

To investigate the traditional medical practices of several tribal communities in the desert of Rajasthan

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ABSTRACT

Ethnobotany is a unique area of natural science that deals with a variety of topics, including anthropology, archaeology, botany, ecology, economics and medical, cultural, religious, and a number of other fields of study. In recent times, there has been an uptick in the number of scientific investigations that are conducted in the aforementioned field of herbal medications and traditional remedies, which is indicative of the widespread interest that has recently been shown in the studies of herbal drugs and traditional remedies. This research emphasizes significant ethnobotanical information regarding the usage of plants by the tribal people of Rajasthan for a variety of purposes, including but not limited to food, fodder, medicine, lumber, fire-wood, tannin, dye, oil, fibre, alcohol, gum, resin, and so on. In many different ways, the human race may stand to profit by putting this traditional knowledge through the rigors of scientific investigation.

Key words: Ethnobotany, tribals, indigenous system, medicinal plants

Introduction

Tribal groups and ethnic races all over the globe each have their own unique culture, beliefs, taboos, totems, religious ceremonies, medicine, traditional habits of cuisines, agricultural techniques, and so on. This may be seen in aspects such as their culture, beliefs, and totems. As a result of the fact that these indigenous people make use of a substantial number of medicinal plants, both those that have been grown and those that have been collected from the wild, they have access to a substantial quantity of knowledge on medicinal plants. J. W. Harshberger first introduced the word "ethnobotany" in 1895 to refer to the study of plants that were used by indigenous peoples. From the Greek words "ethno" (meaning "study of people") and "botany" (meaning "study of

plants"). One of the subfields that falls under the umbrella of ethnobiology is known as ethnobotany. The study and assessment of plant-human connections across all stages, as well as the influence of plant environment on human civilization, are the primary focuses of this field. The state of Rajasthan is home to a diverse array of plant life, many of which are cultivated for their medical properties and contributing to the state's rich biodiversity.

One of the most populous and expansive states in India is Rajasthan. About 12.44 percent of the population is comprised of people who belong to tribes such as the Bhil, Bhil-Meena, Damor, Dhanka, Garasia, Kathodi, Kokna, Kolidhor, Naikara, Patelia, Meena, and Seharja and who live in places that lack even the most basic infrastructure services. The cultural history of Rajasthan is further enriched by the presence of many nomadic tribes, including the Banjara, Gadolia-Lohar, Kalbelia, Sikligar, Kanjar, Sansi, and Bagri. These racial and cultural groupings are not only dispersed far over the state but also maintain substantial lines of connection with one another. As a consequence of this, the vast majority of the ethnobotanical knowledge is transmitted from one group to the other.

Despite the fact that Bhandari (1990) and Sharma (1993) have developed a list of the flora of Rajasthan, there is a paucity of specific information on the therapeutic characteristics of the plants. The current research sheds light on the significance of ethno medicinal plants originating in a variety of Rajasthani geographic areas.

MATERIALS AND METHODS

A comprehensive investigation was carried out in each of Rajasthan's districts, and the findings pertaining to the use of medicinal substances were recorded. Standard monographs and flora were used in order to determine the identities of the plants (Bhandari, 1990; Sharma, 1993). On the basis of regular interviews with local doctors who practice indigenous systems of medicine, as well as with villagers, priests, and tribal people, information on the ethno medicinal properties of the plants was gathered. In spite of the fact that ethnobotany offers a variety of strategies for plant study, this article will only discuss the resources that are helpful in researching medicinal plants.

Archaeological resources

There is a vast collection of ancient archaeological sculptures to be found in India. These sculptures may be of great assistance in identifying the plants that were in use throughout the early stages of civilization. The bas reliefs on the entrances of the Great Stupa at Sanchi and the railing of Bharhuttupa date back to the first and second centuries B.C., respectively. Sithole (1976) listed around 40 different plants that were shown in the bas reliefs. The knowledge that may be gleaned about medicinal plants can also be found in our ancient texts. There is not a single genuine document of any type that dates back to the pre-Vedic era in this nation, with the exception of a few archaeological sculptures found at Mohenjo-Daro. However, the Rigveda and the Atharvaveda, which date back to between 2000 and 1000 B.C. and are the earliest Vedic literary materials we have, offer information that is useful on the medicinal plants that were used throughout that time period. Sharma (1968-1969) compiled a list of 248 plant-based medicines that are mostly described in the Atharvaveda and the Rigveda. A lexicon of medicinal plants that are discussed in the CharakSamhita, the SushurtaSamhita, and the AshtangaHridayam was written by Singh and Chunekar in 1972 and published by both authors. The enormous collection of all anti-tumor plants, referenced in historical texts and local folk medicine from all over the globe, that was done for the purpose of screening at the Cancer Chemotherapy National Service Center (CCNSC) is perhaps the most impressive example of the application of literature, at least in contemporary times. In recent times, bibliographies of Ayurvedic and Yunani treatises have been made available for public use.

Herbarium resources

In addition to being a valuable source of ethnobotanical information, herbarium sheets and field notes have also been found to be very useful. The most notable example of this kind of study is that conducted by Dr. Altschul, who investigated over 2.5 million plant specimens housed in the Harvard University Herbarium. From these specimens, he wrote 5,178 helpful comments on the pharmaceuticals and food value of the plants (Altschul, 1973).

Field resources

Plants have emerged as a seemingly endless supply of novel biodynamic chemicals with the potential to have medicinal utility. For the purpose of determining which plants may be harvested for their raw materials, an ethnobotanist asks members of the local tribes for information before doing field research. Table 1 has a listing of a variety of wild plants that are used to treat common diseases.

Ethnobotanical studies on some important herbal medicines of Rajasthan (India)

Even in India, the word "Ethnobotany" is not new. In 1935, Kirtikar and Basu declared that "the ancient Hindus should be given the credit for cultivating what is now called ethnobotany." This means that the phrase is not new even in India. Schultes defined ethnobotany as "the study of the relationship which exists between people of primitive societies and their plant environment" in 1962. There are a number of approaches that may be used while doing ethnobotanical research; among the approaches that are pertinent to the study of medicinal plants are the archaeological search in literature, herbaria, and field investigations. "Man, ever desirous of knowledge, has already explored many things, but more and greater still remains concealed; perhaps reserved for far distant generations, who shall proceed with the examination of their creator's work in remote countries and make many discoveries for the pleasure and convenience of everyday life."

The aforementioned remark from Linneaus is the one that is most pertinent to this review, which focuses on the connection between medicinal plants and the whole field of ethnobotany. Ethnobotany, in its whole, is practically a new area of inquiry, and if this subject is researched completely and methodically, it will provide findings of great importance to the likes of ethnologists, archaeologists, anthropologists, plant-geographers, and pharmacologists, amongst others. Ethnobotany is the study of plants and their uses in traditional cultures and societies. According to Choudhary et al. (2008), basic quantitative and experimental ethnobotany covers basic documentation as well as quantitative evaluations of usage and management as well as experimental assessments. It has recently come to light in many parts of the globe that many

traditional human communities, particularly those located in rural or tribal areas, still possess a significant amount of information about the uses of plants, including therapeutic applications. Ayurveda is a system of medicine that has been practiced in India for thousands of years. Not only does it treat a wide variety of common and persistent illnesses, but it also helps the body's vitality from the inside out.

In general, plants that grow in wastelands are referred to as weeds and are considered to be an undesired and undesirable type of plant. On the other hand, 'Ayurveda' suggests that "No plant of this world is useless," which is a very positive outlook. A wide variety of plants are utilized in the Ayurvedic medical system for the treatment of a variety of conditions, including Alzheimer's disease, AIDS, cancer, depression, nervous disorders, diabetes, rheumatism, leprosy, skin disease, urinary stone track diseases, hepatic diseases, digestive system diseases, malaria, and paralysis. According to estimates provided by the World Health Organization (Gupta et al., 2010), around eighty percent of the population in the majority of poor nations rely on herbal medicines for their basic health care requirements.

According to Singh and Pandey (1998), the 42 lakhs of tribal people that live in Rajasthan employ the therapeutic properties of around 610 types of plants. In Rajasthan, eighty percent of the population lives in rural regions, and most of them are unable to afford expensive medical care. They rely on the plant that surrounds them and make excellent use of it to satisfy their need for medical products. It was decided to perform a floristic assessment of ethnomedicinal plants that are found in the tribal region of Rajasthan in order to evaluate the potential of plant resources for contemporary therapies. The Aravalli hill range and other regions, especially the less hospitable regions of North-West Rajasthan, are home to a significant number of tree species that are used in traditional medicine. An effort has been made to define the tree species that are native to the area, and in-depth ethnobotanical research on those tree species are now being conducted. The Aravalli hills in the Mewar area of Rajasthan were the focus of a floristic study that resulted in the identification of 61 ethnomedicinal plant species belonging to a total of 38 families (Katewa et al., 2004; Katewa, 2009). Jain et al. (2007) reported on the ethnomedicinal applications of the biodiversity found in the Tadgarh-Raoli wildlife sanctuary in the Indian state of Rajasthan. It was

stated by Jain et al. (2009) that an ethnobotanical survey was conducted in the Sariska and Siliserh areas of the Alwar district. A categorized list of plant species, together with the plant part or parts that were employed and the manner of administration that was found to be beneficial in the management of various disorders, has been compiled (Table 2).

Tribal peoples whose livelihoods rely on the bounty of the forest (mostly the flora in their immediate surroundings) are the true guardians who have protected medicinal plants up to this point. Due to rapid deforestation brought on by excessive harvesting and exploitative trading of medicinal plants, the availability of medicinal plants in the arid and semi-arid regions of Rajasthan has been severely diminished (Srivastava, 1977; Singh and Pandey, 1980). Table 3 is a listing of some of the medicinally significant trees found in Rajasthan. According to Mishra and Kuamr (2001), traditional people have a strong familiarity with the therapeutic characteristics of the plants in their immediate environment, especially those that are beneficial to their own health. Table 5 contains a collection of folklore assertions together with the statistics that support them. Kheep, also known as *Leptadeniapyrotechnica*, is a shrub that may be found across western Rajasthan. Historically, people have consumed it and utilized it as medicine. (Singh and colleagues, 2007) According to Gupta and Kumar (2002), natural remedies and medications made from plants are now advocated for use in the management of diabetes. According to Menghani and Ojha (2010), the dry zone of Rajasthan is home to more than fifty plants that have the potential to treat diabetes. According to Sharma and Khandelwal (2010), during the hot months in the Dang area of Rajasthan, residents employ 36 different plant species as natural air conditioners. It was found necessary to conduct a comprehensive study of the southern region of Rajasthan, encompassing the districts of Chittorgarh, Udaipur, Banswara, and Dungarpur, in order to record the indigenous knowledge of medicinal plants used by the local tribal populations (Meena and Yadav, 2010).

Tribal peoples whose livelihoods rely on the bounty of the forest (mostly the flora in their immediate surroundings) are the true guardians who have protected medicinal plants up to this point. In the dry and semi-arid regions of Rajasthan, the availability of medicinal plants has considerably decreased as a result of rapid deforestation brought on by excessive harvesting of medical plants as well as the exploitative trading of these plants. In-situ conservation strategies are required in order to achieve sustainable development.

Table 1. Showing wild medicinal plants to cure various ailments

For wounds and as disinfectant	<i>Panicumanidotale, Artemisia maritima</i>
Bronchisl troubles	Bulbs of <i>Urgineaindica</i>
Blood purification and promoting lochial discharge	<i>Mollugocerviana</i>
Urinary troubles	<i>Glinuslotoides</i>
For swellings	Root paste of <i>Corallocarpusepigaeus</i> ,
As tonics	<i>Neuradaprocumbens</i> and <i>Colchiumluteum</i> , seeds of <i>Mimosa hamatar</i> root of <i>Asparagus recemosus</i>
Pneumonia	<i>Achyranthusaspera</i>
Diarrhoea	<i>Podophyllumhexandrun; Salvia aegyptiaca</i>
Chest pain	<i>Cuscutahyalina</i>
Rheumatism	<i>Carumcarvi, Inularacemosa</i>
Gastritis and fever	<i>Achilleamillaefolia</i>
Skin diseases	<i>Ranunculushirtellus</i>

Results and discussion

According to a research by the WHO, numerous illnesses that are prevalent in contemporary times are often caused by lifestyle choices. In India, medicinal plants play a significant role in the delivery of health care to around 80 percent of the country's population. Plants have been a significant source of precursors and products utilized in a range of sectors, including those of medicines, food, cosmetics, and agrochemicals. Plants have also played an essential role in environmental sustainability. Researchers are turning to the natural environment in order to find possible new goods as part of their ongoing hunt for novel medications. On the other hand,

traditional remedies are seeing a boom in popularity due to the fact that they have either a low or non-existent level of hazardous residue. At first, the herbs themselves are the primary component of traditional remedies. Folk medicine in India was the stepping stone that eventually led to the development of traditional medical practices like Ayurveda. Tribal people in the Indian state of Rajasthan have a long tradition of utilizing herbal medicine. In the following overview, important ethnobotanical knowledge regarding the usage of plants by the tribal people of Rajasthan is highlighted and discussed. It is important that the ethnomedicinal plants be preserved, hence efforts should be made to do so.

Table 2. Ethnomedicinal plants of Rajasthan, India

Name	Family	Local name	Official organ	Medicinal Properties	How administered	Ailment	Tribe
<i>A. indica</i>	Meliaceae	Neem	Leaves		Poultice locally	Snakebite and	Sahariya, Bhil
<i>C. procera</i>	Asclepiadaceae	Arka, Aak	Roots		Applied locally	Scorpion sting	Kalbelia, Garasia
<i>A. catechu</i>	Mimosaceae	Khair	Bark, flower tops	Antiinflammatory	Juice + asafoetida	Gonorrhoea	Sahariya
<i>T. undulata</i>	Bignoniaceae	Rohida	Bark, branch	Antiseptic	Chewed	Syphilis	Bhil, Garasia
<i>A. barbedensis</i>	Liliaceae	Gwarpatha	Leaves	-	Orally	Sexual vitality	Garasia, Bhil
<i>R. communis</i>	Euphorbiaceae	Erand	Seeds	Anti-fertility	Oil, locally	Birth control	Meena, Sahariya

Table 3.Some medicinally important trees of Rajasthan

Local name	Botanical name	Family	Part used	Medicinal uses
Kesudo	<i>Cassia occidentalis</i>	Caesalpiniaceae	Leaves	Skin diseases.
Amaltas	<i>Cassia fistula</i>	Caesalpiniaceae	Fruits	Laxative
Imli	<i>Tamarindus indica</i>	Caesalpiniaceae	Fruits	Laxative, general fever
Asundro	<i>Bauhinia racemosa</i>	Caesalpiniaceae	Stem, Leaf	Dysentery, malaria, headache.
Samrsro	<i>Delonix elata</i>	Caesalpiniaceae	Leaf	To alleviate flatulence and reumatism
Phalas	<i>Bueamonosperma</i>	Fabaceae	Gum, Seeds	Anthelmintic, blood pressure
Sisham	<i>Delbergiasisoo</i>	Fabaceae	Stem	Blood dysentery, Gonorrhoea
Karanj	<i>Derris indica</i>	Fabaceae	Whole plan	Ulcers, bleeding piles, Beri, Leucoderma, bronchitis.
Babul	<i>Accianilotica</i>	Mimosaceae	Leaf, stem	Toothache
Urajio	<i>Acadia leucophloea</i>	Mimosaceae	steam (bark)	Local swelling
Pardesia mli	<i>Pithecellohim</i>	Mimosaceae	Stem (bark)	Anermia
Khejari	<i>Prosopis cineraria</i>	Mimosaceae	Leaf, seed stem	Skin diseases.

Table 4. Showing folk-lore claims with their related data.

Botanical name and family	Tribal name of plant	Part used	Disease	Locality
<i>Alstoniascholaris</i> (Apocynaceae)	Chatinidaru	SB	Pain during delivery	Kumdi
<i>Atylosiascarabaeoides</i> (Fabaceae)	Gulsuni	RT	Rheumatism	Kotgarh
<i>Cassia fistula</i> (Fabaceae)	Hari	RT	Inflammation	Salai
<i>Ficusbenghalensis</i> (Moraceae)	Bargad	RT	Leucirrhoea	Baraiburu
<i>Cynodactylon</i> (Poaceae)	Dhoobghas	PL	Leucirrhoea	Baraiburu
<i>Sidaglutinosa</i> (Malvaceae)	Puri	LF	Inflammation	Kumdi
<i>Lygodiumflexsum</i> (Schizaeaceae)	Sorgajal	RH	Ear-ache	Baraiburu
<i>Rauwolfiaserpentina</i> (Apocynaceae)	Nagbel	RT	Rheumatism	Jate
<i>Vitexpeduncularis</i> (Verbenaceae)	Simjanga	RT	Jaundice	Kumdi
<i>Asparagus racemosus</i> (Liliaceae)	Utro	RT	Malaria	Kumdi

References

1. Altschul SVR (1973). Drugs and foods from little known plants, Harvard Univ. Press, Massachusetts.
2. Bhandari MM (1990). Flora of Indian Desert, (Scientific Publishers, Jodhpur).

3. Choudhary K, Singh M, Pillai U (2008). Ethnobotanical survey of Rajasthan-An Update. *Am.-Eurasian J. Bot.*, 1(2):38-45.
4. Choudhary M, Kumar A (2001). Ayurvedic Crude Drugs for cure of diseases of the digestive system. *Int. J. Mendel.*, 18(1-2):27-28.
5. Gupta A, Mishra AK, Bansal P, Kumar S, Sannd R, Gupta V, Goyal BM, Singh AK, Kumar A (2010). Antileprotic potential of ethno-medicinal herbs: A review. *Drug Invention Today*, 2(3):191-193.
6. Gupta R, Kumar A (2002). Searching for anti-diabetic agents among Ayurvedic crude drugs. *Int. J. Mendel.*, 19:9-10.
7. Harshberger JW (1896). The purpose of Ethnobotany. *Bot. Gaz.*, 21:146-158
8. Jain A, Katewa SS, Galav PK, Nag A (2007). Unrecorded ethnomedicinal uses of Biodiversity from Tadgarh-Raoli wild life sanctuary, Rajasthan, India. *Acta Botanica Yunnanica*, 29(3):337-344.
9. Jain SC, Jain R, Singh R (2009). Ethnobotanical Survey of Sariska and Siliserh regions from Alwar district of Rajasthan, India. *Ethnobotanical Leaflets*, 13: 171-188
10. Katewa SS, Chaudhary BL, Jain A (2004). Folk herbal medicines from tribal area of Rajasthan, India, 92(1):41-46.
11. Katewa SS (2009). Indigenous People and Forests: Perspectives of an Ethnobotanical study from Rajasthan (India)-Herbal Drugs: Ethnomedicine to Modern Medicine. Springer Berlin, pp.33-56.
12. Kirtikar KR, Basu BD (1935). *Indian Medicinal Plants*, 4 Vols.
13. L.M. Basu, Allahabad. Meena KL, Yadav BL (2010). Some traditional ethnomedicinal plants of southern Rajasthan. *Indian J. Trad. Knowl.*, 9(3):471-474.
14. Menghani E, Pareek A, Negi RS, Ojha CK (2010). Antidiabetic Potentials of various ethno-medicinal plants of Rajasthan. *Ethnomedicinal Leaflets*, 14:578-583.
15. Mishra A, Kumar A (2001). Studies on Ayurvedic crude drugs for the cure of urinary track stones. *Int. J. Mendel.*, 18(1-2):41-42.
16. Schultes RE (1962). The role of ethnobotanist in search for new medicinal plants, *Lloydia*, 25(4):257-266.

17. Sharma BD, Balakrishnan NP, Rao RR, Hajra PK (1993). Flora of India. Vol. I, B.S.I. Calcutta.
18. Sharma L, Khandelwal S (2010). Traditional uses of plants as cooling agents by the Tribal and Traditional communities of Dang region in Rajasthan, India. Ethnobotanical Leaflets, 14: 218-224.
19. Singh JP, Rathore VS, Beniwal RK (2007). Kheep (*Leptadenia pyrotechnica*): Potential Rangeland shrub of Western Rajasthan, India. Indian J. Plant Genet. Resour., 20(3).
20. Singh V, Pandey RP (1980). 'Medicinal plant lore of the tribes of East Rajasthan' J. Econ. Taxon. Bot., 1: 137-147.
21. Singh V, Pandey RP (1998). 'Ethnobotany of Rajasthan, India' Jodhpur: Scientific Publishers