rajasthan for centuries. In Khetri, arid climatic conditions have shaped the domestication of drought-tolerant medicinal plants cultivated in households, farms, and temple gardens. These plants serve therapeutic, preventive, and wellness purposes, complementing modern pharmaceuticals. This research explores the contemporary applications of domesticated medicinal plants in Khetri, highlighting adaptations of traditional practices in modern lifestyles.

1.2 Historical Background

Khetri has a longstanding tradition of herbal medicine influenced by Ayurveda and local folk practices. Historical accounts and oral traditions highlight the use of Tulsi, Aloe vera, Ashwagandha, Guduchi, Neem, and Harad for common ailments. Domestication emerged as a strategy to ensure year-round availability, reduce dependency on wild species, and sustain household healthcare. Local pansaris have historically maintained knowledge of plant identification, preparation, and application.

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 neghbourhood 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 publcation 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 autheontic 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.

Rajasthan's medicinal plant traditions have been extensively documented. Jain (1981) provides foundational ethnobotanical information. Sharma and Meena (2007) emphasize the role of

home gardens in preserving plant diversity. Singh and Kaur (2010) analyze socio-economic aspects of medicinal plant cultivation. Gupta and Kumar (2014) discuss the integration of traditional remedies with modern healthcare. However, focused studies on domesticated plant applications and contemporary usage in Khetri remain limited, warranting field-based research.

1.4 Objectives

1. Document domesticated medicinal plant species in Khetri 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 survey.

2. Data Collection: Structured interviews with 115 households, 18 pansaris, and 12 herbal vendors; plant specimen collection for verification.

3. Plant Identification: Verified using Jain (1981) and herbarium references.

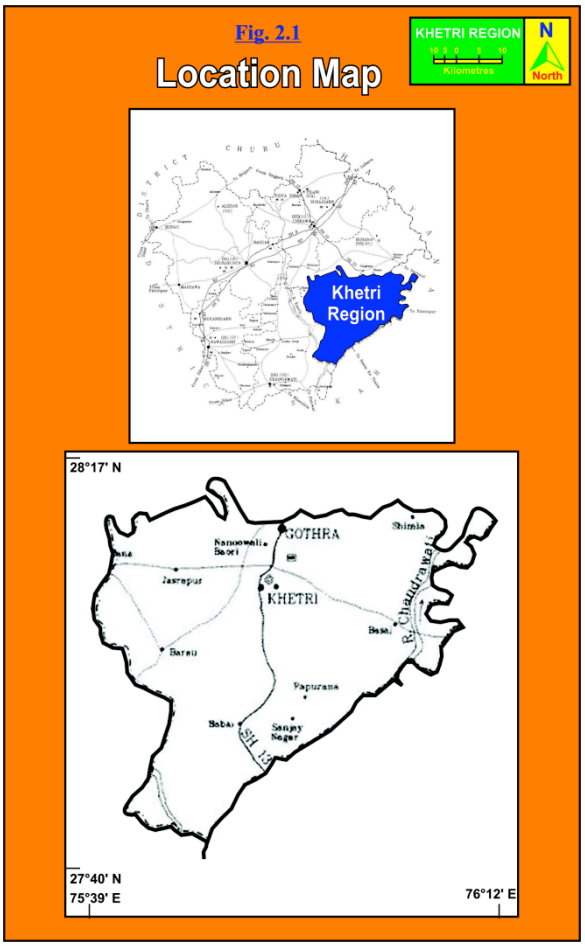
4. Data Analysis: Quantitative assessment of plant usage frequency and qualitative analysis of preparation methods, remedies, and modern adaptations.

1.6 Study Area

Khetri, located in Jhunjhunu district, experiences semi-arid climate, sandy soils, and annual rainfall between 400–500 mm. Agriculture, home gardens, and temple areas serve as the main sites for domesticated medicinal plants. The local flora is predominantly xerophytic and adapted to low water availability.

Khetri Tehsil is located in south-eastern part of Jhunjhunu district, Rajasthan state with it's geographical extension in between 27° 40' to 28° 17' north latitude and 75° 39' to 76° 12' east longitude**.** From geographical area point of view, which is 11.31 sq.km. Khetri Tehsil itself with more details which includes its interval physical as well as cultural features. In north of Khetri area copper town is located at 8 km. distance whereas in south the village Papurna is located at 10 km. distance, thus Khetri has location on the state highway route i.e. Neemkathana to Copper town. Further in this context this route in north it is linked with Jhunjhunu and New Delhi whereas in south the state highway linked to the city Jaipur.

The Khetri Tehsil obtains second place after Jhunjhunu tehsil in Jhunjhunu district, Rajasthan by percentage contribution in the total population percentage of the district i.e. 24 percent (2001) which is 0.20 percent higher than that of (1991) i.e. 3.57 percent. At the part of total geographical area, the Khetri Tehsil is placed at second. position by obtaining 27 percent only of the district's total. From total area under forest point of view, the Khetri Tehsil stands at second position by keeping 14 percent of the district's total.



The Khetri Tehsil presents some places of real interest from tourism point of view. Baghor hills, Mansamata temple, Fort of Khetri and Ajit Sagar dam these all places are located in forest area. Last but not least Mission of Swami Vivekananda (Khetri town) and copper mines plant in Khetri Nagar.

According V.C. Mishra (1967), the area under study falls in semi-arid region of Rajasthan while according Prof. R.L. Singh (1971) the Khetri Tehsil is covered by western Sikar-Jhunjhunu plains in banger region of Rajasthan.

1.7 Observations

1. 47 domesticated medicinal plant species were recorded in households and community spaces.

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: decoctions, powders, pastes, oils, and herbal teas.

5. Households with home gardens demonstrated higher engagement with traditional practices and better knowledge transfer to younger generations.

1.8 Discussion

Domestication ensures reliable access to medicinal plants, supporting biodiversity conservation and sustainable healthcare. Traditional practices remain integral despite urbanization and the availability of pharmaceuticals. Pansaris continue to play a central role in guidance, preparation, and distribution of remedies. Economic opportunities exist through the commercialization of herbal products. Challenges include declining youth interest, environmental degradation, and limited formal recognition of traditional knowledge.

1.9 Results

1. 72% of surveyed households regularly used at least three domesticated medicinal plant species.

2. Home gardens were crucial for sustaining traditional healthcare practices.

3. Knowledge transmission occurred primarily through family traditions, community networks, and guidance from pansaris.

4. Sustainable commercial opportunities exist for herbal products, enhancing local livelihoods.

1.10 Conclusion

The domestication of medicinal plants in Khetri 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. Promote 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 conservation.

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