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Indigenous knowledge of medicinal plants of the Araria and Purnia district of North Bihar

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Abstract- The purpose of the research on the indigenous knowledge of medicinal plants in the Araria and Purnia district of Bihar (India) was to uncover the local biodiversity of medicinal plants that can be used to treat health conditions rather than resorting to modern medicine. During the investigation, thirty-one different medicinal herbs were found. The evaluation of the effects that traditional practices have had on the flora in the area requires the documentation of such knowledge. It is not only crucial for preserving indigenous knowledge, but it is also essential for developing drugs and providing economic gain for rural areas in India.

Key words: Medicinal plants, indigenous knowledge, therapeutic use, local biodiversity, Purnia, Araria

INTRODUCTION

Plants have traditionally provided humans with everything they require, from the ability to live to the food they eat. Both food and medicine have been derived from various plants throughout history. Native medicinal plants are an invaluable resource for India and have been used traditionally for as long as anybody can remember. Most medicinal plants are typically gathered from the wild, where they develop in their natural environment.¹ In particular, the northeastern portion of India is the richest reservoir of medicinal wealth in India.² India boasts a diverse range of medicinal plants. Some ethno botanical survey studies have been done, in different district of Bihar, but they need to mention the ethno diversity of the district of Araria and

Purnia. When it comes to the study of traditional herbal knowledge, an ethno medical survey is accepted as the best approach. In the current research work, an attempt has been made to concentrate on and record the ethno medicinal plants native to Araria and Purnia.

Araria is situated in the northeastern corner of Bihar state having its international boundary with Nepal in the north. Supaul district is in the west, Madhepura district is in the southwest, Purnia districts is in the south and Kishanganj district is in the east. The district is situated between latitudes 25° 56'30" to 26° 35'15" north and longitude 87° 02'30" to 87° 42'45" east. The district falls in the Kosi and Mahananda sub-basin of Lower Ganga basin. Kosi and its tributaries with Kosi dhars drain the district, out of 9 blocks 6 blocks marked by the presence of Kosi dhars. The district experienced three different

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seasons viz., summer from March to early June, rainy from later part of June to September and winter from November to February. Mean daily ambient temperature in summer shoots upto 40°C and in winter mean daily ambient temperature falls down to 4°C. The relative humidity is generally above 70% in most part of the year. The district has a monotonous flat topography with gentle slope in the southeast direction. The regional topographic gradient in the northern part of the district is about 0.5 m/km and reduces to 0.2 m/km in the southern part. The two broad soil groups are available in the district.

- a) Recent Alluvium non-calcareous non-saline groups found over major part of the district. It is mostly light to medium textured and acid to neutral in nature. It also formed layered sediments having no horizontal differentiation.
- b) Recent Alluvium-Tarai soils found as a small patch in the northeast corner of the district. It is mixture of highly disturbed recent alluvium along the course of river. It is light to heavy textured and poorly drained.

Purnia and its surrounding lands lie in the sub-montane alluvial tract of the Gangetic Plain. The city however lies on the banks of numerous tributaries of the Kosi River. Two major rivers traverse Purnia city with the Kari Kosi River on the western end and the Saura river on the eastern end. The main city is situated between these two rivers. Purnia has a largely humid climate, with the highest level of rainfall in Bihar state and humidity

rising to above 70%. A cold season, from November to February, is followed by a hot season from March to June. The monsoon season begins in early June and lasts until September; 82% of its total annual rainfall falls during the monsoon season. January, the coldest month, has a mean daily minimum temperature of 5 to 10°C and a mean daily maximum of 20 to 25°C. Wind is typically light in the non-monsoon seasons but during the monsoon, storms and depressions originating in the Bay of Bengal cause heavy rain and strong winds. The alluvial soil, irrigated by the Kosi and Mahananda rivers.

MATERIALS & METHODS

A survey has been conducted during October 2021 to May 2022 in Araria and Purnia district of Bihar. The survey was done to study the common names, botanical names, families, the useful parts of the plant bodies, and the function. The local Ayurvedas practicers, villagers, and other experienced people were contacted for the purpose.

RESULTS

The investigation focused on plants used in traditional medicine, and as a consequence, 31 plant species belonging to different families were collected, identified, and catalogued. The information was supplied with the common name, botanical name, family name, parts used, and uses in traditional medicine for each plant.³

Table 1- Ethno-medicinal plants of Siwan, Bihar, India.

Sl. No.	Common name	Botanical name	Family	Parts used	Ethnomedicinal uses
1.	Satavar	<i>Asparagus racemosus</i> Wild.	Liliaceae	Whole plant	Piles, fever, wound, anti-toxic, weakness, cough, diarrhoea, headache, asthma, urinary disorder
2.	Punarnava	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Whole plant	Kidney stone, arthritis
3.	Siris	<i>Albizia lebbek</i> Benth	Fabaceae	Root, flowers, seeds, bark, stem, root, flowers	Scorpion bite, migraine, piles, hydrocele, toothache, hewound and cuts
4.	Neem	<i>Azadirachta indica</i> A. juss.	Maliaceae	Seed oil, bark, leaves, wood, fruit	Heart problems, eczema, arthritis, white discharge, ear-toothache, malaria, anti-toxic and anti-microbial, toothwash, chicken pox, blood purification, cosmetics
5.	Baans	<i>Bambusa arundinacea</i> L.	Poaceae	Whole plant	Wound healing, tuberculosis, bronchitis, Leprosy
6.	Gritkumari	<i>Aleo vera</i> Linn.	Liliaceae	Leaves	Cosmetics, burns, cutand wound, fracture, gastric, eye problem, Headache
7.	Harsringar	<i>Nyctanthes arbortritis</i> L.	Nyctaginaceae	Stem, flowers	Fracture, sciatica pain, nervous pain
8.	Mahua	<i>Madhuca latifolia</i> Gmel.	Sapotaceae	Whole plant	Anti-bacterial, painkiller, wine/liquor
9.	Vantulsa/ bantulsi	<i>Osmium basilicum</i> L.	Lamiaceae	Leaves, seeds, root,	Cough-cold, green tea, giddiness
10.	Chameli	<i>Jasminum grandiflorum</i> L.	Oleaceae	Leaves, root, flowers, oil	Ulcer, headache, mouthdisease, impotency, skin disease, ear problem, worm, fever, perfume

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11.	Ghamhaar	<i>Gmelina arborea</i> Roxb.	Verbenaceae	Root, flowers,fruit, bark, leaves, wood	Weakness, snake bite, anti-dote, cut-wound,
12.	Mehandi	<i>Lawsonia inermis</i> L.	Lythraceae	Seeds, leaves,root	Eye disorder, hair falland coloring, burn, jaundice, headache, stomach problem
13.	Papita	<i>Carica papaya</i> L.	Caricaceae	Leaves, fruit,seeds, latex	Liver enlargement, heart problem, piles, skin problem, cosmetics
14.	Amaltas	<i>Cassia fistula</i> L.	Fabaceae	Leaves, root,seeds, wood	Ring worm, wound, fever, leprosy, cough
15.	Karonda	<i>Carissa carandus</i> L.	Apocynaceae	Root, fruits	Anemia, constipation
16.	Chirchita	<i>Achyranthes aspera</i> L.	Amaranthaceae	Root, seeds, whole plant	Snake bite, stomachpain, fever, hydrophobia, skin problem, cough
17.	Gulmohar	<i>Delonix regia</i> Boj.	Fabaceae	Leaves, flowers, wood	Skin trouble, coloring,
18.	Aarandi	<i>Ricinus communis</i> L.	Euphorbiaceae	Leaves, seeds	Seed oil in purgative, piles, joint pain, hair fall, skin disease, head ache
19.	Arjun	<i>Terminalia arjuna</i> Roxb.	Combretaceae	Bark, leaves	Heart and liver disease
20.	Ber	<i>Zizyphus jujube</i> Miller.	Rhamnaceae	Fruits, leaves, bark, stem	Ulcer, fever, wound, abdominal pain, asthma,
21.	Aanar	<i>Punica grantum</i> L.	Punicaceae	Fruits, leaves, whole plant	heart problem, eye and ear disorder, tonic, migraine, jaundice, vomiting, piles, worms
22.	Karanj	<i>Pongamia pinnata</i> Mars L.	Fabaceae	Seeds, leaves	Leucoderma, anti- parasitic, malaria
23.	Aanwla	<i>Emblica officinalis</i> Gaertn.	Euphorbiaceae	Seeds, fruits, leaves, bark	Constipation, arthritis, fever, itching, digestive, hair fall, diabetes, eye and skin problem
24.	Peepal	<i>Ficus religiosa</i> L.	Moraceae	Whole plants, latex	Eczema, toothache, jaundice, leucorrhoea, cut wound, earache, cough and cold, stomach pain,
25.	Dudhi	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Root, leaves	Cough, dysentery, Anti -asthmatic, milk secretion,
26.	Gular	<i>Ficus glomerata</i> Roxb.	Moraceae	Fruits, milky latex	Diabetes, asthma, piles, urinary problem
27.	Shisham	<i>Dalbergia sissoo</i> Roxb.	Fabaceae	Oil, Whole plant	Skin disorder, toothache, eye aliments, burning sensation,
28.	Dhatura	<i>Dhatura stramonium</i> L.	Solanaceae	Whole plant	Eye problem, asthma, arthritis, headache, male impotency,
29.	Giloy	<i>Tinospora cordifolia</i> Wild.	Menispermaceae	Whole plant	Piles, eye problem, fiver, jaundice, arthritis
30.	Adusa	<i>Adhatoda vasica</i> Linn.	Acanthaceae	Whole plant	Asthma, urinary problem, piles, cough,
31.	Kalmegh	<i>Andrograpics paniculata</i>		Whole plant	Stone, Blood purifier

DISCUSSION

From the ancient time it is clearly evident that the use of plants were used in treatment of different human diseases.^{4,5} Table 1 contains the common names, botanical names, family names, parts used, and medicinal properties of the 31 medicinally important plant species that were collected from the surrounding Araria and Purnia district for this study. These plants belong to 21 different families. The family Fabaceae contains the most known species, followed by the family Euphorbiaceae, which has three known species. Following that are the families Moraceae, Liliaceae, and Nyctanginaceae, each containing two known species. The remaining 16 families each include a single available species. These medicinal herbs have a long history of use as traditional treatments for a wide variety of illnesses, including piles, fever, wounds, anti-toxic,

weakness, cough, diarrhoea, headaches, asthma, urinary disorder, jaundice, arthritis, skin disorder, toothache, heart disease, and liver disease. Leaves, fruits, flowers, stems, roots and seeds are typical examples of parts that are utilized. In traditional medicine, these plants have typically been consumed in the form of juice, paste, powder, decoction, extract, or raw form. They have also been utilized in other ways.

CONCLUSION

According to the findings of this study, the knowledge and utilization of herbal medicine for the treatment of various illnesses among people is still a significant component of their daily lives and cultural practices. The

fact that this data was gathered from local healers demonstrates a solid understanding of traditional medicine. The findings of this study prove that medicinal plants are still an essential component of the healthcare system utilized by the residents of the Siwan area in the state of Bihar. To make the most of a region's natural resources, it is necessary to research that region's indigenous knowledge. In addition, completing clinical investigations can achieve further scientific validity of these medications.

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