

## AN ETHNOMEDICINAL RECORD OF HERBACEOUS PLANTS OF ARAVALLI HILLS OF AJMER DISTRICT, RAJASTHAN, INDIA

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### ABSTRACT

*Aravalli hills of Ajmer district is lies in the central Aravali hill range of Rajasthan. Aravalli hills in Rajasthan forms a special ecotone between the hilly forest of Aravalli's and the Thar Desert located in the west of India. The vegetation in the hilly area is a significant component of the floral resources of Rajasthan, which is of immense educational and medicinal value. The present study of traditional knowledge on folkloric medicines shows that 16 herbaceous angiosperm plant species belonging to 11 families are used in daily life by the local community for various diseases. Our study concludes that the wealth of indigenous ethnographic knowledge may also present great potential for research into discovering new drugs to fight disease and other new uses. Ever-increasing human population, human encroachments, global warming, overgrazing are main threats for the vegetation of the area. Which needs instant measures for conservation. The conservation efforts should do at local communities and government level.*

**Keywords:** Folkloric Medicine, Indigenous Ethnography, Human Encroachment, Conservation Efforts.

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### Introduction

The Aravalli hill range is indeed a prominent geological feature in India. It is one of the oldest mountain ranges in the world, and it extends across multiple states in India, including Gujarat, Rajasthan, Haryana, and Delhi. The Aravalli hills Range extends from Khedbrahma and Palanpur in Gujarat to Raisina Hills in New Delhi. The total length of the Aravalli Range from Khedbrahma to Raisina Hills is approximately 692 kilometers. About 80% of this length, which is approximately 550 kilometers, is located in the state of Rajasthan. In Rajasthan, the Aravalli Range runs in a southwest to northeast direction, from Udaipur and Sirohi in the southwest to Alwar district in the northeast. The Aravalli Range is known for its scenic beauty and plays a significant role in shaping the geography and environment of the regions it traverses. In Rajasthan located in Udaipur, Sirohi, Rajsamand, Ajmer, Jaipur, Sikar, Dausa, Alwar and cover about 9.3% geographical area inhabited by 10% population of the state. Aravalli Range as a rough, rocky, and hilly terrain. It is characterized by its rugged topography, with rocky outcrops and hilly landscapes. The Aravalli Range is home to various tribal communities, including the Bhil, Bhil-Meena, Meena, Garasia, and others. These indigenous tribes have inhabited the Aravalli region for centuries and have a deep-rooted connection to the land. The conservation of the diverse flora in the Aravalli hills of Ajmer district is indeed a crucial matter, and it's important to involve local communities and government authorities to address this issue effectively. There are many angiosperm plant species which are ethnobotanically and medicinally important.

### Review of Literature

Botanical explorations in Rajasthan have a rich history, and the contributions of various naturalists and botanists have been instrumental in documenting the region's flora. Victor Jacquemont was a French naturalist who visited the Aravalli Range during his journey from Delhi to Bombay via Ajmer and Neemuch. His explorations and observations in the region were published in "Sketches of Ajmer Merwara," where he documented the plant species he encountered. Later it was Sir George King published a paper titled "Sketch of Flora of Rajputana" in 1878. This publication likely expanded on the

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botanical knowledge of the region and provided valuable insights into the flora of Rajputana, which is now part of Rajasthan. Subsequent publications included Duthie's (1886) report on botanical tours in Rajputana and Macadam's "List of Plants of Mt. Abu" (1890). Many floras, including "Flora of upper gangetic plain, (including Rajputana)" by Duthie (1929) and "Flora of Indian desert" by Bhandari M.M. (1978), were published in the wake of these works. Volumes I, II, and III of "Flora of Rajasthan" by B.V. Shetty and V. Singh were released by the Botanical Survey of India in 1988. Recently, several researchers have conducted extensive ecological studies on Rajasthan's vegetation. Examples of these studies include " Impacts of Parthenium hysterophorus on Vegetation of Aravalli Hills of Ajmer (Rajasthan) " by Gupta T. & Yadav M.K. (2019) in the Journal of Biological and Chemical Research, and "Spermatophytic Flora of Ajmer District, Rajasthan" by Harsh R. & Tak P. C. (2018) which was published in the International Journal of Allied Practice, Research & Review.

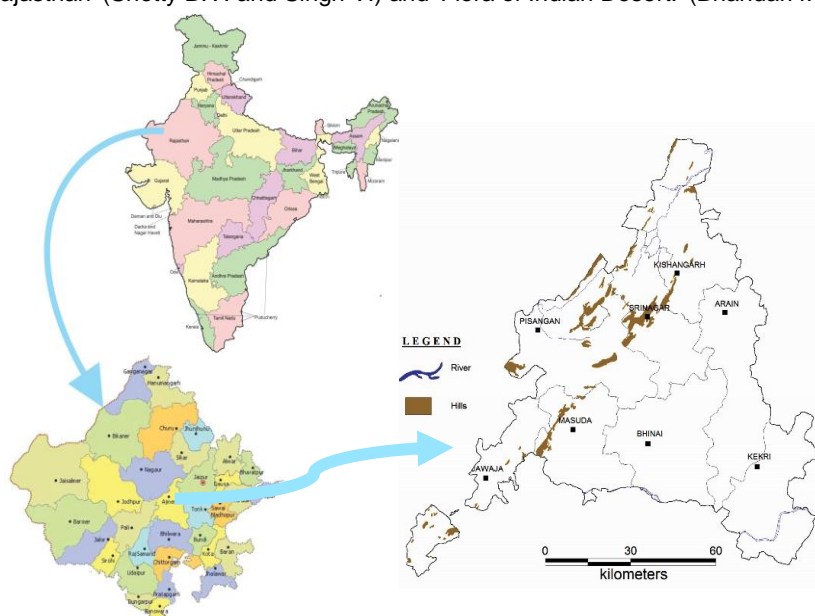
These early botanical explorations and publications laid the foundation for further research and conservation efforts related to the flora of Rajasthan. They also helped in identifying and preserving the rich botanical heritage of the Aravalli hills and surrounding areas.

### Aim of the Study

The primary objective of our study, is to document and record the traditional medicinal uses of plants by the local communities in the Aravalli hills. The Vegetation of the Aravalli hills of Ajmer district is dominated by the trees, shrubs, under shrubs and herbs. The current work attempt to explore the hilly tracts, valley associated with dry deciduous forests and grasslands. These plant species are economically and medicinally very important.

### Material and Methods

The investigation reveals flora of Aravalli hills of Ajmer district, special emphasis is given to the rare plants and plants of medicinal importance. A wide range of people was interviewed, first in groups and then individually. Local herbal healers and livestock healers were also contacted. Interviews were conducted with the flock persons, local Viadys, Hakeem and Medicine men. Generally, flockmen who know about medicinal plants do not want to share all information because they believe that medicinal plants will lose their medicinal properties forever if disclosed. Due to this reason, the data collected from the flock was an essential aspect of ethno-medico studies. The information which was provided to us was verbal, and it was cross-examined at different places. Description of Botanical names, medicinal uses, family, ethnobotanical importance were documented from the reliable sources such as tribes living in the area. The facts and information were further authenticated from different botanical literature such as 'Flora of Rajasthan' (Shetty B.V. and Singh V.) and 'Flora of Indian Desert.' (Bhandari M.M.).



**Map Showing Aravalli Hills of Ajmer District, Rajasthan**

### Observations and Results

The local tribe communities have specific civilizations, rituals, and living habits. They are more exposed to nature and practice herbal medication, which is readily available in the surrounding. A considerable amount of verbal information on the medicinal properties of plants is available with the local people and tribes live in this area. These people have inherited good knowledge about the cause and symptoms of shared human and veterinary ailments and local flora with its hidden values from their ancestors, which is passed from one generation to another. It was noticed that the villagers followed the medical advice of local Viadys, Hakeems and Medicine men. These Vaidyas and Hakeems are their domestic doctors who practice medicine at a specific point in community settlements. Plant diversity of Aravalli hills of Ajmer district is ecological and economical importance. The plants include families of flowering plants such as; Sapindaceae, Plumbaginaceae, Pedalaceae, Liliaceae, Vitaceae, Apocyanaceae, Labiatae, Convolvulaceae, Acanthaceae, Fabaceae, Menispermaceae, Cucurbitaceae etc. The vegetation is dominated by *Cardiospermum halicacabum*, *Dyerophytum indicum*, *Sisamum mulianum*, *Catharanthus pusilus*, *Anisomelus indica*, *Ocimum canum*, *Rivea hypocrateriformis*, *Evolvulus elsinoides*, *Andrographis echiniodes*, *Ipomoea muricata*, *Indigofera tinctoria*, *Crotolaria spectasilis* and *Corallocarpus epigaeus*.

**Table: List of some selected Plants of Aravalli Hills of Ajmer District with their Ethnomedicinal Importance**

S. No.	Botanical Name	Vernacular/ Common Name	Family	Plant Part Used	Ethnomedicinal value
1	<i>Andrographis echiniodes</i>	kulphat nath	Acanthaceae	plant extract	Antidiabetic
2	<i>Barlaria prionites</i>	Vazradanti	Acanthaceae	root powder	Tightens gums and teeth
3	<i>Cardiospermum halicacabum</i>	Balloon vine	Sapindaceae	Fruit and leaves	Act against constipation. Used in Arthritis
4	<i>Carysia carnosia infolia</i>	Jangali Angur bel	Vitaceae	leaves	Insecticide
5	<i>Catharanthus pusilus</i>	Bavli buti	Apocyanaceae	Whole plant extract	Hallucinogen causing plant
6	<i>Corallocarpus epigaeus</i>	Jangli Parval	Cucurbitaceae	fruits	anti-diabetic
7	<i>Clitoria ternatea</i>	Aparajita blue pea	Fabaceae	Leaf extract	Used to cure Swellings & pain in piles.
8	<i>Dipacadi sp</i>	Jangli kanda	Liliaceae	whole plant	insecticidal properties.
9	<i>Dyerophytum indicum</i>	Chitavar	Plumbaginaceae	Stem	used against scorpion bites
10	<i>Evolvulus elsinoides</i>	vishnu kanta/ blue shankh pushp	Convolvulaceae	whole plant	used to cure Alzheimer and used as brain tonic
11	<i>Ocimum canum</i>	Bapji	Labiatae	Seeds & leaves	used to cure cough and cold
12	<i>Pedaliium murex</i>	Badi Gokhru	Pedalaceae	Seeds	used to cure jaundice
13	<i>Rivea hypocrateriformis</i>	Nareli	Convolvulaceae	roots, leaves, seeds	snake bite, rheumatic pain, skin disease
14	<i>Sisamum mulayanum</i>	wild sisame	Pedalaceae	seeds	anti inflammatory
15	<i>Tinospora cordifolia</i>	Giloye vati	Menispermaceae	Stems Juice	Used as anti- viral
16	<i>Urginea indica</i>	Bhakarikondu/ kolikanda	Liliaceae	Root Tuber	Insecticidal properties, Rat killer

### Discussion and Conclusion

Ethnomedicinal knowledge is respected by local people and has been shown to be useful in the treatment of various diseases time to time. Traditional or folk-based plant medicines have shown great potential. The dominant families explored and identified are Pedalaceae, Vitaceae, Fabaceae, Convolvulaceae, Acanthaceae, Malvaceae, Cucurbitaceae. The most frequent plant species include *Crotolaria spectasilis*, *Crotolaria hebecarpa*, *Corallocarpus epigaeus*, *Tephrosia uniflora*. The plant community is characterised by: *Cardiospermum* – *Carysia* – *Ampelocissus*, association and *Tephrosia* – *Sisamum* – *Indigofera*, association and *Dipacadi* – *Urginea* – *Catharanthus* – *Leucas*, association.

During the study period, it was observed that increasing human population and interference in the protected areas are disturbing many endemic plant species. Another leading problem is livestock grazing, which leads to the destruction of habitat. Over grazing also leads to the destruction of various plant seedlings and restricted forest regeneration. This vital knowledge needs to be scientifically and systematically documented before it is lost due to rapid changes in the community on account of attaining modern civilization by the rural population.

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