

# Survey of Medicinal Plants in the Shekhawati Region of Rajasthan: Traditional Knowledge and Modern Relevance

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**Abstract**-The Shekhawati region of Rajasthan, India, is renowned for its rich tradition of medicinal plant use, sustained by indigenous communities for generations. This paper presents an ethnobotanical survey, documenting the traditional usage of medicinal flora and exploring its contemporary relevance. By systematically cataloguing over 30 species and elucidating their applications against common ailments, the study highlights the region's unique blend of ecological diversity and cultural heritage. Findings reveal significant traditional knowledge pertaining to disease treatment, oral health, and veterinary applications. The research underlines the critical need for preservation, sustainable use, and integration of ethnomedicinal wisdom into broader healthcare and conservation efforts. Historic sources are reviewed, and the transmission of knowledge across generations is analyzed, offering actionable insights for modern medicine and public policy.

**Keywords :** Shekhawati, Ethnobotanical Survey, Traditional Medicine, Medicinal Plants, Indigenous Knowledge, Modern Relevance, Sustainable Use, Public Health, Biodiversity Conservation

## I. INTRODUCTION

The Shekhawati region, encompassing the districts of Sikar and Jhunjhunu in northeastern Rajasthan, features a semi-arid landscape punctuated by hilly terrain such as Lohargal, Shakambhari, Harshnath, and Khetri. Its proximity to the Thar Desert has shaped both its flora and the livelihoods of its rural populations. For centuries, local communities have depended on medicinal plants for primary healthcare, drawing upon deeply embedded traditional knowledge systems that have been orally transmitted across generations.

Ayurveda and various local practices emphasize the curative power of plants, reinforcing a close relationship between nature and culture. Early researchers, such as King (1870) and S.K. Jain, laid the groundwork for systematic ethnobotanical documentation in Rajasthan. Despite modern pressures leading to erosion of this knowledge, the Shekhawati region remains a repository of invaluable ethnomedicinal traditions, vital for both conservation and biomedical innovation.

## II. METHODOLOGY

Ethnobotanical data were collected through field visits conducted in hilly tracts and villages, including Lohargal, Shakambhari, Harshnath, Chappoli, Udaipurwati, Nawalgarh, and Khetri. Interviews were held with a diverse group of informants – elderly residents, herbal healers (vaidya), market vendors, and women regarded as custodians of household remedies. Structured questionnaires and informal discussions captured:

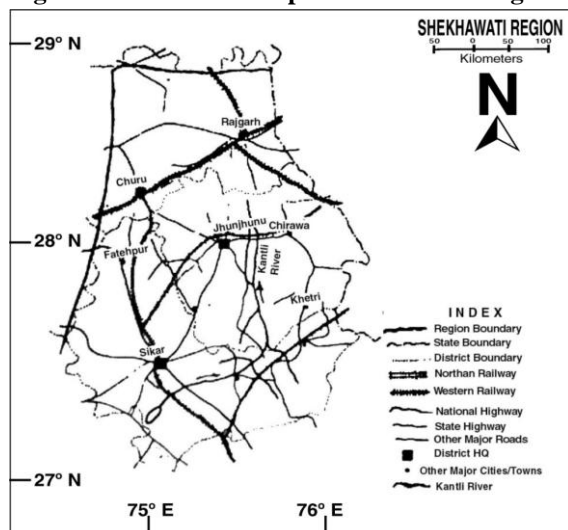
1. Plant species identification by local name and taxonomy
2. Specific ailments treated, parts of the plant used, preparation methods, and dosage
3. Ritualistic or magico-religious uses
4. Veterinary applications
5. Observed efficacy and perceived side effects

Botanical specimens collected during the survey were verified using standard literature (Kirtikar and Basu, 1993; Bhandari, 1978), and herbarium samples were prepared for institutional deposition.

## III. STUDY AREA

**Figure-1.1** shows the area under study i.e. Shekhawati region which is located in the north-eastern part of Rajasthan state and the region has geographical extension from 26°26' to 29°20' N latitude and 74° 44' to 76°34' E longitude on the map of Rajasthan. The area under study covers fully or partly three districts, namely Churu, Jhunjhunu and Sikar. Churu district's out of 7, only 3 tehsils fall under Shekhawati region (Churu, Rajgarh and Taranagar) whereas Jhunjhunu district as a whole with its six tehsils (Buhana, Chirawa, Khetri, Jhunjhunu, Nawalgarh and Udaipurwati) in which Buhana tehsil emerged out as a new tehsil on the map of Jhunjhunu district (2001), it was no more existence in the year of 1991 and Sikar district also covered fully with its six tehsils (Data Ramgarh, Fatehpur, Laxmangarh, Neem ka Thana, Sikar and Shri Madhopur). The region has 23 Panchayat Samitis in all. Thus, the region under study has 15 tehsils in total with its total 15343 sq. km. geographical area which makes 5.6% of the state's total. At the part of district-wise contribution by area point of view in Shekhawati region it is observed that part and portion of Churu district contributes 29%, Jhunjhunu district contributes 31% and Sikar by 40%, respectively.

Figure- 1.1 Location Map of Shekhawati Region



Among these tehsils area point of view, the tehsil of Churu is largest one and Buhana smallest, respectively. District-wise area point of view Sikar stands at first position which is followed by Jhunjhunu and lowest contribution is made by Churu i.e. 1683 sq. km. only.

At the part of population, Shekhawati region contributes 8.7 percent of the state's total in which sex-ratio is 948 females per thousand males in Total Population whereas it is very low i.e. 887 in Child Population for the area under study. The region obtains high Literacy rate which is about 10% more than that of the state's average. Among tehsils, Buhana ranks at first position while as Neem ka Thana contributes lowest in this aspect. The region obtains high density (244) i.e. 50 percent more than that of state's average which is 165 persons per sq. area 2001. The region has also Slum population but it is very low or to say negligible i.e. 2.5% only of the urban area's total.

The whole region has distribution of two types of soils; Sandy soil and Red Loamy soil. The former soil type has obvious distribution in Churu district, the areas of sand dunes topography; the later soil group is mostly distributed over the districts of Jhunjhunu and Sikar (classification based on dominancy, availability and agricultural productivity). The distribution of soil type and its physical as well as chemical nature is a significant aspect from vegetation as well as plant species distribution point of view.

On the basis of another type of soil type classification according Prof. Thorpe and Smith based on the origin of the soil, the observations revealed in this direction that Remosols type of soil has distribution in the areas of sand dunes topography; all three tehsils of Churu districts have, Red sandy soil which is more alkaline in nature. Hilly topography soil and Riverine soil have their distribution according the distribution of habitat of study area.

#### IV. RESULTS AND ANALYSIS

##### 1. Inventory of Medicinal Plants

A total of 31 plant species belonging to 23 botanical families were documented as commonly used medicinal

resources in the Shekhawati region. These plants addressed a wide spectrum of human ailments – from digestive disorders and skin diseases to diabetes and respiratory conditions – as well as veterinary diseases.

##### 2. Preparation Methods

Plant materials are utilized in various forms: raw (chewed or applied topically), as decoctions, prepared pastes, powders, sweets (e.g., laddu containing medicinal seeds), and juices. Complex formulations often combine multiple plants to enhance therapeutic efficacy for chronic conditions like diabetes or respiratory illnesses.

##### 3. Cultural and Ritual Use

Beyond biomedicine, ethnobotanical practices include magico-religious rituals, with certain plants used for auspicious ceremonies, protection against evil, and seasonal festivals. These traditions strengthen communal identity and reinforce sustainable practices.

##### 4. Veterinary Applications

Many species, such as *Achyranthes aspera* and *Cassia fistula*, serve dual roles in treating ailments of livestock, a key aspect of Shekhawati's agro-pastoral livelihood.

#### V. DISCUSSION

##### 1. Knowledge Transmission and Erosion

Ethnomedicinal knowledge is predominantly held by older generations and women, with oral transmission being the primary mode of inheritance. However, modernization, loss of habitat, and reduced availability of medicinal flora threaten the continuity of these traditions.

##### 2. Intersection with Modern Medicine

Several documented plants, such as *Azadirachta indica* and *Withania somnifera*, have scientifically validated bioactive compounds (alkaloids, flavonoids, saponins) showing efficacy against diabetes, infection, inflammation, and other conditions. The use of plant parts for treating hyperglycemia is notable, suggesting potential for bioprospecting and integration with allopathic medicine.

##### 3. Challenges and Conservation Needs

Rapid habitat loss due to overgrazing, drought, population pressure, and agricultural expansion has led to decline or local extinction of some species. The fragile knowledge system is compounded by insufficient scientific documentation and unregulated commercial exploitation.

Conservation of medicinal flora and cultural knowledge thus requires:

- Community engagement and documentation
- Outreach through educational programs
- Institutional support for sustainable harvesting and propagation

#### VI. MODERN RELEVANCE

##### 1. Public Health Integration

Medicinal plants in Shekhawati continue to serve as readily available, cost-effective remedies, especially where

formal healthcare access is limited. Participatory research and scientific validation of traditional prescriptions offer promising routes for developing integrated public health interventions.

## 2. Policy Implications

Ethnobotanical surveys underpin the need for clear policy frameworks that protect intellectual heritage, regulate plant resource use, and promote gender-inclusive conservation efforts. The Shekhawati region, with its documented diversity and usage patterns, provides a model for linking ethnobotany and rural development strategies.

## VII. CONCLUSION

The Shekhawati region of Rajasthan harbors a robust tradition of medicinal plant use, manifesting a unique intersection of ecological adaptation and cultural continuity. Systematic ethnobotanical surveys confirm the therapeutic and economic value of indigenous knowledge, which remains relevant for modern healthcare and conservation challenges. The imperative for preservation and scientific exploration is urgent in light of declining traditional expertise and biodiversity threats. Future research should focus on:

1. Quantitative pharmacological studies
2. Expanded documentation of rare and endangered species
3. Strengthened policy measures for medicinal plant access and rights

## REFERENCES

- [1.] Charan, A.K. (1992) Plant Geography, Rawat Publication, Jaipur
- [2.] Mishra, Lalita; Dixit, Yogendra; Singh, Mohan. "Studies on Ethno-Medicinal Plants of Shekhawati Region, Rajasthan, Having Hypoglycemic Properties." Indian Journal of Fundamental and Applied Life Sciences Vol. 4(2) April-June 2014 .
- [3.] Sharma, M.K. 2007, Medical Plant Geography, Rachna Publication, Jaipur
- [4.] Katewa, S.S.; Galav, P.K. "Traditional herbal medicines from Shekhawati region of Rajasthan." Indian Journal of Traditional Knowledge Vol. 4(3), July 2005, pp. 237-245 .
- [5.] Kirtikar, K.R.; Basu, B.D. "Indian Medicinal Plants." 1st edition, Periodical Experts Book Agency, 1993 .
- [6.] Billore, K.V.; Audichaya, J. "Some oral contraceptive in family planning tribal way." Journal of Research in Indian Medicine 13(2) 104, 1978 .
- [7.] Prajapati, N.D.; Purohit, S.S.; Sharma, A.K.; Kumar, T. "Handbook of Medicinal Plants – A Complete Source Book." Agrobios Publishers, 2003 .
- [8.] Jain, S.K., Ed. "Glimpses of Indian Ethnobotany." New Delhi: Oxford and IBH publications Co., 1981 .
- [9.] Sukhdev. "A Selection of Prime Ayurvedic Plant Drugs." Amanaya Publishers, 2005 .
- [10.] Christopher, B.; Newgard, M.J.; Brady, M.J.; O'Doherty, R.M.; Saltiel, A.R. "Emerging Roles of

Glycogen Targeting Subunits of Protein Phosphatase-1." Diabetes 49: 1967-1977, 2000.

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