

An Ethnobotanical Investigation On Leguminosae Family of Ambala District, Haryana (India)

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Abstract

Around 70% of population in India relies on these systems for primary health care. The traditional Indian system of medicine includes many natural plants used for the treatment of various diseases. A floristic and ethnobotanical study was carried out in Ambala district (27-39"-45' N to 76-36"-52' E), Haryana India, from January 2012 to December 2014. In the present study, family Leguminosae dominated the region with higher number of plant species (61 species). The investigation revealed that out total 61 species, 34 plant species belonging to 24 genera are commonly used in the treatment of epilepsy, cough, nervous disorders, enlarged liver, stomach problems, wounds etc. Plants are also used by local people as a food, fodder, fuel and wood for making furniture and to extract dyes. The plant parts are used in the form of juice, decoction, paste, infusion and powder. The information was collected by questionnaires and interviews of old experienced people and local healers of villages. It was noted that local people in the area under study are using wild plant species to fulfil their needs.

Key words: Ambala district, ethnobotanical, Leguminosae, healers.

Introduction

Man has dependent on nature, particularly on the plants for its survival since his existence on earth (Choudhary, 2011). Plant are the most precious gifts of nature provided to meet all kinds of essential requirements of the humans in the form of food, fodder, fuel, medicine, timber and resins etc. (Gaur, 1999). Several wild plants are used as medicine by local living in and around the forest area, from pre historic period for cure of various diseases. Since these are in common use by the local people and are of great importance that's why a lot of people are engaged in the trade of medicinal plants throughout the world (Elisabetsky, 1990).

Ethnobotany has emerged as an important branch of study which focuses on the utility of different plant species and their properties as food, medicine and other uses (Allen *et al.*, 1990 and Cotton, 1997). The World Health Organisation Traditional Medical Programme (Farnsworth *et al.*, 1985) has provided the evidence that ethnomedicinal information can lead to valuable drug discovery. The WHO estimates that about 80% of the population of most developing countries relies on herbal medicines for their primary healthcare needs (De Silva, 1997). Of the 15000 species of flowering plants found in India, about 17% are considered to be of medicinal value (Nadkarni, 1954; Jain, 1968; Pei, 2001; Singh *et al.*, 2005). In India, villages comprise 15% of the total geographical area of Indian landmasses, representing one of the greatest emporia of ethnobotanical wealth (Albert *et al.*, 2006).

The Ethnobotanical survey can bring out different clauses for the development of drugs to treat human diseases. Herbal medicines are assumed to be of great importance in the primary healthcare of individuals and communities in many developing countries (Ghosh, 2003). Considering the current rate of deforestation with the concurrent loss of biodiversity, there is a need for accurate documentation of the knowledge and experience of the traditional herbalists (Grierson *et al.*, 1999). The aim of present study is identification, documentation and exploration of ethnobotany of such wild edible plants that had not been investigated and documented in this subdivision as well as in this district so far to collect data of the most dominating family in the region, which may help in new drug discovery providing safe and relevant

information to encourage the preservation of culture, tradition, conservation and sustainable utilization of plants wealth occurring in the area.

Materials And Methods

I) Study Area

Ambala lies on the North-Eastern edge of Haryana (27-39"-45' N to 76-36"-52' E) (Fig. 1-2) . It is bounded by the district Yamuna Nagar to the South-East. To its South lies Kurukshetra district while in its west is situated Patiala and Ropar districts of Punjab and the Union Territory of Chandigarh. The Shivalik Range of Solan and Sirmaur districts of Himachal Pradesh bound the Ambala district in the North and North-East. Ambala has a semi-arid as well as tropical climate and is rich in biodiversity. This research paper provides detailed information regarding the ethnobotanical uses of dominating family Leguminosae of the region Ambala district, Haryana.



Fig.1- Map of Haryana showing Ambala District

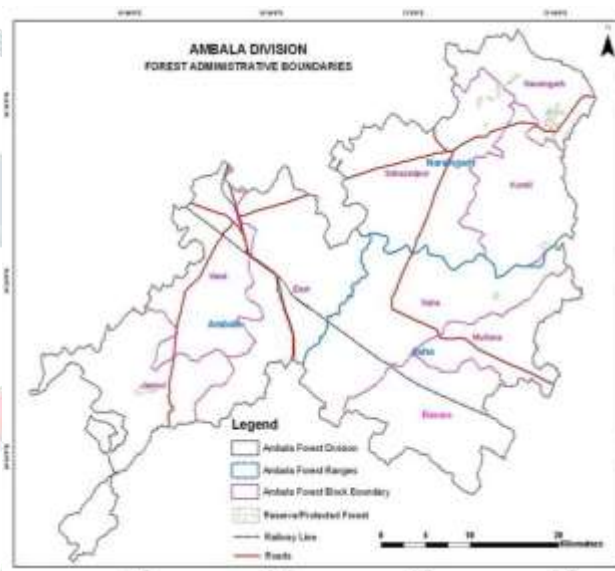


Fig. 2 - Map of Ambala district showing Division forest

II) Data Collection

The present work is mainly based on field surveys conducted during different seasons of the year to collect data about the knowledge and practice of using wild plant species by local people and traditional healers.

The ethnobotanical information was collected through general conversations with traditional healers and questionnaires were used to gather their knowledge. Details of common name, part used and ethnobotanical uses were documented by interacting with them.

The collected plants were identified by the local people with their vernacular names, photographed and sample specimens were collected for the preparation of herbarium. The voucher specimens were deposited in the herbarium at Department of Botany, Kurukshetra University, Kurushetra, Haryana (India).

Questionnaire for collecting ethnobotanical data

- **Informant's consent for the participation in the study :**
- I (Name of Informant) here by give my full consent and conscious to participate in this study and declare that to the best of my knowledge the information that I have provided are true, accurate and complete.

Date (Signature/ thumb impression)

➤ **Informant,s detail:**

- Name
- Gender
- Age
- Occupation
- Education.....
- Location/residence.....

➤ **Data about plant collected and its use**

- Plant (local name).....
- Habit.....
- Plant part used.....
- Cultivated/ wild
- Name of disease (s) treated.....
- Method of crude drug preparation.....
- Mode of preparation.....
- Other uses if any.....

Remarks:
 Plant identified as(Botanical name)

researcher)

(Signature of

Results and Discussion

An floristic and ethnobotanical study on the Ambala District was carried out from January 2012 to December 2014. During survey family Leguminosae dominated the region having higher number of species (61) belonging to 38 genera. The ethnobotanical information gathered through structural questionnaire and interviews shows that in the study area, local people who use different plant species for their food, to cure diseases and as an fodder.

During the survey, 34 plant species belonged to 24 genera of the family Leguminosae were mentioned by them having economic importance. The plant parts used widely includes whole plant, root, leaves, seeds, stems and others. Plants have been arranged according to Natural System of classification with their scientific name, local name, part used and ethnobotanical uses (Table 1). The commonly used plant parts are whole plant (28%) followed by roots (16%), fruits (15%), leaves (13%) etc(Fig 3). They are useful in the treatment of various diseases like epilepsy, cough, nervous disorders, enlarged liver, stomach problems, wounds etc. Plants are also used by local people as a food, fodder, fuel and wood for making furniture and to extract dyes. The natural remedies include powder, decoction, paste and juice of plants to cure diseases.

It has observed during survey that the rich biological and geographical resources of this area are, however, under the process of severe degradation. Biotic pressures, economic and social problems have resulted in the loss of many of the habitats of the biological diversity. Over exploitation of the resources has damaged or disturbed many habitats of biodiversity in the area. Construction of houses or commercial buildings on new sites is disturbing the vegetation greatly and many times an unrecoverable extent.

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Table 1

Sr. No.	Species	Local name	Part(s) used	Uses
1)	<i>Indigofera linifolia</i> (Linn. f.) Retz.	Sankhahuli, Torki	Whole plant	The plant is considered as vermifuge.
2)	<i>Indigofera linnaei</i> Ali		Whole plant	The juice is diuretic and is also used in chronic venereal diseases. Decoction given in epilepsy and insanity.
3)	<i>Abrus precatorius</i> Linn.	Ratti	Roots and seeds	Root decoction is given for cough and colds. Seeds are considered poisonous. Roots diuretic, tonic and emetic. Seeds administered in treatment of nervous disorders and applied as a paste on stiffening of shoulder joints and paralysis.
4)	<i>Lathyrus aphaca</i> Linn.	Patteil, Jangli-matar	Whole plant	Plant is used as animal fodder.
5)	<i>Vicia sativa</i> Linn.		Whole plant	The plant is used as fodder.
6)	<i>Crotalaria</i>		Roots	Decoction of roots is given to pregnant

	<i>medicaginea</i> Lamk.			women for easy delivery.
7)	<i>Erythrina suberosa</i> Roxb.,	Dhaura Dhak, Nasut	Stem and bark	Wood and bark ash used in dyeing.
8)	<i>Teramnus labialis</i> (Linn. f.) Spreng.		Roots	Roots are used as febrifuge, expectorant and diuretic.
9)	<i>Phaseolus aconitifolius</i> Jacq.	Moth	Seed	The seeds are utilized as human food.
10)	<i>Dolichos uniflorus</i> Lamk.		Fruits (pods)	The fruits are used as vegetable.
11)	<i>Butea Monosperma</i> (Lamk.) Taub.	Dhak, Palash, Tesu	Leaves and flowers	The leaves are lopped for fodder and also used for making plates. The flowers yield a dye used for dyeing clothes.
12)	<i>Tephrosia purpurea</i> (Linn.) Pers.	Jhojhra, Sarphonka	Roots	Root powder along with Black pepper and sonth is taken orally to cure enlarged liver.
13)	<i>Alysicarpus monilifer</i> (Linn.) DC.		Whole plant	The plant useful as fodder.
14)	<i>Desmodium gangeticum</i> (Linn.) DC.		Roots	Roots are used as febrifuge, expectorant and diuretic.
15)	<i>Dalbergia paniculata</i> Roxb.	Razon	Wood	The timber is used in making musical instruments.
16)	<i>Dalbergia sissoo</i> Roxb.	Shisham	Wood	The plant is source of high quality timber.
17)	<i>Medicago polymorpha</i> Linn.	Maina	Whole plant	The plant is used as an fodder for cattle.
18)	<i>Medicago sativa</i> Linn.	Lusan	Whole plant	It is used as fodder.
19)	<i>Melilotus indica</i> All.	Metha, Jungli, Methi	Whole plant	It is used as a fodder for animals.
20)	<i>Bauhinia racemosa</i> Lamk.	Papri	Bark	The plant yields fiber from its bark.
21)	<i>Bauhinia purpurea</i> Linn.	Kachnar	Whole plant	The floral buds are consumed as vegetable, bark is used for tanning. Leaves are a good fodder for cattle and twigs are used as fuel wood.
22)	<i>Cassia fistula</i> Linn.	Amaltas	Roots and leaves	Decoction of root taken orally in morning to cure stomach disorders. Paste of fresh leaflets warmed in mustard oil applied on cuts and wounds.
23)	<i>Cassia floribunda</i> Cav.		Fruit (pods)	The pods are cooked as vegetable.
24)	<i>Tamarindus indica</i> Linn.	Imli	Fruit (pods)	The tamarind fruit is used in making sauces, curries and beverages. It cures dysentery and boils on human skin. A preparation from the seed is useful for sizing cotton, woolens, jute fabrics and dyeing silk.
25)	<i>Caesalpinia cristata</i> Linn.	Kath-Karanj, Kateli	Seeds	The seeds are used in treatment of diabetes
26)	<i>Prosopis chilensis</i>	Kabuli Kikar	Leaves and	The pods are eaten. The foliage and pods

	(Molina) Stuntz.		fruits (pods)	are a good source of fodder
27	<i>Prosopis cineraria</i> (Linn.) Druce	Jand, Jandi	Fruit (pods)	The plant is considered sacred and is worshipped for favour of “Mata Shitala” from very old times. Pods valuable fodder.
28	<i>Acacia leucophloea</i> (Roxb.) Willd.	Jand, Safed Babul	Whole plant	Used as fertilizer in barren soil to increase the soil fertility.
29	<i>Acacia nilotica</i> (Linn.) Willd. ssp. <i>indica</i> Brenan	Chianjan, Kikar, Babool	Bark	Exudates from the bark is used as adhesive. The resins are heated and eaten raw.
30	<i>Acacia auriculiformis</i> A. Cunn.	Sarban	Leaves	Leaves are used as washing agent for making detergent.
31	<i>Acacia catechu</i> Willd.	Kikar, Babul, Katha	Bark and Fruit (pods)	Bark used in tooth problems, source of Katha.
32	<i>Pithecellobium Dulce</i> (Roxb.) Benth.	Jangli jalebi	Whole plant	The pods are eaten raw. Commonly used as animal fodder.
33	<i>Albizia lebbek</i> (Linn.) Willd.	Siris, Sireen	Whole plant	The plant is a source of light timber. Twigs and pods are tied on the house entrances as good omen. A spoon of powdered seeds along with a glass of water, taken early in the morning up to three weeks is good treatment of diabetes.
34	<i>Albizia procera</i> Benth.	Safed Siris	Leaves and stem	Leaves are poultice onto ulcers. Wood is used chiefly for construction, furniture, carts and carriages, cane crushers and fuel.

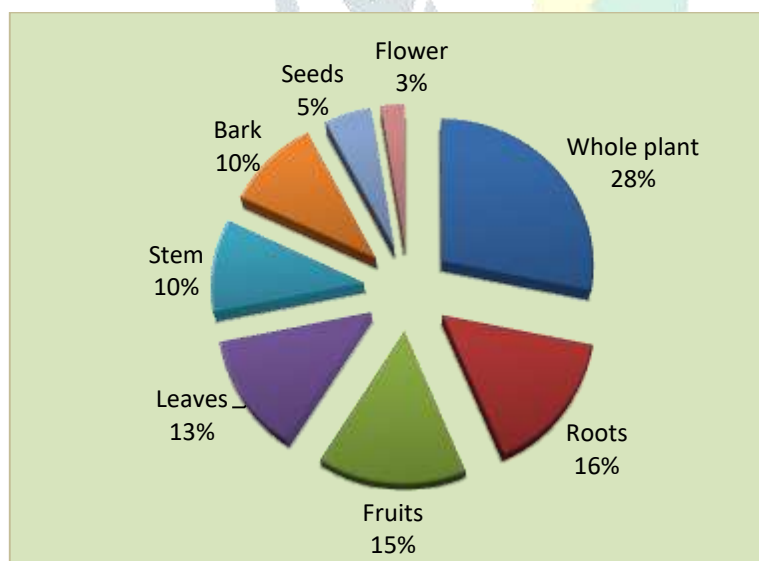


Fig 3: Pie chart showing different plant parts used