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Research Article

Indigenous Knowledge of Medicinal Plants in Tribal Community of Antri and Mewara Forest Range of Dungarpur District, Rajasthan

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ABSTRACT

Indigenous knowledge is a valuable knowledge that has been facilitated local ethno- groups of people for survival in all over the world. This knowledge is unique tactic knowledge that originates from the interaction between members of the community and the environment in which they live. It passes through elder generations to younger generations orally or verbally. Knowledge about ethno-medicinal plants and practices make it a survival strategy of livelihood in tribal community of Dungarpur district. However, Dungarpur district is enriched with Deciduous forest covered thus abundant of medicinal plants are identified by these group of people for healthcare purposes. This study is an attempt to identify the ethno-medicinal plants and documentations it with special case studies of the persons who authentically treat and cure community. The field survey was carried out during January 2022 to March 2022 and in July 2022 for identification of plants and know about their story. Outcomes from the field survey revealed that abundant of ethno-medicinal species are found in this area due to its Geographical and Climatic conditions. Since, lack of awareness, lesser interest of Government and local politicians and integument of modernity over younger generation this knowledge has been extinct gradually from the society. There should me need to conserve and protect their traditional legacy of survival with nature.

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INTRODUCTION:

Indigenous knowledge (IK), Traditional Knowledge (TK) or local knowledge is a specific knowledge created by ethno-community itself through its own culture and environment. This knowledge is more significant and reliable, scientifically there is a less coefficient of variation in this because it is built after a long empirical observations and physical experiences of generations over generations as an oral tradition. Traditional knowledge having numerous qualities of sustaining environment and livelihoods of ethno-groups of people. Ethno-medicinal practices are one of them through which indigenous people cure and heal tribal people and sustain their life using local resources.

The identification, documentation and development of medicinal plants as a sustainable livelihood source and conservation of its biodiversity is an increasing issue in all over developing countries of the world. In India there are numerous research work have been accomplished

concerning to documentation and traditional uses of medicinal plants in numerous ethical groups and Geographical area of India; North Eastern Himalaya, Western Ghats, Vindhyan, Satpura and Aravalli ranges and southern parts. ^[1,2,3,4] documented more than 100 species of plants and their medicinal values in the Tripuri tribes of Tripura state, Solan District of Himachal Pradesh, Chamoli District of Uttarakhand and Kalrayan hills of Villupuram district in Tamil Nadu.

Apart, from documentation and identifications of ethno-medicinal plants few research works have been completed to cure specific diseases in ethno-groups. ^[5,6] explicated about the medicinal species that curing reproductive health related disorders. ^[7,8] explored the species that used in treating skin disease by tribal's of Kupwara district, Jammu & Kashmir and in central Narmada Valley of Madhya Pradesh. ^[9] identified the species used to cure gastro intestinal problem in Jalam district of Uttar Pradesh. Studies related to treat

general seasonal diseases; asthma, cough, cold, fever, headache and poisonous bites have been accomplished by [10,3] in Kani tribal group of Western Ghats and Chamoli district of Uttarakhand.

At regional level there are several research studies have been completed relating to exploration and identification of rare threatened ethno-medicinal plants in Todgarh- Raoti wild life sanctuary, Hadoti and Pali Districts of Rajasthan by [11,12,13]. Few diseases; Kidney stone and urinary tract, Gynecological and sexuality curing concerning research have been done by researchers [14,15,16] in Aravalli region and Simalwara tehsil of Dungarpur District of Rajasthan.

However, limited research work have been done on Ethno-veterinary uses of medicinal plants to cure animals in various parts of India, Chitradurga district of Karnataka [17], in Paliyar's tribes of Sadhuragiri Hills in Tamil Nadu state [18] and Sariska Region of Rajasthan [19].

Nevertheless, the above literature review depicted that most of studies in India have been done to document and identify the rare species of medicinal plants that helps to cure people as local remedy in specific area of India. Whereas, the main research gap of this study is to depict special case studies of the *healers*, *Bhopas* and *Gunijans* who serves and treating local community through their ancestral knowledge. Depicting the case studies on ground level make this study special. Keep in mind all this aspect this study also trying to know how these ethno-medicinal practices sustain survival strategies in the tribal group of Dungarpur district.

Objectives: - Main objectives of the study are as follows:

- To Identify special ethno-medicinal species in forest ranges of Dungarpur District.
- To depict some case studies of persons who cure various ailments and serve community's people.
- To know how these people, sustain their livelihood through these practices.

Database and Methodology:

The study was accomplished based on primary and secondary database. To identify the indigenous knowledge of plant-based remedies from local people two forest ranges of district has been selected: Antri (Protected Forest Range) and Mewara (Reserved Forest Range). Both ranges having rich biodiversity of vegetations. For profound case studies of *Bhopas*, *Gunijan* and *Bhagats* information was collected through semi-structural interview that were held in the month of January, March and July months of 2022 with selected knowledgeable elders of these forest ranges. With the help of local community not only the plants have been identified but the local names of plant have also been recognized with the help of local community. Census data was used to depict the socio-economic status of the study area also.

Profile of the Study Area:

Dungarpur district lies between 23°20' to 24°10' North Latitude to 73°21'-74°23' East. Longitude at the southernmost tip of the Rajasthan. It is surrounded by Udaipur district at Northern side, Banswara district in the

East and the southern part shares boundary with Sabakantha and Panchmahal districts of Gujarat lying to the west.

The terrain of the District is highly undulating, characterized by low-lying hills of the *Aravali Range*. North and Eastern part landscape of district is rugged and wild but towards the southeast border, the features seem to merge in topography of Gujarat region. The eastern portion slopes down towards the Basin of *Mahi River*. Perennial and semi-perennial *Mahi* and *Som* rivers drain through the region. The soils of the district are mostly tending to gravel, shallow and poor nutritive quality.

Climatic conditions of the District lie in the subtropical region of the Northern hemisphere. The climate of district is sub-humid. It has dry climate with hot season milder than in the desert regions on Rajasthan. Average rainfall of the District is about 76.17 cm. Deciduous forest covered in the District. About 18 per cent of the total area of district covered with forest area. The percentage of covered forest area after independent was so high (about 50%) but due to the urbanization, industrialization and deforestation has decreased gradually.

Population structure wise more than 65 per cent of total population belong to schedule tribes. Bheel, Meena and Gurjar are the main tribal groups in the study area. The socio-economic profile of these tribals is totally dependent on traditional agriculture and traditional environmental system. District having inadequacy of natural resources, uncertainty of Monsoon, infertility of undulating land, deficient of well qualified human resource and other socio-economic factors district's people are unable to sustain their livelihood. Thus, they are engaged in some environment-based activities to survival.

RESULTS AND DISCUSSIONS:

Intense survey of Mewara and Antri forest ranges of the study area was done with the help of tribal community. About, twenty-nine plant species were identified belonging to more than fifteen families like Fabaceae, Mimosaceae, Meliaceae et.al (Table no. 1). These plants are used to cure human as well as animal health in order to treating skin disorders, fever, delivery pain, constipation problem, diarrhea, jaundice, cough, wounds, piles, urinary troubles, antiseptic and antidote to poisonous bite and pus formation. The ethno-medicinal plants listed here are frequently and easily accessible available in the research field. Most of them are the species, plants and fruits that are easily available in the study area. Most extensive part of plant is used in the preparation of medicines is the leaf, followed by root, seed, fruits and bark respectively. Due to easy availability of plants most of tribal families used it in the form of primary health care as well as for livelihoods. Through, filed survey some plants are identified which are used to cure some fatal diseases like; cancer, tuberculosis and kidney related problems. Nevertheless, it seems that elders who having familiar with ethno-medicinal plant characteristics should not want to share their knowledge with outsiders. Since, they have survival issue with it. They scared about it that if they share their ancestor's knowledge than the outsiders occupied their forest or cut down trees and encroach their property rights and make it valuable for market and business purposes.

Table: 1 List of Medicinal Plants Used by Tribals in Dungarpur District

Sr. No.	Botanical Name	Local Name	Family	Plant Part Uses	Medicinal Uses of Plants
1.	<i>Abrus Precatorius Linn</i>	ChirmuRatti	Fabaceae	Lf& Sd	Leaves are used for treat the constipation problem and seeds for abortion
2.	<i>Acacia nilotical</i>	Boriyo/Babul	Mimosaceae	Br, Lf, & Sd	Bark is used for paste; leaves paste on cut injury and seeds are given to animal for milk increasing.
3.	<i>Achyranthes apperia Linn.</i>	AndhiJhara	Amaranthaceae	Lf& Sd	The whole plant extract is given orally once in snakebite. Root decoction is used in stomach pain fever and cough. Seed are used for treatment of skin disease.
4.	<i>Aegle marmelos</i>	Billa	Rutaceae	Lf& Fr	Leaves are used in diabetes, diarrhea. Fruit pulp is used to cure diarrhea and use as tonic
5.	<i>Albizia lebeck</i>	Hayda/Siras	Fabaceae	Lf& Br	Leaf juice used to cure night blindness and for blood purify. Bark is used for cough and to snake bite.
6.	<i>Argemone Maxicana Linn.</i>	Dhaturi	Papaveraceae	Rd, Sd & L	Latex is used in Jaundice, skin disease and wound healing. Seed are purgative used in skin disease. Roots for anti-helmintic
7.	<i>Bombax ceiba Linn.</i>	Hemro/Semal	Malvaceae	Lf, Br & Fl	Leaves are used in anemia; bark is used in blood dysentery and diarrhea and used in rheumatic pain scorpion bite, snake bite leprosy and piles. Flower used for animal's milk increment
8.	<i>Butea monosperma (Lam.) Taubert</i>	Khankra	Fabaceae	G, Fr, Sd	Flower juice is given to children during fever and cold, Gum is used in diarrhea and dysentery. Seed powder used in scorpion sting; Fruit is used in irregular menstruation.
9.	<i>Calotropis procera (Ait) R. Br.</i>	Akra	Asclepiadaceae	Rt & Lf	Milky juice is used for treatment of leprosy, dropsy and rheumatic pain. Ash of the leaves mixed with sugar is used to cure asthma and bronchitis. Root paste is applied on cuts and wound.
10.	<i>Cassia fistula Linn.</i>	Amaltas	Fabaceae	Lf, Sd & Rt	Leaf juice is anti-fungal and anti-septic used in the treatment of ring worm and clearing cuts, wounds and rheumatic pain. Leaves are also useful in fever, cough and leprosy.
11.	<i>Chlorophytum tuberosum (Roxb.) Baker</i>	Dholimusali	Liliaceae	Rt	Dried fasciculate roots are used in the preparation of laddu with <i>Anogeissus latifolia</i> gum and are taken during winter season. Powder of root used
12.	<i>Curcuma longa (Linn.)</i>	Haladi	Zingiberaceae	Wp	It is used as a spice and coloring agent especially for ointments and cream. The whole plant is used in cough, skin diseases, diabetes and worm in affection and sometimes as blood purifier.
13.	<i>Datura metel Linn.</i>	Dhatura	Solanaceae	Lf& Sd	Leaves are used in treatment of as asthma and cough. Seed powder is used in fever skin diseases and rheumatism.
14.	<i>Diospyros melanoxylon Roxb.</i>	Timurwa	Ebenaceae	Fr & Rt	Fruits are astringent used in dysentery. Root paste used in scorpion sting. Flower is used as aphrodisiac and to cure leucorrhoea.
15.	<i>Euphorbia Triculii Linn.</i>	DandaThore	Euphorbiaceae	Lt	Latex is applied over the skin to cure eczema.
16.	<i>Euphorbia thymifolia Linn.</i>	Marodgaas	Euphorbiaceae	Lf& Rt	Leaves are used in against helminthes property and intestinal worm against children. Leaf juice is used in skin diseases, fever bronchial asthma and dysentery. Roots are used in leucorrhoea.
17.	<i>Ipomoea Carnea jace</i>	Kada-Akdiya	Convolvulaceae	If	Leaves paste is used in treatment of paralytic condition.
18.	<i>Lablab purpureus (L.) R. Sweet</i>	Semi/Walriyo	Fabaceae	Rt & Lf	Roots are used as anti-helminthes. Leaves are used in cough and skin disease.

19.	<i>Madhuca indica</i> J.F. Gmelin	Mahua/Mauri	Sapotaceae	Fl, Br & Sd	<i>Mohri</i> (local liqueur) mixed with turmeric powder is useful in cold, cough & bronchitis; flowers are eaten to increase lactation; leaves are applied as a poultice to eczema and bandage on the swelling or affected muscles; leaf ash is mixed with butter to make a dressing for wounds & Burns; seed oil extract is laxative and oil is applied to itchy skin.
20.	<i>Raphanus sativus</i> Linn.	Mura/Muli	Brassicaceae	Lf & Rt	Juice of roots and leaves are given for curing jaundice.
21.	<i>Ricinus communis</i> Linn.	Arandi	Euphorbiaceae	sd	Seeds oil is used as purgative, skin diseases, piles and rheumatism
22.	<i>Senna obtusifolia</i> (L.) H.S. Irwin and R.C. Barneby	poyeda	Fabaceae	Sd, Lf	Seeds are used in skin diseases ringworms and eczema. Leaves are used in constipation
23.	<i>Solanum Surattense</i> Burn f.	Kateli/ Bhurangni	Solanaceae	Wp, Fr	Fruit pulp is applied over gums and teeth in toothache and mouth unclear. Root extract is used in cough. Extract of whole plant is used hair falling
24.	<i>Tamarindus indica</i> Linn.	Amla/Imli	Fabaceae	Wp, St & Lf	The whole plant is used in treatment of diabetes asthma and diarrhea. Steam bark is used in fever. Leaves are used in piles and fruits are used in gastric trouble.
25.	<i>Tectonagrandis</i> Linn.	Haagda/Sagwan	lamiaceae	Lf, Br & Rt	Leaves are used to burning sensation and skin disease. Bark powder is used diabetes and ulcer. Roots is used in Kidney diseases and arthritis.
26.	<i>Thevetia Peruviana</i> (Pers.) Kschum	Kaner	Apocynaceae	Lf	Latex is put in dental cavities to cure toothache. Root juice is used for healing cut and wound.
27.	<i>Tinosporacordifolia</i> (Thumb) Miens	Giloy	Menispermaceae	Wp	Decoction of whole plant is given in rheumatism, fever, urinary trouble and cancer and heart problems.
28.	<i>Trogonella foenum</i> Linn.	Meethi/Menthi	Fabaceae	Sd, Lf	Seeds are used in rheumatism and diabetes
29.	<i>Zizyphus jujuba</i>	Bor/Ber	Rhamaceae	Fr, Lf, Br	Bark decoction is used for wounds. The fruits are used in ulcer, fever and abdominal pain. The leaves are used to cure the asthma fever and wound.

Abbreviations: - Lf: Leaves, Fr: Fruits, Br: Bark, St: Steam, Lt: Latex, G: Gum, Sd: Seeds, Wp: Whole Plant, Rt: Roots, Tb: Tuber, Fl: Flowers (Source: - Field Survey)

Case Studies of Bhagats Gunijans and Bhopas Who Treat Local People:

Some case studies of community people have discussed here which told the real story of these people who contribute their efforts and services to cure people.



Figure 1: Calotropis procera (Ankra)

Meethi Bai, 76, year old lives in Nadia village of Galiyakot Tehsil. She treats local people's fractured bones since last 30 years. She learned this technique from her mother when she was only 15 year of old. She used *Carissa carandus*

(Karonda) steam latex, *Calotropis procera* (Ankra) leaves and *Capparis decidua* (Ker) steam powder to treat fractured bone patient. She massages patient with the help of mustered oil and banded fractured part with the help of Ankra leaves. For complete relief she advises patients to come 3 or 4 times to her.

She treatd patients at her home. After treatment she takes very few charges. She treats people keep in mind that God gives her this skill and opportunity to serve people which her complete satisfaction of life.



Figure 2: Abrus precatorius (Chimmu Rati)

Attya Wadi 70 years old, live in Gada-Medatiya village of Chikhali Tehsil. He treating female with irregular menstruation problem with help of **Butea monosperma** (*Khankra*) seeds powder. He told that many young female tribal (Unmarried) comes to him to treat unwanted pregnancy or for abortion. He solved their problem with **Abrusprecatorius** plant's (*Chimmu Rati*) seeds. However, seed' have too much poisonous and are harmful for human body but he gives perfect dose with other elements (he did not explain too much about it). He



Figure 3: Butea monosperma (Khankra)

learned this traditional treatment method from his friend and now he indoctrinated this knowledge to her daughter for future. He told that female gives him so forth amount. Sometimes female from other communities also come to him and they offer him about 3000-5000 Rs. each for this kind of treatment.

Manoj Kumar Damore, 42 years old live in Mandali village of Simalwara block gives his services to cure local community for 12 years. He is having knowledge about treatment of common diseases such as cough, cold, fever, diarrhea, injuries and wounds. Treating people from the plants growing in their ambient environment like; *Caesariaelliptica* locally known as *Munjhal* used as medicinal plant to cure muscular strains and swelling. *Munjhal's* leaves dipped in the boiled water and removed oil is smeared on their surface and the



Figure 4: Caesalpinia bonduc (Katranj)

luke warm leaved are tied locally to cure muscular strains and swelling. *Caesalpinia bonduc* locally known as *Katranj* plant's seeds helps to medication in cold, common viral diseases and it's leaves Juice used to treatment for Jaundice.



Figure 5: Caesaria elliptica (Munjhal)

Kesar Bai, is yet another Gunijan, a practitioner of traditional herbal medicines. She lives in BiliyaBadgama village of Dungarpur tehsil of Antri forest range. She is an expert in treating a number of diseases, especially diseases related to women's gynecological issues. In an interview she told the researcher that she learnt her science from her maternal grandmother. She has such nimble fingers that by sheer touch she can find out where is the pain in a patient's body. She can cure dislocation of bones, particularly collar bone among children. She told that she is engaged in scared task of delivering people from pain.

Few case studies revealed that in aboriginal cultures the healing system is not just curing an ailment. They are essentially an attitude, a way of thinking and a philosophy of life that rests on the relationship between men, man and nature and man and his self. It has much to do with psyche of man.

CONCLUSION:

Inclusively it concluded that the tribal community have rich knowledge about the medicinal properties of the plants growing in their ambient environment. These plants are commonly used in the treatment of common diseases as a first add for tribal community. The area having rich biodiversity with plenty of medicinal plants due to its Geographical and climatic conditions. *Argemone Maxicana* Linn (*Dhaturi*), *Chlorophytum tuberosum* (Roxb.) Baker (*DholiMusli*), *Senna obtusifolia* (L.) HS. Irwin and R.C. Barneby (*Phuariya*) are some rare species which found only in this region.

District having numerous elder generation who having ample of knowledge about herbs and their significances for medical purposes. Elders treat communities' common diseases; cough, cold fever, fractures, poisonous bites and few chronical diseases; tuberculosis, arthurites etc. These healers having magic in their treatment who treat people physically as well as mentally. However, in some extent this traditional knowledge has been extinct form this society gradually. Survey indicate that the increasing population, urbanization and deforestation in the study area have been vanished this medicinal plant rapidly. At the same time lack of awareness concerning market values of medicinal herbs they are impotent to sustain their livelihood. Apart, from

this Modern young generation doesn't want to show interest in learning traditional knowledge from their ancestors. They argue that it is insufficient source of sustainability whereas whole things are expensive around them in present time.

Thus, it is necessary to erase the unawareness and enhance the knowledge about medicinal plants its value in the tribal community. Augment gardens, fields and forest area of ethnomedicinal plants for conserving these plants for future generations. To enhance employments at local level for tribal people it is obligatory that Government make policies and releases budget for medicinal plants cultivation and establishes small cottage industries for processing raw materials and produce market level products to sell-out them for survival. Under these circumstances people will be acquired alternative source of livelihood by the management of Government, NGO and local institutes.

In the end concluded that to achieve best results from medicinal plants regarding their production and conservation, it is necessary to include the tribal and local rural people in this system. However, it is well known that tribal people have knowledge of plant's locality and their medicinal importance additionally rather than others. Thus, it is required to safely develop and preserve medicinal plants to make them a part of livelihoods for tribal people.

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