

Traditional practices of ethnomedicinal plants among forest-dependent communities of Paschim Medinipur, West Bengal

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Keywords: Indigenous knowledge, Ethnic community, Medicinal plants, Ailments.

Abstract:

Since ancient times, people have used plants to treat illnesses and soothe physical suffering. Plant-based medicines have a special place in the world, even though allopathic pharmaceuticals have sparked a revolution. Due to illiteracy, traditional applications of plants as medicine have not been fully documented and have instead been passed down through families as a domestic custom. This study aims to retrieve the indigenous knowledge of herbal plants from tribals of West Medinipur district by conducting focus group discussions in ‘Jabola, Amlasol, Daldali, Kakrajhore, Jujardhara and Mayurjharna villages’ and exercising semi-structured questionnaire to the traditional herbal practitioners. The common ailments/diseases the locals face include Jaundice, Typhoid, Dysentery, Digestive disorder, Leucorrhoea, Malaria, Snake bite, Headache, Body pain etc. Through extensive interviews with the traditional practitioner (*Vaidya and Ojhas*), it was revealed that the most frequently used medicinal plants for the treatment of various diseases-*Uraria lagopoides*, *Smilax ovalifolia*, *Emblia officinalis*, *Asparagus racemosus*, *Curculigo orchioides*, *Dregea volubilis*, *Ziziphus nummularia*, *Cissus adnata*. Among these plants, the first two are highly exploited commercial plants with high medicinal values of multipurpose usage. Different parts of *Uraria lagopoides* are used for the treatment of various ailments like leprosy, wound healing, cough and cold, mental disorder, and *harhiya*, as reported by the respondents. The traditional uses of *Asperagus racemosus* roots are used to cure bloody urine and blood diarrhoea. Additionally, they treat piles with rhizomes and utilise leaves to treat night blindness. The area’s Santhal, Munda, and Lodha populations indicated that the additional uses included treating general discomfort, stomach pain, waist pain, leucorrhoea, and constipation. Learning is made feasible by recalling the lifetime experiences of the ethnic community and herbal practitioners. Exploration and rigorous documenting of indigenous knowledge of medicinal plants are necessary.

Introduction:

Plants have been used for medicinal purposes long before the prehistoric period. There is evidence that people in European and Mediterranean cultures, as well as Indian Vaid and Unani Hakims, have been using plants as medicine for almost 4000 years. Herbal medicine was practised in indigenous societies throughout history, including Rome, Egypt, Iran, Africa, and

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the Americas. On the other hand, others built traditional medical systems such as Unani, Ayurveda, and Chinese Medicine, all of which make systematic use of herbal remedies.

The Indian forest is the primary reservoir of a huge number of plants with medicinal and aromatic properties. These plants are primarily collected as raw materials for use in the production of pharmaceuticals and aromatic products. The AYUSH medical systems in India have documented around 8,000 different herbal treatments. According to a recent estimate by the World Health Organization (WHO), over eighty percent of people all over the world rely on herbal medicines for some part of their primary health care need. The World Health Organization estimates that there are around 21,000 plant species that have the potential to be used in therapeutic applications.

According to the currently available data, more than three quarters of the globe's population relies mostly on plants and extracts from plants for their healthcare requirements. More than thirty percent of all plant species have been utilised to prepare therapeutic remedies (Erfani, 2021; Kar et al., 2022). It is predicted that plant pharmaceuticals make up as much as 25% of the total drugs in established countries like the United States but that their share can reach as high as 80% in rapidly emerging countries like India and China. Therefore, the economic significance of medicinal plants is significantly higher for some nations, like India, than for the rest of the world (Banerjee et al., 2014; Sarkar, 2017; Sanyal et al., 2018; Kundu, 2022). These nations supply approximately one-third of the plants utilised in contemporary medical practices, and the indigenous medical practises of these nations are crucial to the functioning of the healthcare infrastructure serving rural areas.

It is generally agreed that treatment with medicinal plants is relatively safe because there are either none or very few adverse effects. Herbal remedies are safe and effective for people of any age or gender, which is one of their most appealing qualities (Maiti et al., 2010, 2013; Acharya et al., 2021). Traditional medicine practitioners can provide highly effective recipes for treating common ailments such as diarrhoea, constipation, hypertension, low sperm count, dysentery and weak penile erection, piles, coated tongue, menstrual disorders, bronchial asthma, leucorrhoea, and fevers (Acharya, 2016; Sarkar et al., 2017; Bhattacharjee, 2021;).

Objectives:

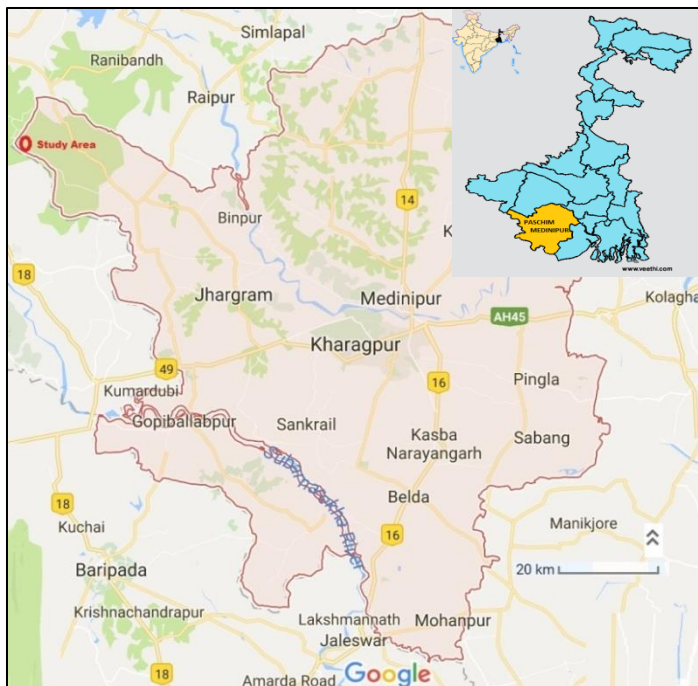
The major objectives of this paper include

- Listing of most common ailments and the surrounding tribes commonly employ therapeutic plants
- Identification of traditional herbal practitioners in the locality

Exploration of inherited knowledge on the usage of medicinal plants, especially on *Asperagus racemosus* and *Uraria lagopoides*

Study Area:

The study area was selected based on the availability of multiple ethnic communities who still practice inherited traditional treatment of various ailments or diseases as primary treatment methods. The access to the natural treasure of medicinal plants i.e., proximity to natural forests was another criterion. For the purpose of gathering ethnomedical data, six villages in the West Medinipur district of Amlasol—Daldali, Kakrajhore, Jabola, Jujardhara, and Mayurjharna—were chosen.



Map 1: Map of study area, West Bengal

Methodology:

A series of Focused Group Discussions (FGD) meetings were held in the villages of Kakrajhore, Amlasol, Daldali, Jabola, Jujardhara, and Mayurjharna to list common illnesses and frequently used medicinal plants by the local tribes, which included the Santhal, Munda, and Lodha tribal communities.

The organised meeting's participants were used to identify local herbalists such as vaidyas and ojhas, as well as by asking for referrals from them and the nearby peasants. To elicit hereditary knowledge on the use of medicinal plants from the respondents, personal interviews were conducted while utilising a semi-structured questionnaire. While conducting in-person interviews, the focus was placed on learning as much as possible on the use of *Asperagus racemosus* (Satamul) and *Uraria lagopoides* (Shiv-Jata).

PASW Statistics 18.0, a statistical programme, was used to analyse both qualitative and quantitative data. According to the following formula (Phillips and Gentry, 1993), the usage value was employed to assess the relative significance of the plant species that were utilised:

$$UV_i = \sum U_i / N_i$$

UV_i is the use value of a given species; U_i denotes the quantity of use reports submitted by each informant for a certain plant species; and N_i denotes the total number of informants. A plant with a high use value has a lot of relevant reports, which suggests that it is significant, whereas a plant with a low use value (which is close to zero) has few reports concerning its usage (Suleiman, 2015).

Eighty percent of respondents were male and twenty percent were female, and the respondents were separated into two age groups: those under 50 years old (17%) and those over

50 years old (83%). Older people were better informed as the number of followers in the current generation is declining. There is masculine domination as well. However, women were more involved in gynaecological and obstetrical disorders since information flow was a problem.

Table 1. Composition of respondents.

Informants	Age Group		Total Informants
	≤ 50 Years	> 50 Years	
Male	30	135	165
Female	5	36	41
Total	35	171	206

Malaria, diarrhoea, jaundice, typhoid, dysentery, digestive trouble, leucorrhoea, snake bite, headache, body discomfort, etc. are some of the prevalent illnesses/diseases experienced by the locals. More than 80% of families in the study region live in poverty. Malnutrition makes the local population more vulnerable to several illnesses, particularly those spread by vectors. Snake bite is another significant issue because the majority of victims occur while harvesting Babui grass, a significant cash crop used to make rope. According to the FGD, locals were able to identify some of the plants used to treat the most prevalent diseases, as shown in the accompanying table.

Table 2. Major ailments and associated medicinal plants

Sl. No.	Diseases/ ailments	Medicinal plants used against the disease/ ailments		
		Primary findings	Standard literature	In Ayurveda
1.	Malaria	Kalmegh (<i>Andrographis paniculata</i> Burm.F.Wall. ex Nees, Kurchi (<i>Holarrhena pubescens</i> Buch.-Ham.Wall. Ex G. Don.))	<i>Cassia abbreviata</i> Oliv., <i>Aristolochia albida</i> Duch., <i>Toddalia asiatica</i> (L.) Lam.	<i>Alstonia scholaris</i> , <i>Coptis teeta</i> , <i>Crotolaria occulta</i> , <i>Ocimum sanctum</i> , <i>Polygala persicariaefolia</i> , <i>Vitex peduncularis</i>
2.	Diarrhoea	Aam (<i>Mangifera indica</i> L.), Jam (<i>Syzygium cumini</i> (L.) Skeels.), Sal (<i>Shorea robusta</i> Roth.)	<i>Helicteres isora</i> Linn., <i>Woodfordia fruticosa</i> Kurz.	<i>Emblica officinalis</i> Gaertn., <i>Terminalia bellirica</i> (Gaertn.) Roxb., <i>Woodfordia fruticosa</i> Kurz.
3.	Jaundice	Arhar leaf [<i>Cajanus cajan</i> (L.) Millsp.]	<i>Flacourtia indica</i> (Burm.f.) Merr	<i>Flacourtia indica</i> (Burm.f.) Merr., <i>Curculigo orchoides</i> Gaertn.

4.	Typhoid	Gurman (<i>Ceriscoides turgida</i> Roxb.)	<i>Ceriscoides turgida</i> Roxb.	<i>Holarrhena pubescens</i> (Buch.-Ham.) Wall. Ex G. Don.
5.	Dysentery	Satamul (<i>Asperagus racemosus</i>)	<i>Helicteres isora</i> Linn., <i>Woodfordia fruticosa</i> Kurz	<i>Embllica officinalis</i> Gaertn, <i>Azanza lampas</i> (Cav.) Alef, <i>Helicteres isora</i> Linn. <i>Woodfordia fruticosa</i> Kurz
6.	Wound healing	Mahadevjata/Shivjata [<i>Uraria lagopodoides</i> (L.) Dc.]	<i>Uraria lagopodoides</i>	<i>Vernonia anthelmintica</i> (L.) Willd.
7.	Leucorrhoea	Satamul (<i>Asperagus racemosus</i>), Ramdatan (<i>Smilax ovalifolia</i>),	<i>Smilax ovalifolia</i> Roxb.	<i>Azanza lampas</i> (Cav.) Alef
8.	Snake bite	Sarpagandha (<i>Rauvolfia serpentine</i> (L.) Benth. Ex Kurz).	<i>Croton roxburghii</i> Balakr	<i>Rauvolfia serpentine</i>
9.	Headache	Kundri (<i>Coccinia indica</i>), Bichuti fruit (<i>Tragia involucrate</i> L.), Mahadevjata/shivjata (<i>Uraria lagopodoides</i> (L.) DC.)	<i>Ceriscoides turgida</i> (Roxb.) Tirvengadam	<i>Ceriscoides turgida</i> (Roxb.) Tirvengadam
10.	Body pain	Satamul (<i>Asperagus racemosus</i>), Putla (<i>Croton roxburghii</i> Balakr), Lodh bark (<i>Symplocos racemosa</i> Roxb.)	<i>Meyna laxiflora</i> Robyns, <i>Dioscorea esculenta</i> Burkill	<i>Grewia helicterifolia</i> Wall. Ex G. Don. The findings from books and journals are presented under the heading "Standard Literature" in the second column of the above table, while the FGD results are shown in the first column under the heading "Primary Findings," with an Ayurvedic reference in the last column. Similar

				approaches can be employed to treat many illnesses, and a few novel species have also been discovered and are being used locally.
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Table 3. List of Medicinal Plant Species Inventorized with their Use Value (UV)

Sl. No.	Local Name	Scientific Name	Family	Habit	Parts Used and Uses	UV
1.	Amloki	<i>Emblca officinalis</i> Gaertn.	Phyllanthaceae	Medium Sized Tree	Fruits: Constipation and dyspepsia	1.74
2.	Bhui kul	<i>Ziziphus nummularia</i> (Burm.f.) Wight & Walk.-Arn.	Rhamnaceae	Bushy Shrub	Leaves: Used in bleeding gums. Fruits: Used as appetizer	1.49
3.	Chitpunji	<i>Dregea volubilis</i> (L. f.) Benth.	Asclepiadaceae	Vine	Root and tender stalks— Used in colds, sinusitis and biliousness.	1.61

4.	Dudhilata	<i>Ichnocarpus frutescens</i> R. Br..	Apocynaceae	Twining Shrub	Leaves: Paste applied to sore in between fingers; fresh latex applied to treat nail disease; with mustard oil used to treat scabies.	1.29
5.	Paniya Lata	<i>Cissus adnata</i> Roxb.	Vitaceae	Climber	Tubers: Used for blood purifying. Roots: Powdered and heated root applied to cuts and fractures	1.18
6.	Putla	<i>Croton roxburghii</i> Balakr.	Euphorbiaceae	Medium Sized Tree	Root: In snake bite Fruit/Seed: purgative in snake bite.	1.68
7.	Ram Datan	<i>Smilax ovalifolia</i> Roxb.	Smilacaceae	Climbing Shrub	Roots: Used to treat abnormal discharges of semen and white discharge of semen.	1.84

8.	Satamul	<i>Asparagus racemosus</i> Wild.	Asparagaceae	Shrub	Tuber roots: Used in blood dysentery, bloody urine, white discharge of female Leaves: Used to treat night	1.82
9.	Shivjata	<i>Uraria lagopoides</i> (L.) Dc.	Fabaceae	Shrub	Tuber roots: Used to treat intermittent fever, chest inflammation, treatment of dysentery and diarrhoea	1.85
10.	Talmuli	<i>Curculigo orchitoides</i> Gaertn.	Amaryllidaceae	Herb	Rhizomes: Used to treat piles and in body-cooling	1.74

The tribal society uses the entire Mahadevjata plant (*Uraria lagopoides*) to treat a variety of illnesses. They use the root of this plant to make hariya, a beverage they consume to keep their bodies cool, especially during the summer. The root and leaf of this plant have wound-healing properties. The root is also used to treat leucorrhoea and is given to patients with mental disorders to help them. The entire plant is also used to treat cough and colds.

Conclusion:

Results show that people living around the Kakrajhore forest area of West Medinipur District hold valuable knowledge of the uses of plant resources and that some plants represent an important component of the local livelihood strategies. However, more in-depth investigations are required for some plants on their possible pharmacological activity. Though the Kakrajhore Forest area is rich in medicinal plant resources but the habitat of most of the plant species have shrunk and are becoming endangered due to the expansion of the human population and

environmental degradation primarily due to heavy live stock grazing, uncontrolled and unscientific harvest of species etc. The better conservation of natural resources can be done by inclusion of section on the plant conservation especially of rare and endangered plants, in the wildlife protection act, promotion of community based conservation, *in-situ* conservation through the establishments of nature reserves, *ex-situ* conservation through tissue culture, developing cultivation technologies and nurseries of medicinal plants and conducting of regular training on the procedure of medicinal plants collection, awareness among the local people, traders and real stake holders. Therefore a sustainable management approach and proper conservation strategy for the area is recommended by local communities and administration involvement.

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