RESEARCH ARTICLE

Study of Ethnomedicinal Plants Found in Different Villages of Hisar, Haryana in Winter Season

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Abstract

For years, medicinal plants have been a primary source of rectifiers for healthcare. Information about how plants work is either passed down from elders, learned through experience or via trials, but it isn't always proven. A similarly extensive repository of ethnomedical knowledge is North Haryana. The present study demonstrate the importance of plants from the Hisar district in the state of Haryana for ethnomedicine. Field checks and in-depth interviews conducted in the fields between 2022 and 2023 were used to gather the data. The current study contains thorough ethnomedical information, including common and botanical names, family names, pharmaceutical delivery methods, lozenge dosage forms, and ailments addressed. It was determined that this region still has a wealth of practical ethnomedical expertise and may contribute to further herbal medicine development programs.

Keywords: Ethnomedicinal, Ethnobotanical Plants, Herbal, Traditional Resources and Hisar Region.

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Introduction

Two Greek terms are combined to form the word *ethnobotany*. American taxonomy botanist John W. Harshberger first used the term in 1895. The study of how humans and plants interact with a focus on traditional tribal culture is known as ethnobotany. Ethnobotany is now an established branch of science. Human beings have been fascinated by the diversification of natural things. Because of their fascination, they have discovered plants for food, fuel, medicines, floriculture, and ceremonial purposes. They have explored endless possibilities using multiple methods. Such rapidly changing lifestyles and increasing urbanization have prompted the public to relook at the utilitarian purposes of plants.

Charaka has a substantial amount of Vedic literature pertaining to ethnobotany in our nation of India. This nation was largely covered in a forest, which supported a variety of healing plants. The Ayurvedic medical system made heavy use of plants. Many different varieties of medicinal plants may be discovered in India, which has a rich biosphere for plant resources. In several regions of the country, research on the use of traditional remedies and medicinal plants was conducted (Jain *et al*., 2010; Yadav and Bhandoria, 2013). Some work related to this was done in Haryana (Jain and Verma, 1987; Jain *et al*., 1995; Lal and Yadav, 1983; Yadav *et al*., 2017). "Study of ethnobotanical plants found in Mirka, Tokas and Patan Villages in Hisar district, Haryana" (Modi and Babita 2023)

In India, Haryana is a state in the north of the country. It was established on November 1, 1966. Flora refers to plant life forms occurring within a given interval. Hisar district is rich in floral divergence. Flora supports our ecological stability. Flora are oxygen producing and carbon dioxide consuming system without which human can't live. Study of Ethnobotanical Plants Found in Satrod Khurd and Dabra villages in Hisar (Modi.and Babita 2022).

The World Health Organisation (WHO) estimates that 65–80% of the global population, especially in developing nations, relies on plants for healing, and this is widely accepted in traditional cultures. This is frequently because of poverty and a lack of access to modern medicine (Awoyemi *et al*., 2012). The distinctive quality of traditional knowledge, which has never been kept in writing but has instead been spoken or orally transmitted across generations, is that it is transgenerational. It is the knowledge that locals have acquired via experience and adaptation to a community's unique culture, environment, and way of life through time. These historical treasures are valuable economic resources that may be traded, licensed, or creatively used to generate money and improve quality of life.

From an ecological, social, and economic standpoint, medicinal plants' significance is being increasingly understood (Negi *et al*., 2019). Indigenous knowledge and the promotion of environmental conservation have been intertwined via the study of medicinal plant conservation and usage (Rana *et al*. 2017). On the one hand, the increased use of allopathic treatment has led to a change in people's attitudes towards the practice of herbal medicine, which has decreased. On the other hand, the contemporary herbal, pharmaceutical, food, and cosmetic businesses frequently take use of ancient applications and practices. But more recently, discussions among scientists, ecologists, and conservationists have been sparked by declining natural populations of medicinal plants as a result of unlawful extraction. Due to overuse and careless harvesting from the forest and alpine meadows, a number of medicinal plants have

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been categorized as endangered, vulnerable, and threatened (Uniyal *et al*., 2006).

Material and Methods

Study Site description

The present ethnomedicinal study was conducted in Hisar district of Haryana state. An ethnobotanical survey was done from November 2022 to February 2023. Five villages of Hisar district were surveyed: Satrod Khurd, Dabra, Tokas, Patan and Mirka villages. Hisar district is located at 29.09 N 75.43 E in western Haryana. Its height be sea level is 215 meter.

Data Organization and Collection

The field trip's entire data collection was based on interviews. Images as well as the botanical name, popular name, plant component and medicinal application, were documented in this material. All of the gathered plants were recognized

Table 1: Reported medicinal plant in November 2022 to February 2023 (winter season) at Satrod Khurd, Dabra, Tokas, Patan and Mirka villages in Hisar, Haryana.

Sr. No.	*Scientific Name*	*Common Name*	*Family*	*Plants Part Used*
1	*Eucalyptus globulus*	Safeda	Myrtaceae	Leaves
2	*Triticum aestivum*	Knak	Poaceae	Leaves
3	*Sorghastrum nutans*	Kndai	Poaceae	Root, stem, leaves
4	*Rumex crispus*	Jangli Palk	Polygonaceae	Aerial part, leaves and root
5	*Chenopodium album*	Bthua	Amaranthaceae	Leaves
6	*Trigonella corniculate*	Metha	Fabaceae	Seed and leaves
7	*Phalaris minor*	Guli danda	Poaceae	Leaves
8	*Artemisia campestris*	Buer	Asteraceae	Leaves
9	*Brassica campestris*	Sarso	Brassicaceae	Root
10	*Zygophyllum indicum*	Bui	Zygophyllaceae	Root
11	*Achyranthes aspera*	Ulta kanda	Amaranthaceae	See, root and shoot
12	*Parthenium hysterophorous*	Carrot grass	Asteraceae	Flower extract
13	*Polypogon mospeliensis*	Annual beard-grass	Poaceae	Leaves
14	*Tamarix aphylla*	Rukh	Tamariaceae	Leaves and Stem
15	*Szygium cumini*	Jamun	Myrtaceae	Bark and leaves
16	*Indigofera tinctoria*	Nil bdi	Fabaceae	Leaf and roots
17	*Zizipus mauritiana*	Beri	Rhamnaceae	Roots, leaves and fruits
18	*Calotropis procera*	Aak	Apocynaceae	Leaves
19	*Phragmites australis*	Common reed	Poaceae	Stem and root
20	*Raphanus sativus*	Mooli	Brassicaceae	Bulb, seed and leaf
21	*Phaseolus vulgaris*	Sigre	Fabaceae	Bean pod
22	*Solanum tuberosum*	Aalu	Solanaceae	Potato skin
23	*Lawsonia inermis*	Mehndi	Lythraceae	Leaf paste
24	*Citrus limon*	Desi nimbu	Rutaceae	Fruit
25	*Tagetes erecta*	Genda	Asteraceae	Flower and leaves
26	*Nicotiana tabacum*	Tambaku	Solanaceae	Leaves
27	*Acacia nilotica*	Kikar	Fabaceae	Leaves, bark, seed, root, flower, fruit
28	*Aloe vera*	Gwar petha	Asphodelaceae	Leaves
29	*Manilkara zapota*	Chiku	Sapotaceae	Fruit and leaves
30	*Albizia lebbeck*	Siris	Fabaceae	Leaves
31	*Ricinus communis*	Arandi	Euphorbiaceae	Leaf, root and seed
32	*Carissa carandas*	Karonda grass	Apocynaceae	Fruit and leaves
33	*Eleusine indica*	Jangali marua	Poaceae	Root
34	*Heliotropium indicum*	Hathajori	Boraginaceae	Root and leaves
35	*Amaranthus viridis*	Chauli	Amaranthaceae	Seed, Oil and leaf
36	*Sonchus arvensis*	Dudhi	Asteraceae	Leaves
37	*Allium sativum*	Lhsun	Amaryllidaceae	Leaves

Table 2: Ethnobotanical plants found in Hisar region, in winter season and their medicinal uses:

Sr.No	*Scientific Name*	*Medicinal uses*
1	*Eucalyptus globulus*	Help in reducing pain, promote relaxation
2	*Triticum aestivum*	For curing disease such as cancer, diabetes, ulcer etc.
3	*Sorghastrum nutans*	For Curing skin and eye problems, bleeding disorders.
4	*Rumex crispus*	Help in the treatment of Jaundice, whooping cough and bleeding
5	*Chenopodium album*	Used as a blood purifier
6	*Trigonella corniculate*	Used as gastric stimulant
7	*Phalaris minor*	Used in hallucinogenic properties as a medication
8	*Artemisia campestris*	For curing cough, stomach pain
9	*Brassica campestris*	Reduce skin itching, skin allergic conditions.
10	*Zygophyllum indicum*	For curing asthma problems
11	*Achyranthes aspera*	help in the treatment of boils, asthma, bleeding, cold
12	*Parthenium hysterophorous*	Treat fever, neurological disorders, urinary infections
13	*Polypogon mospeliensis*	For curing heart problems
14	*Tamarix aphylla*	Help in preventing kidney and heart disorders
15	*Szygium cumini*	Used for the treatment of ulcer, throat pain, asthma
16	*Indigofera tinctoria*	Used for the treatment of liver problems
17	*Zizipus mauritiana*	Used in liver and cancer treatment
18	*Calotropis procera*	Used in diarrhoea and skin disease
19	*Phragmites australis*	Used in the treatment of bronchitis, cholera
20	*Raphanus sativus*	To treat constipation, chronic tracheitis
21	*Phaseolus vulgaris*	Used in reducing high cholesterol, diabetes and kidney stonesproblems
22	*Solanum tuberosum*	Used in the treatment of peptic ulcer and acidity
23	*Lawsonia inermis*	Used for headache, jaundice
24	*Citrus limon*	Used in for treat high blood pressure, chest pain, fever
25	*Tagetes erecta*	Used for digestive tract problems
26	*Nicotiana tabacum*	Induce vomiting, reduce headache
27	*Acacia nilotica*	Treating mouth ulcer, burns and wound
28	*Aloe vera*	For treating skin injuries and digestive problems
29	*Manilkara zapota*	For treating skin problems
30	*Albizia lebbeck*	Prevention of lung ailments, abdominal tumors
31	*Ricinus communis*	Help in reducing gall bladder pain, period pain, menstural cramp
32	*Carissa carandas*	To treat acidity, anemia, stomach pain
33	*Eleusine indica*	Used in the treatment of influenza and urinary problems
34	*Heliotropium indicum*	To treat sore throat and fever
35	*Amaranthus viridis*	To treat teeth problems
36	*Sonchus arvensis*	Used for treating kidney disorders
37	*Allium sativum*	Helps to treat liver problems and diabetes

using the taxonomic literature, flora, Google Lens, and other resources. Data from ethnomedicine were tabulated. From the sides of the road, railway tracks, bare ground, farming fields, etc., ethnomedical plants were gathered.

Results and Discussion

During this study, thirty-seven species of the plant belong to nineteen families were recorded. These plants are used by the local people of Strod khurd, Dabra, Tokas, Patan and Mirka villages for the treatment of many body problems like heart failure, kidney stones, skin problems, immunity, high level cholesterol, cancer etc. All information like, scientific name, Common name, family, plant part used, medicinal uses and also original plants images is shown in Table 1, 2, and 3. Original plant image of ethnobotanical plants are shown in Fig. 1. Poaceae family (Fig. B, C, G, M, and S) is the dominant family which have six species, Fabaceae Family (Fig. F, U, P, and AA) with five species each, Asteraceae family (Fig. H, L and Y) with four species each,

Table 3: Family wise distribution of species of medicinal plants recorded.

Sr. No.	*Family*	*Total*
1	*Amaranthaceae*	3
2	*Amaryllidaceae*	1
3	*Apocynaceae*	2
4	*Asphodelaceae*	1
5	*Asteraceae*	4
6	*Boraginaceae*	1
7	*Brassicaceae*	2
8	*Euphorbiaceae*	1
9	*Fabaceae*	5
10	*Lythraceae*	1
11	*Myrtaceae*	2
12	*Poaceae*	6
13	*Polygonaceae*	1
14	*Rhamnaceae*	1
15	*Rutaceae*	1
16	*Sapotaceae*	1
17	*Solanaceae*	2
18	*Tamariaceae*	1
19	*Zygophyllaceae*	1


Fig-A - *Eucalyptus globulus*
Fig-B- *Triticum aestivum*
Fig-C- *Sorghastrum nutans*
Fig- D- *Rumex crispus*
Fig-E- *Chenopodium album*
Fig-F- *Trigonella corniculate*
Fig-G- *Phalaris minor*
Fig- H- Artemisia campestris
Fig- I- Brassica campestris
Fig- *J- Zygophyllum indicum*
Fig- *K- Achyranthes aspera*
Fig- L- *Parthenium hysterophorous*


Fig- M- *Polypogon mospeliensis*
Fig- *N- Tamarix aphylla*
Fig- *O- Szygium cumini*
Fig- P- Indigofera tinctoria
Fig- *Q- Zizipus mauritiana*
Fig- *R- Calotropis procera*
Fig- S- *Phragmites australis*
Fig- *T-* Raphanus sativus
Fig- U- *Phaseolus vulgaris*
Fig- V- *Solanum tuberosum*
Fig- *W- Lawsonia inermis*
Fig- *X- Citrus limon*
Fig- Y- *Tagetes erecta*
Fig- *Z- Nicotiana tabacum*
Fig- AA- Acacia nilotica

Figure 1: Ethnobotanical plants found in hissar

Amaranthaceae (Fig. E and K) with three species each, Myrtaceae (Fig. A and O), Brassicaceae (Fig. I and T), Apocynaceae (Fig. R) and Solanaceae (Fig. V and Z) with two species each, Polygonaceae (Fig. D), Zygophyllaceae (Fig. J), Tamariaceae (Fig. N), Lythraceae (Fig. W), Rutaceae (Fig. X), Rhamnaceae (Fig. Q) Asphodelaceae, Sapotaceae, Euphorbiaceae, Boraginaceae and Amaryllidaceae with one species each. Important parts like leaves, bark, root, stem, fruit, flower, seeds, pods, twigs were used for the treatment of many diseases. Mostly plants are used for the treatment of for more than one disease like Achyranthes aspera, Ricinus communis, Allium sativum, Parthenium hysterophorous etc. These data recorded during the study was compared with the related literature, research paper, websites etc.

Conclusion

During the study, Field checks and in-depth interviews conducted in the fields between 2022 and 2023 were used to gather the data. It has been realized that medicinal plants will play an important role in the future of the medical system. The current study contains thorough ethnomedical information, including common and botanical names, family names, pharmaceutical delivery methods, lozenge dosage forms, and ailments addressed. Poaceae family is the dominant family which have six species, Fabaceae with five species each; Asteraceae with four species each; Amaranthaceae with three species each; Myrtaceae, Brassicaceae, Apocynaceae and Solanaceae with two species each; Polygonaceae, Zygophyllaceae, Tamariaceae, Lythraceae, Rutaceae, Asphodelaceae, Sapotaceae, Euphorbiaceae, Boraginaceae and Amaryllidaceae with one species each. It was determined that this region still has a wealth of practical ethnomedical expertise and may contribute to further herbal medicine development programs.

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Author Contribution

Gajanand Modi and Babita conceived the idea and designed the experiments. Babita collect the sample form experimental site and data analysis by Gajanand Modi. Gajanand Modi and Babita prepared the manuscript, read and approved the manuscript.

Conflicts of Interest

None.

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