

Some Ethnomedicinal Plants of Southern Aravalli Region of Rajasthan

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ABSTRACT: Rajasthan is the largest state of the Indian union, occupying an area of about 34.22 million ha. The state may be divided into many regions like Western arid zone, semi-arid zone, South-eastern zone, Chambal ravines, Aravalli zone and Eastern zone. The most striking geological feature of Rajasthan is the Aravalli mountain range-the one of the oldest folded mountain ranges in the world. Aravallis intersects Rajasthan state end to end diagonally covering about 30% area of the state. This mountain chain is extending from Champaner in Gujarat in the South-west to near Delhi in the North-east for a distance of about 692 km. Within Rajasthan, this range runs from Khed Brahma in the South-west to Khetri in the North-east for a length of about 550 km. The Aravallis are rich in medicinal plants. There are certain features which make southern Aravallis rich in the medicinal and other type of plants. High rainfall, presence of soil layer of varying depth on hill slopes, presence of perennial or semi-perennial streams and water courses, inaccessibility in many pockets owing to towering height, deep valleys and parallel running mountain chains, presence of 'nals' etc. are certain factors which makes ecological conditions of this zone congenial to variety of medicinal plants. Presence of 'nals' is very interesting feature of Aravallis, especially of southern Aravallis. Narrow valleys between two parallel running mountain chains are called nals in the local dialect. Sometimes a deep fold, present in a hill itself is also called nal. Essentially a nallah or stream or a river is always present in a nal. Stream of the nal may be perennial, seasonal or ephemeral. Most of streams in southern Rajasthan are supporting good riparian forests. Moisture regime becomes better in the nal area. Deposition of eroded soil is seen in the valleys which makes them fertile. A rich growth of plants is seen in fertile valleys. Nals and inner slopes are especially rich in medicinal plants. Aravallian forests and other habitats support many plants species of medicinal value in the state.

KEYWORDS: Southern Aravalli, ethnomedicinal, Rajasthan, plants, forests, stream, biodiversity, habitat

I.INTRODUCTION

These medicinal plants are used by the tribals of this area for treating various human diseases like cough, cold, inflammation, eye diseases, skin related diseases, gastric complaints, joint diseases, mumps, kidney disorders, blood disorders, asthma and tuberculosis. In this study, it was also observed that out of a total of 20 families,[27,28] only 4 families such as Asteraceae, Moringaceae, Combretaceae, and Papilionaceae contributed the highest number of species, the remaining 16 families contributed only one species each, used in the medicinal treatment. Out of 22 genera reported in this study, only *Anogeissus* and *Moringa* constitute 2 species each, while the remaining 20 genera comprised only single species. [1,2] In most of the observations, the medicines are given from a distinct single plant rather than the formulations prepared from the multiple plants. [25,26] The traditional healers of Rajasthan have a commendable knowledge of the medicinal virtues of plants that grow around them. This knowledge of traditional healing practices using wild plants is now fast disappearing due to modernisation and the tendency to discard their traditional lifestyle. There is an urgent need to study and document this precious knowledge for posterity. The traditional uses of plants as herbal remedies has further declined due to a scarcity of species, which is caused by multifarious human activity coupled with natural calamities like droughts and overgrazing by sheep, goats and other domestic animals in the state, thus threatening the diversity of the herbal medicines.[3,4] It is in this context that conservation and scientific verification of rare and lesser known medicinal plants assume greater significance.[23,24] Some worth recording species are *Milusa tomentosa*, *Cissampelos pariera*, *Cocculus hirsutus*, *C. pendulus*, *Tinospora cordifolia*, *Caesaria elliptica*, *Sida acuta*, *S. cordata*, *Bombax ceiba*, *Helicteres isora*, *Corchrus depressus*, *Tribulus terrestris*, *Aegle marmelos*, *Balanites aegyptiaca*, *Azadirachta indica*, *Moringa oleifera*, *Abrus precatorius*, *Butea monosperma*, *Desmodium gangeticum*, *Mucuna pruriens*, *Pongamia pinnata*, *Cassia fistula*, *Tamarindus indica*, *Acacia catechu*, *Terminalia bellerica*, *Syzygium cumini*, *Diplocyclos palmatus*, *Centella asiatica*, *Gardenia turgida*, *Eclipta alba*, *Madhuca indica*, *Nyctanthes arbor- tristis*, *Carissa spinarum*, *Hemidesmus indicus*, *Enicostemma hyssopifolium*, *Ehratia laevis*, *Evovulus alsinoides*, *Solanum nigrum*, *Withania somnifera*, *Martynia annua*, *Adhatoda zeylanica*, *Barlaria cristata*, *Ocimum canum*, *Boerhavia diffusa*, *Achyranthes aspera*, *Aristolochia bracteolata*, *A. indica*, *Peperomia pellucida*, *Euphorbia fusiformis*, *Curcuma amada*,

C. angustifolia, *C. aromatic*, *C. inodora*, *C. pseudomontana*, *Enset supterbum*, *Curculigo orchioides*, *Dioscorea bulbifera*, *D. hispida*, *D. pentaphylla*, *Aloe vera*, *Asparagus asiaticus*, *A. royaleanus*, *A racemosus*, *Chlorophytum laxum*, *C. breviscapum*, *C. orchidastrum*, *C. tuberosum*, *Pandanus fascicularis*, *Anogeissus* and *Moringa* species, etc. Tribals are using indigenous knowledge system to use different plants for various uses in their day-to day requirement. For different diseases, they use plant remedies through trial and error and process of experience over hundreds of years from generation to generation.[5,6]

II.DISCUSSION

Many species are used to treat ailments such as to control amenorrhoea, fertility, vigour & vitality, galactagogue, irregular menses, menstrual disorders, sexual diseases, swelling of testis, to check bleeding after delivery, to control birth rate using fresh plant at flowering and fruiting stage as well as dried plant material have been recorded. [29,30] They firmly believe in the traditional way of treatment of various ailments using medicinal plants rather than modern medical treatment. Ethnobotany deals with traditional and natural relationship between human societies and plants.[7,8] It has been recognized as a multidisciplinary science comprising many interesting and useful aspects of plant sciences, history, anthropology, culture and literature. Such a study in India was promoted by the pioneer work of Jain (1961) who is known as "Father of Indian Ethnobotany".[31,32] The term Ethnobotany was coined by John W. Harshberger (1895), a botanist in Pennsylvania University to study the existing relationship between the plants and the aboriginal communities. The aborigines of India are called tribes. The American Scientist Powers (1875) coined the term "aboriginal botany" in his description of plants used by Neeshenam Indians of the Bear River, California, for medicine, food, textile, fabrics, ornaments etc. According to Schultes (1962), Ethnobotany is "the study of relationship which exists between people of primitive societies and their plant environment"[9,10]. Ethnobotany brings to light numerous known or unknown uses of plants which have potential of wider usage. It has relevance also in conservation of genetic resources. It helps to search new sources of drugs, food, fodder and other life supporting species found in nature. [21,22] There has been an increase in recent years in medical Ethnobotany mainly because of the renewed interest in traditional herbal medicine, particularly the "tribal medicine". The revival of interest in natural drugs, especially those derived from plants, started in the last decades mainly because of the widespread belief that 'green medicines' are healthier and safer than the synthetic ones[11,12]

The distribution of soil types has been observed, during the course of systematic hydrogeological survey. The soil is mainly highly fertile black cotton soil made of magma of volcanoes in region. Following three categories of soils were observed:

- i. Red soil: This is iron rich sedimentary rock. Usually this type is poor growing soils, low in nutrients. Generally this soil is found one of the largest soil groups of India.
- ii. Black loam soil: This group of soil contains more nutrient, moisture and humus and rich in oxidized ions.
- iii. Clay loam soil: This type of soil is rich in clay particles with traces of metal oxides and organic matter and this soil is good for plant growth.[13]

During the rainy season, the area presents a glorious appearance of a green carpet of semi-xerophytes and meadow herbs which help in increasing the humus content of the soil and extend the vegetation to the barren areas. The life-cycle of most of the herbs comes to close before the winter sets in. The rainy season herbs are dominated by leguminous plants[19,20]

III.RESULTS

A large number of weeds grow with the crops. Most of them are well equipped for dissemination by wind, water, man and animals. In the winter season the highest weed density may be noted during the months of January and February. Tribal's are the oldest ethnological groups which live away from the civilized world, preferably in forest areas, follows primitive customs and occupation, have, common language and social culture and are economically dependent on each other. India has over 67 million of 227 ethnic groups.[12] In habiting in about 5000 forest villages or leading of numeric life in the forever. About people belonging to 550 tribal which communities representing 7.78 per cent of the total Population of the country, it is spread over 18.7% of total area of the country. They have typical problems of their own due to their socioeconomic status, environment, historical experiences and extent of political articulations, on account of these factors ethnically as well as economically and culturally, tribals are at different stages of socio-psychological orientation and politico-economic development, The total tribal population of Rajasthan state is 92,38,534 which is 13.5% percent of the total population of this state. [33,34] The tribal of Rajasthan constitute about 8.85% of the total population of tribal in India. There is a significant percentage (53%) of Meena tribal in Rajasthan.[17,18] The literacy of tribal is in



Rajasthan is 10.27% only. The Scheduled tribes have attained a decadal change of 43.6 % during the period are present. Several tribes inhabited in the state of Rajasthan viz. Bhils, Bhil-Meena, Meena, Damor, Garasia, Sehariya (major tribes), Dhanka, Kathodia, Patelia, Naikda, Koli Dhor, Kokna (minor tribes) Besides these, there are some nomadic, seminomadic and denotified communities also found, Nomadic communities are Sansi, Kanjar, Kalbelia Bauri, Bagri etc., whereas Semi-nomadic communities are Rebari, Jogi, Masani, Bhat etc. and denotified communities include Gadia Lohar "Banjara, which wander from place to place within the state as well as other parts of the country and have their own cultural, social and economic status.

Ethnobotany is the study of the relationship between plants and people. "Ethno" means study of people and "botany" stands for study of plants as described by Harshberger (1895) and Faulks (1958). Before the urbanization the people depended on the wild plants and around 15000 plant species were used by Indian tribes as per the records of Sanskrit literature (Baghel, 2002). Ethnobotany is considered as a branch of Ethnobiology. Ethnobotany deals with the complex relationships between (uses of) plants and cultures.[35,36] The focus of Ethnobotany is on how plants have been or are used, managed and perceived in human societies. It includes plants used for food, fodder, fuel, medicine, intoxication, cosmetics, dyeing, for building, tools, currency, clothing, rituals, agricultural and social life implements, etc. (Baghel, 2002; Sharma, 2006; Jain and Jain, 2012). Greece and Rome also contributed to the knowledge of ancient medicinal plants. Theophrastus, a pupil of Plato and Aristotle in about 340 B.C. wrote 'Historia Plantarum' describing some five hundred food and medicinal plants. Dioscorides, around the same period also wrote a book on medicinal plants. Roman botanists Pliny the Elder wrote 'Natural History' describing thousands of medicinal plants around 1st century A.D.[13]

IV. CONCLUSIONS

Since, plants have influenced the intellectual and the materlistic culture of man; their references have appeared in ballads, tales, songs, legends, myths, rhymes, riddles and proverbs since ancient times. 1960 onwards, there were several publications on herbal medicines. Schultes (1960) the father of Ethnobotany wrote, "Trapping our Heritage of ethnobotanical Lore" creates a great sense of urgency for the studies and researches into folklore medicine. Dr. Schultes who was Professor of Natural Science at Harvard (US) warns that we must not overlook the role played by the laymen in the past and in the present,[15,16] in the discovery of new drugs from plant sources a fact which was recognized by Charak and Sushruta long ago. Recently Gruyal et al., (2014) worked on the ethnomedicinal uses of plants in Philippiens; similarly Kabir et al., (2014) conducted a survey of ethnomedicinal plants used in Bangladesh. The major works on ethnotherapeutics uses of medicinal plants in Eastern Nigeria was carried out by Adachukwu and Yusuf (2014); whereas Falang et al., (2014) worked out on single plant *Garcinia kola* for its anti-pyretic activity in Nigeria.[13,14]

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