JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

AN ETHNOBOTANICAL INVESTIGATION ON PHYTOREMEDIES USED BY THE TRIBALS OF DISTRICT UDHAMPUR JAMMU AND KASHMIR INDIA

Man Mohan Sharma[1], Kuldeep kumar[2], Mohit kumar[3], Nitin kumar katoch[4], Vinod kumar Sharma[5]

Research Scholar at Department of Botany RIMT University,

Research Scholar at Department of Chemistry Barkatullah University,

Masters at Department of Biotechnology Chandigarh University,

Curator at Department of Botany Jammu University,

Assistant Professor at Lovely Professional University

Abstract:

Ecological diversity is great in the tehsil of Udhampur in the state of J&K because to its varied topography. At altitudes more than 7,000 feet, you'll find a rich diversity of plant life, from subtropical forests to alpine meadows. The purpose of this investigation was to document the local medicinal plant use practises. The survey revealed a total of 45 plant species, distributed among 31 families and 44 genera. With four taxa, the Lamiaceae family was the most prevalent, followed by the Fabaceae family with three. An inventory of plants was compiled by consulting their botanical names, families, local names, parts used, and traditional therapeutic applications. Herbs, shrubs, and trees were the three main groups for the cultivated plants. In terms of ethnomedicinal usefulness, herbs were the least prevalent plant kind, followed by trees and shrubs.

Keywords: Udhampur, Ethno-medicinal, Taxa, Lamiaceae, Fabaceae

1. Introduction

Edible wild plants may be found by foraging, some of which have never been cultivated or domesticated. These plants are edible and may be found in many different ecosystems (**1 Cheng, Z., Lu, X., Lin, F., Naeem, A., & Long, C**. 2022), Some WEPs may be found in a wide range of environments, such as forests and farms, while others thrive in human-altered habitats like byways and wastelands. Many different peoples and communities across the globe rely on wild plants for both subsistence and economic reasons. (**Ahirwar, R.K.2022).** A large portion of the people's food and income comes from these plants. Despite the fact that over 7,000 WEPs have been used by humans, (**Kareti, S. R**., Haran, R. H., & **Rajpoot, V. S**.2022), Many plants and materials necessary for human sustenance have not been discovered (4) The authors (Das, B. D., Paudel, N., Paudel, M., Khadka,

M. K., Dhakal, S., and Amrit, K. C. 2021) all contributed to this study. WEPs have not been eradicated even though agriculture is still the primary source of income for the vast majority of nations. An FAO analysis found that this number includes at least a billion people. they consume more wild foods (**Damle, S**., **Kadirvelu**, **S., & Joshi, M.** 2022), The goal is to end poverty, guarantee food supplies, expand agricultural methods, and create new sources of revenue. (**Gahamanyi**, **N**.*et al.*,2021,**Shrestha-P.M**.*etal.*,2021., **Thakur D**,2020), When it comes to security, WEPs are essential. In addition, they are effective in combating hunger. Due to the high quantities of minerals and vitamins present in different WEPs, this plant may provide as a safety net for local communities during times of food shortage or famine (**Mudau, T**.E.*et al.*,2020, **Lawal, I. O** *et al*.,2022 **Khanum, H**.*et al.*,2022, **Nakaziba, R**.*et al*.,2021).

WEPs have historically served an important function in rural and ethnic Indian society, whether in the realms of culture, religion, or healthcare. Scientists all around India have studied WEPs extensively.

(**Sebastian.MK**,2021,**Jan.R**.*et al.*,2022,**Nandanakunjidam.S**.2020) elucidate how India's varied topographies and climates contribute to the country's rich plant life and biodiversity. India's wide range of climates and ecosystems means a rich variety of plant life. **Sahoo, H., & Mahalik.G**.2020 and **Suresh Kumar** *et al.*,2019) have provided an in-depth synopsis of the WEP species that may be discovered in India. Few studies have been conducted.(**Atal.CK**.*etal*.,2020,**Rashid.A**.*et al.*,2020) to do with the use of WEPs in the state of J&K. The district's villages are separated from the district capital of Udhampur, Jammu division of J&K state, in part due to the region's rugged topography.

Since the dawn of time, the local rural population has relied mostly on wild plants for sustenance. This is the situation because of insufficient core service provision, cultural and religious inclinations, and a lack of necessary infrastructure. There is a great degree of efficiency in using wild plants, and doing so is not just easy or cheap. The vast majority of the local population works in agriculture. Since most men in the area only have tiny plots of land, they must either work as labourers or operate home-based businesses like blacksmithing and shoemaking to make ends meet. This has led to a surge in participation in the cattle breeding industry from previously underrepresented demographics, particularly women, children, and young people. As they go to and from the woods, they gather WEPs for their own use and to sell in local markets. As a result of WEPs, a firm foundation of common knowledge has been set up. in particular to flash floods caused by photography. This information, which is based on their needs, instincts, observation, trial and error, and experiences, has ensured their food supply since ancient times. This body of information has been amassed through many years of practise, and it has been passed down in the family as an established tradition. The contemporary environment sees a deterioration in this practise and the knowledge it entails due to development activities, migration from rural to urban regions for job and education, shifting cultural customs, the allure of fast food, and dwindling natural resources, among other things. (**TOPNO, S**., & **Ghosh, T**. **K**. 2019), **Rao PK**.2020, **Reyes.Garcia.V**.*et al*.,2020),**Asif.M**.*etal*.,2021)

additionally emphasise that indigenous knowledge systems often undergo changes as a consequence of modernization of traditions. This is because of the widespread rejection of established norms and the welcoming of new, foreign perspectives. Therefore, the importance of recording and preserving this wealth of collected traditional knowledge has never been higher than it is today. This study seeks to inventory the abundance of local expertise, identify the cultural significance of WEPs, and evaluate local consensus on the traditional knowledge of wild edible plants in the Udhampur region.

Materials and Methods

District Udhampur is situated between 32° 34' and 39° 30' north latitude and 74° 16' and 75° 38' east longitude, and is part of the Jammu district of the state of J&K. (Fig. 1). Variables might fall Southeast part of J&K, at an altitude of 600-2900 metres above sea level. The district's landscape, which includes the Shivalik range of the Himalayas, is characterised by a series of hills. It has a rocky and difficult topography, and its climate may be classified into three separate zones: (a) the temperate/intermediate zone, (b) the sub-tropical/intermediate zone, and (c) the intermediate zone. Annual precipitation averages 1551 millimetres in this region (Riyaz, M.2021), The highest annual rainfall occurs in July, August, and September. During the study's peak snowfall months of December through February, almost 25% of the area is completely blanketed in snow.

Tehsil Udhampur is a subdistrict of Udhampur District in the Indian state of Jammu & Kashmir. The coordinates (32.82 degrees north, 75.32 degrees east) are accurate. You'll find an average elevation of 828 metres above sea level (2716 feet). Forests dominate over 90% of the tehsil's land area, and the region's terrain is quite steep. The region's diverse topography allows for a wide variety of plant life, from subtropical forests to alpine meadows atop the highest peaks. Extensive interviews and field observations were conducted with locals. remote areas in search of the hidden expertise that may be found there. During a field study, ethnomedical data was collected from rural and tribal herbalists, elders, women, and shepherds in the villages of Sukhtalab, Thaplal, and Nimbala (Atal.C.K2020).

Results and Discussion

The current ethnobotanical study uncovered 45 plant species, which were divided between 31 families and 44 genera. All the angiosperms we'll be talking about here may be categorised as trees, shrubs, or herbs. The Lamiaceae family accounted for 8% of the plants included, whereas the Fabaceae family accounted for 3% with 3 species. Each family had one species except for the Plantaginaceae, Euphorbiaceae, Myrtaceae, Rutaceae, and Rosaceae, which all had two. In this analysis, researchers identified 18 tree species, 8 shrub species, and 19 different plant species with therapeutic potential. Mainstays of traditional medicine are listed in Table 1.

The Udhampur tehsil in Jammu and Kashmir has received the least attention in terms of ethno-medical studies. Traditional medicinal plants of this tehsil have never been studied in such depth previously. This is the first research of its kind to record the local medical history of 45 different medicinal plants, each of which has been used for different purposes in different tehsils. This study found that certain plant species are used to treat many ailments, whereas others are used to treat the same sickness with

multiple plant species. In 2021, Ganaie and coworkers say.

Because it shows how indigenous people have coped with problems in the past, the ethnobotanical knowledge of indigenous societies reflects their extensive experience and traditions. The stability it provides the follows:(**Saini SC, Reddy GBS.**2020), to facilitate the economic use of biological resources, this information is being made available. In 2021, Ganaie and coworkers say. This wealth of information may be useful in psychopharmacological studies and ultimately result in the development of novel therapeutic medications. (**Sharma.S** 2022 and **Rashid.A**.*etal*.,2020). Despite this, much of the traditional knowledge necessary to produce ethno-medicines from essential plants is being lost. The herbal riches stressed in earlier research must be located and documented immediately. (**Shrivastava.T.N**.2020),**Kaul.MK**.*etal*.,2020 and **Rao.P.K**.*et al*.,2020), as well as **Gupta *et al.,***2020). Obviously, this is essential.

So that future generations may learn about the native plant species of the region. (**Samudra.S**.M.2021,**Azad-and-Alom.J**. 2021,**Swami and Gupta**.B.K.2020, **Shah** *et al*.,2020) are some of the researchers that have carried out ethnobotanical research in various agro ecological zones.

Table 1. Species, shrubs,herbs Ethno-medicinal use of locally found medicinal plants

S.No	Botanical name	Family	Local Name	Part used	Uses
1	*Sapindus mukorossi* Gaertn	Sapindaceae	Reetha	Fruit	Cleaning of hair, clothes and skin pimples.
2	*Albizia chinensis*	Fabaceae	Ola	Bark	Infusion of bark is used for treatment of Cuts and Wounds
3	*Albizia lebbeck* L. (Benth)	Fabaceae	Sareen	Root	Root powder acts as stimulant of sexual desire
4	*Bombax ceiba* L.	Malvaceae	Simbal	Root and Fruit	It is used to cure diarrhea, dysentery, stomach complaints, Diabetes, kidney troubles, and menstrual disorders. It also
					Acts as stimulant and tonic.
5	*Melia azedrach L.*	Meliaceae	Drenk	Bark and Leaves	Decoction of bark and leaves is used for the skin troubles

					like eczema
6	*Eucalyptus globules Labill.*	Myrtaceae	Safeda	Bark and leaf	Extract of leaves is used as anti-diabetic and diuretic. Eucalyptus oil is also used as ointment
7	*Eriobotrya japonica Thunb.*	Rosaceae	Lokat	Fruit and leaf	Used to treat increased sugar level in blood
8	*Ficus palmata Forssk.*	Moraceae	Fakoda	Fruits	Fruits are laxative and demulcent. They are used in disease Of lungs, bladder and in constipation.
9	*Emblica officinale L.*	Phyllanthaceae	Amla	Whole plant mostly fruits	Anti-diabetic, dysentery and jaundice
10	*Citrus medica L.*	Rutaceae	Garga l	Fruits, roots and flower	Treatment of abdominal, digestive disorders. It is also used to cure tonsillitis.
11	*Alistonia scholaris L.*	Apocynaceae	Satpara	Bark	Malaria, typhoid fever, asthma, bronchitis, chest pain, cholera, fever , malaria, pneumonia, and headache
12	*Grevia optiva*	Tiliaceae	Taman	Fruit	Used against stomach troubles and skin allergies
13	*Mallotus philippensis Lam.*	Euphorbiaceae	Kembal	Fruit	Used against worms and bacterial infections
14	*Ziziphus mauritiana Lam.*	Rhamnaceae	Ber	Bark , leaves and fruit	Leaves are used to cure gout, rheumatic inflammation, and arthritis. Decoction of bark is used to treat bloating. Sweet Fruit is used to cure gastritis.
15	*Cassia fistula L.*	Fabaceae	Karngal/ amalt	Leaves roots and seeds	It is used in digestive purposes and as laxative. Fruit is used to cure constipation. Root extract reduces fever, bronchitis and

			ass		rheumatism
16	*Vitex negundo L.*	Lamiaceae	Banha	Root, leaf and flower	Used as diuretic. It is also used in rheumatism, dyspepsia, diarrhea, fever and liver complaints. It is also used in swelling and in pregnant women complications.
17	*Syzigium cumini L.*	Myrtaceae	Jamun	Seed fruit	Anti-diabetic and is also used for digestive disorders and Dysentery
18	*Cordia dichotoma G. Forst*	Boraginaceae	Lasoora	Whole plant	It is used in the treatment headache, fever, ringworm and digestive disorder like dyspepsia. It is also used to cure Diabetics, ulceration. It also cures urinary passage infection.
19	*Calotropis Procera*	Asclepediaceae	Aak	Latex and Leaves	Used as antidote. powder of leaves is used cure appendicitis
20	*Cannabis sativa L.*	Cannabinaceae	Bhang	Whole plant	Used as condiment in dishes and pain reliever.
21	*Datura stramonium L.*	Solanaceae	Datura	Seeds and Leaves	Seeds and leaves are used as anti-asthmatic and anti-spasmodic. The paste of Leaves is used as pain relievers.
22	*Adhatoda vasica*	Acanthaceae	Barakand	Whole plant	Decoction of leaves is used in the treatment of cough, asthama, bronchitis And other respiratory disorders. Roots are used to cure acidity and gas problems. Stem is used to cure teeth
23	*Lantana canara L.*	Verbenaceae	Panjphuli	Leaf	Leaf extract is used against skin itches, respiratory infections and headache
24	*Xanthoxyllum Alatum*	Rutaceae	Timbru	Whole plant	Tooth ache, stomach ache and is used in anthelminthic. Oil is extracted from seeds, bark extract is used as carminative tonic
25	*Rosa brunonii*	Rosaceae	Karrer	Whole plant	It is used to cure constipation, body inflammation, heart and eye diseases

					and is used as anti-septic
26	*Punica granatum L.*	Punicaceae	Daroo ni	Fruit and seeds	The juice of its fruits is used to cure heart strokes. It used to cure anemia and weakness in pregnant ladies. It is also used to cure skin inflammation.
27	*Valeriana jatamansi*	Valerianaceae		Root	It is used in treatment of eye, blood and liver diseases, Sedative and antiseptic
28	*Malva neglecta Wallr.*	Malvaceae	Sucha l	Whole plant	Used for treatment of constipation and also acts as inflammatory
29	*Ocimum sanctum L.*	Lamiaceae	Tulsi		Used in treatment of mouth and respiratory tract infections. Also used against indigestion, heart diseases and stress
30	*Taraxacum officinale L.*	Asteraceae	Bathu r	Whole plant	Roots are diuretic and leaves are used for dislocation of joints, stomach ulcers and diarrhea. Flowers are used to made sugar free tea that helps to control diabetes.
31	*Oxalis corniculata L.*	Oxalidaceae		Whole plant	It is used to cure malaria, hepatitis B and abdominal pain. Anti Helminthic
32	*Euphorbia hirta L.*	Euphorbiaceae	Dudhi	Whole plant	Decoction of whole plant is used for cough, dysentery, jaundice, asthma and digestive problems
33	*Ajuga bracteosa Benth.*	Lamiaceae	Jorao n	Leaves and	The juice of root is used in the treatment of diarrhea and dysentery.
				Roots	The leaves4are used in the treatment of fever
34	*Argemone Mexicana L.*	Papaveraceae	Kandi yar	Seeds	Powder of seeds is used for skin problems. Along with pudina it is used to cure fever and typhoid
35	*Chenopodium album L.*	Chenopodiaceae		Leaf	It acts as Anthelminthic, antirehumatic and laxative
36	*Mentha longifolia L. Huds*	Lamiaceae	Jungli pudin a	Whole plant	Antiseptic, carminative and used in digestion problems

37	*Plantago lanceolata L.*	Plantaginaceae	Bumgha	Whole plant	Juice is prepared to cure respiratory tract infections
38	*Sassurea heteromalla*	Asteraceae	Batola	Whole plant	Its oil is used for relieving pain. It is also used for toothache and Arthritis. Extract of root is also used for anti-inflammatory purposes
39	*Trachyspermum ammi Sprague*	Apiaceae	Ajwain	Whole plant	Extract is used to cure cough, asthmas, bronchitis, cold, fever and body pains
40	*Gentian kurroo L.*	Gentianaceae	Neelkanth	Root	Root used for digestive disorders, lack of appetite, liver complaints and Indigestion.
41	*Laportea interrupta L.*	Urticaceae	Chew	Leaf	It acts as anti-inflammatory, tonic, stimulant and blood purifier. Having anti-microbial properties. It is used to enhance sexual desire.
42	*Tinospora cardifolia (Thunb.) miers*	Menispermaceae	Glow	Whole plant	Extract of plant juice is used to cure liver and heart diseases. It also Controls blood pressure. Also relieves gout, rheumatism, fever and acts as anti-diabetic.
43	*Acorus calamus L.*	Acoraceae	Bacch	Whole plant	It acts as sedative, laxative, diuretic and carminative. Roots while Chewing give hallucination.
44	*Viola odorata Thunb.*	Violaceae	Banafsha	Whole plant	Whole herb is boiled in water and is used to cure cough, cold, Hoarseness of voice, and sore throat.
45	*Centella asiatica L.*	Plantaginaceae	Brahmi	Stem and leaves	Stem powder is used to treat asthmas, bronchitis, chronic ulcers, anemia and gastroenteritis. Leaf extract is used to cure jaundice.

Diversity of wild edible plants

45 different plant species are harvested in Udhampur for their phytonutrient content. Diplazium esculentum is the only pteridophyte in a

group of 45 angiosperms. This assemblage of plants includes 45 families and 78 genera (Table 1). Commelina benghalensis, Tulipa clusiana, Colocasia esculenta, and Phoenix sylvestris are the only flowering plant species in the monocot family. Only 4.5 percent of the 45 flowering plant species are monocots, while 95.5% are dicots. Recent reports of wild edible plants in the Rajouri region of the Jammu district in the Himalayas **Rashid.A**.*et al*.2020),while the Western Himalayas have been documented by(**Thakur** *et al*.,2021),.The number of edible wild plants discovered by other researchers throughout the world ranges from 49 to 173 (**Pardo-de-Santayana-M-***etal*.,2021**Menendez-Baceta.G**2020; **Chaachouay, N**.*et al*.,2022), In this study, foragers relied on wild plants for food because they had access to a broad variety, a thorough grasp of the plants and their uses, a working knowledge of the forest, and a familiarity with their requirements. Subfamily Leguminosae (**Manju Lataa, V. K. (2020),** in terms of the number of species used, was the most typical. After that, the family Rosaceae had seven members, the family Moraceae had six, the family Rutaceae had five, the family Polygonaceae had five, the family Lamiaceae had four, and the family Combretaceae had three (Fig. 1). One person spoke for twenty-eight different families. Previous research has shown that the Rosaceae family is the most popular to utilise. (**Thakur.D.**2020, **Chaachouay, N.**2022),the Leguminosae in terms of the number of species used, was the most typical. After that, the family Rosaceae had seven members, the family Moraceae had six, the family Rutaceae had five, the family Polygonaceae had five, the family Lamiaceae had four, and the family Combretaceae had three (Fig. 1). One person spoke for twenty-eight different families. Previous research has shown that the Rosaceae family is the most popular to utilise. (**Pardo. De. Santayana. M**. *et al.*,**2021**). As a result of the region's penchant for condiments, this is the case. Each inoculant utilised in this research consisted of around 20.7 different wild edible species. Vegetables were the most valuable crop (mean 7.2), after which comes edible medicinal herbs (mean 6.2), and finally fruit (mean 5.0). Survey participants have reported seeing an average of 23.7 different species. **Thakur D.***et al***.,**2020), in Himachal Pradesh, India, (**Kang** *et al*.,2021) in Gansu province of China (**Dolina K**, *et al*.,2021), have tallied an average of 20.8 wild edible species per responder. The average number of vegetable species per responder ranged from 7.1% to 13.2%, whereas the average number of fruit species per respondent was 6.3% to 6.9%. Species of wild edibles, as well as those of vegetables and fruits, documented in this research fall well within these limits.

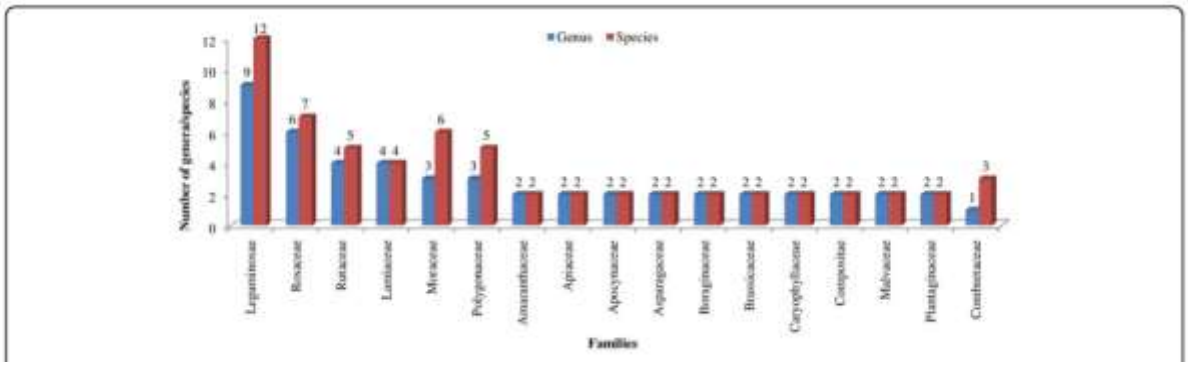

Fig 1

Conclusion

The primary purpose of the research was to compile a catalogue of local cures in use in the Udhampur area. Due to its relative seclusion, studies have shown that the indigenous community here relies only on the traditional use of medicinal plants. Therefore, many plant species are exploited at unsustainable rates without any consideration for conservation. The overharvesting of these plants is a problem that has to be addressed. At the top of the list is the obligation placed on indigenous peoples to educate the general public on the appropriate use and protection of these creatures.

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