



## **Floristic and Ethno-Botanical Studies on Some Parts of Hisar District of Haryana, India**

**Naina Palria\* and B.D. Vashistha**

Department of Botany, Kurukshetra University, Kurukshetra-136119, Haryana (India)

### **ABSTRACT**

*Studies on floristic diversity and ethno botany of Hansi region of Hisar district was conducted during 2015-2016 during different seasons of the year to gather data about the knowledge and the traditional use of wild plants by local inhabitants, medicine practitioners, hakims through interviews and questionnaire. A total of 78 species were collected during study out of which 51 species are of ethnobotanical importance belonging to 47 genera and 31 families have been documented. The study reveals a practise of using various parts of wild plants by local inhabitants. It is reported that leaves (32%) are the most commonly used plant parts followed by whole plant (15%), roots (14%), fruits (12%) seed (9%), flower (5%) etc. Various diseases like fever, stomach ache, indigestion, asthma, wounds, kidney stone, snake bites, cough, and rheumatism are treated with the help of these plants in the area.*

**Key words:** Ethno-botany, Hansi, medicinal plants, floristic.

Received 21.06.2016

Revised 16.09.2016

Accepted 11.11.2016

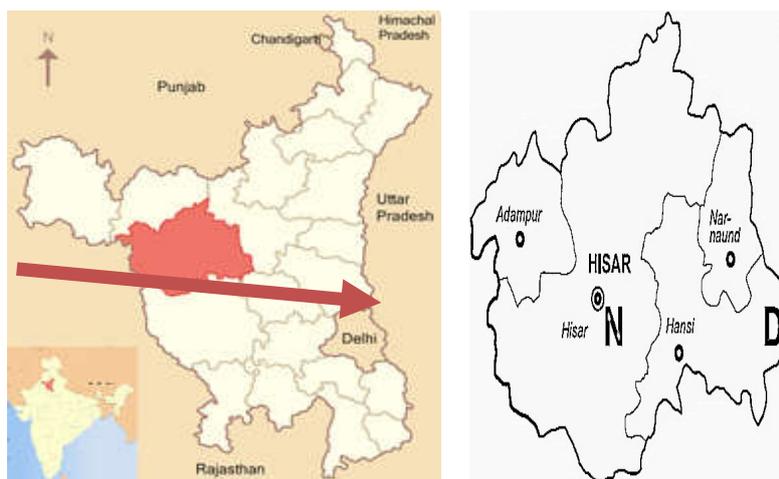
### **INTRODUCTION**

Enormous diversity of plants, in addition to life supporting services, food, fuel, timber, fodder also provides medicines. Wild plants occupy an important position in traditional system of medicine as well as other systems of medicine like Ayurveda, Unani, and Homoeopathy etc. According to National Medicinal Plants Board of India, in India more than 6000 plants are of medicinal importance [1]. According to World Health Organization about 80% of the world's population depends mainly on indigenous medicine and that the majority of traditional therapies involve the use of plant extracts or of their active constituents. To get full benefits from this traditional knowledge it needs to be documented. In order to gather knowledge of natural resources for their scientific and economic exploitation for various uses, the botanical information at micro level need special attention and thus requires fresh surveys to be conducted to know the floristic richness and ethno botanical practices prevalent in various parts of India. In place of mere more collections, critical observation on plants on the spot with illustrative specimens is needed. It is possible only when limited area is explored intensively [3-5]. Much information is not available about ethno-botanical data of Hansi region of Hisar district of Haryana state of India. Keeping this in view, the survey of Hansi (fig.1) has been conducted to document the plants of medicinal importance used by the local population.

### **MATERIALS AND METHODS**

#### **Study area**

The study area Hansi is a sub-district of district Hisar in Haryana state in northern India. It is located at latitude of 29.01°N and 75.97°East longitude in south western Haryana. It is present at an elevation of 207 metre. It is touched by district Bhiwani at the eastern side while at western edge it is bordered with Hisar. The area comes under the Indo-Gangetic plains of Haryana. Southern edge of the district is dry with sand dunes. It is one of the five cities belonging to Indus Valley Civilization.



**Fig. 1 Showing Study Area**

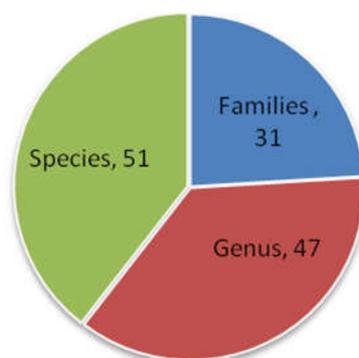
The climate of Hansi is very hot in summers (avg. 45 C) and too cold in winters ranging temperature 1.5 to 4 C. Average rainfall in this semi arid area is 46 cm per annum which is usually received in monsoon in month of July to September and December to February.

**Methodology**

Intensive ethno-botanical exploration was undertaken in the rural areas of Hansi to gather the wild plants either in flowering or fruiting stage during 2015-2016. Standard methods were adopted for collection of voucher specimens, preservation, and for the collection of ethno-botanical information. The information about the folk medicinal uses of plants was collected from traditional healers, medicinal practitioners, hakims, tribes and older rural people and the resultant information was recorded in the ethno-botanical field work. The information about local name, part used and its medicinal importance was collected. The plants were identified with the help of available literature. The specimens were deposited in herbarium of Department of Botany, Kurukshetra University Kurukshetra, Haryana (India).

**RESULTS AND DISCUSSION**

During survey of the area total 78 species have been collected out of which 51 species are of medicinal importance belonging to 47 genera and 31 families (Fig 2). Families represented in the study area are listed in Fig 3. Detail about scientific name, common name, family, plant parts used and ethno-botanical importance of plants is listed in Table 1. Most commonly used plant parts by local people are leaves (32%) followed by whole plant (15%), roots (14%), fruits (12%), stem (9%), bark (7%) seeds (6%) and flower (5%) . These plants are variously utilised by local inhabitants for their medicinal properties to cure various diseases like fever, cough, skin disease, rheumatism, asthma, indigestion, piles, stomach ache, wounds, kidney stone, snake and scorpion bite, leukaemia, impotency, night emission, etc. in form of decoction, powder, paste, juices. Plants used in powder are *Argemone mexicana*, *Chenopodium murale*, *C. album*, *Gnaphalium indicum* etc. while plants used as paste are *Ageratum conyzoides*, *Ziziphus jujuba*, *Fumaria indica*, *Withania somnifera* etc. Used in the form of decoction are *Croton bonapladianum*, *Sonchus oleraceus*, *Ranunculus scleratus* etc. Along with their medicinal uses, these are also used to meet the demands of food, fuel, fodder and timber [6-10].



**Fig.2: No. of Plant Species, Genera and Their Families of Ethno-Botanical Importance**

**Table: 1 –List of Species with Their Ethnobotanical Uses**

S.No.	Botanical name	Family	Local name	Part used	Ethnobotanical importance
1	<i>Abutilon indicum</i>	Malvaceae	Kanghi	Leaf	Leaf juice is given in early morning to cure kidney stones.
2	<i>Achyranthes aspera</i>	Amaranthaceae	Ulta Kanta	Whole plant night blindness	Plant is used in asthma, cough pneumonia and night blindness Flowering spikes or seeds paste is applied externally over bites of poisonous snakes and reptiles Paste of fresh leaves is used for allaying pain from bite of wasps
3	<i>Acacia nilotica</i>	Leguminosae	Kikar/Babool	Stem & bark	Young twigs are used as toothbrush . The powder of stem bark is given orally in asthma , also applied externally on insect bite.
4	<i>Aegle marmelos</i>	Rutaceae	Bel pattar/ Bel	Fruit & leaves	Fruit juice is used as coolant during summer and also beneficial in diarrhoea, constipation and stomach disorder like indigestion.
5	<i>Ageratum conyzoides</i>	Asteraceae	Neela phul / Gandhili	Flowers & leaves	Leaves and flowers extract or juice is applied around the anal region of children to get rid of worms which cause itching
6	<i>Amaranthus viridis</i>	Amaranthaceae	Chulai	Leaves	Leaves are used as vegetable and paste is used for scorpion bite.
7	<i>Anagalis arvensis</i>	Primulaceae	Neel /Jonkmari	Whole plant	Extract of the plant is used as antiviral, antimicrobial agent usually used for skin problems.
8	<i>Argemone maxicana</i>	Papaveraceae	Satyanashi/ Kandayi	Whole plant	Juice of the plant is used for dropsy, jaundice, cutaneous infections and rheumatic pain.
9	<i>Boerhaavia diffusa</i>	Nyctaginaceae	Santhi	Root, seed, leaves	The roots crushed & boiled are useful in night blindness, skin diseases, stomach ache, and anaemia
10	<i>Capparis aphylla</i>	Capparidaceae	Kair	Fruits, root, bark, flower	Roots are used for the treatment of intermittent fever, inflammation, cough and asthma. Flowers are used for as diuretic and to treat indigestion problems
11	<i>Calotropis procera</i>	Asclepiadaceae	Aakta / Aak	Leaves & roots	Root extract provides relief from intestinal worms. Slightly roasted leaves are bandaged to painful rheumatic joints, swelling and headache.
12	<i>Commelina benghalensis</i>	Commelinaceae	Kana Keerai	Whole plant	Plant juice is given in dysentery and paste is applied on body swelling. Leaves are used as vegetables and as a fodder.
13	<i>Chenopodium album</i>	Chenopodiaceae	Jangali Bathua	Whole plant	It is used as a fodder usually. Leaves and tender twigs are also consumed as vegetable in kidney stone problem.
14	<i>Chenopodium murale</i>	Chenopodiaceae	Bathu/ bathua	Whole plant	Paste of leaves and stem is applied to relieve backache and joint pains. Powder of dried leaves to relief from cold and cough.
15	<i>Cannabis sativa</i>	Cannabinaceae	Bhaang	Leaves and seeds	Whole plant is narcotic, sedative, tonic and refrigerant.
16	<i>Cocculus orbiculatus</i>	Menispermaceae	Jamti kibel	Leaves	Leaves juice is taken orally to cure leukemia and used in eczema.
17	<i>Coccinia cordifolia</i>	Cucurbitaceae	Chibaad,	Leaves and fruits	Leaves juice are taken orally for ulcers. Fruits are consumed raw
18	<i>Convolvulus arvensis</i>	Convolvulaceae	Lehli	Whole plant	Whole plant is used as purgative and useful in abdominal pains. Paste of tender shoots is applied on skin eruptions
19	<i>Coronopus didymus</i>	Brassicaceae	Thandi booti	Whole plant	Plant extract is used for bone disorders. Used as fumigants for insects.

**Palria and Vashihtha**

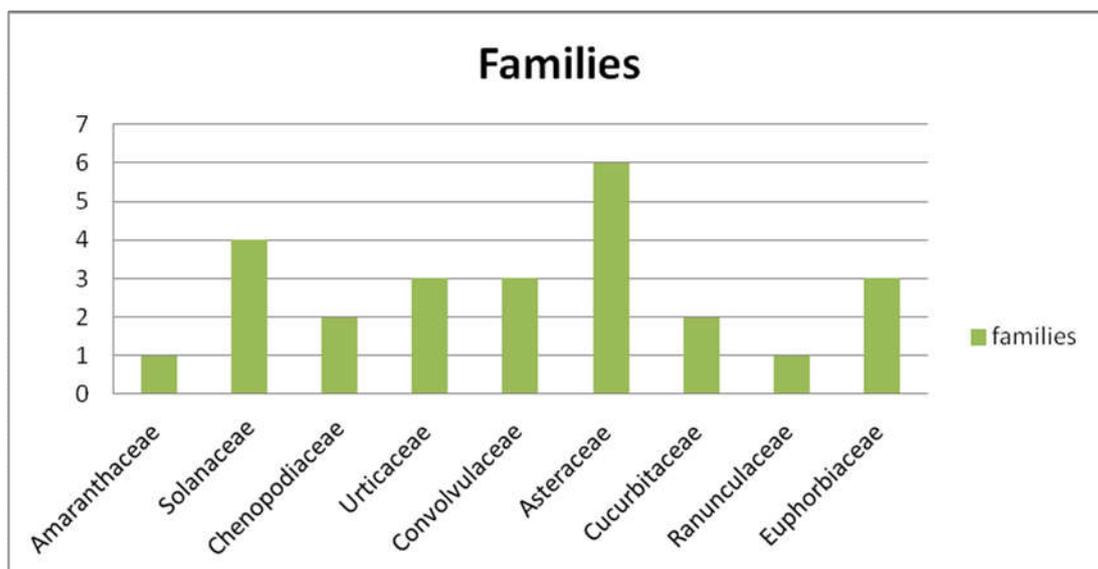
20	<i>Corchorus tridens</i>	Tiliaceae	Kadapat	Whole plant	Plant decoction is taken orally for treatment of diarrhoea.
21	<i>Croton bonplandianum</i>	Euphorbiaceae	Ban Tulsi	Stem & leaves	Young stem juice is used as an eye drop and treatment of ring worm. Leaf decoction is used to wash hair to remove dandruff.
22	<i>Dalbergia sissoo</i>	Leguminosae	Shisham	Stem & leaves	Its leaves are used to treat Gonorrhoea. Furniture and wooden household items are made by using its wood.
23	<i>Euphorbia hirta</i>	Euphorbiaceae	Dudhi	Whole plant	Latex is applied on warts. Whole plant along with <i>Phyllanthus niruri</i> is crushed and the juice is used in spermatorrhoea
24	<i>Eclipta prostrata</i>	Asteraceae	Bhringraj	Flowers and leaf	Leaf extract is used to cure asthma, cold and for clearing hairs, lice check. Flowers are used to extract oil which is used for eyes, diabetic problems.
25	<i>Ficus religiosa</i>	Urticaceae	Peepal	Fruit, Bark, leaves	Fruits are eaten for good digestion. Decoction of bark is useful in skin diseases, rheumatism, ulcers, and scabies. Leaves are used as purgative and tonic.
26	<i>Ficus benghalensis</i>	Urticaceae	Bargad	Fruit, Stem Bark, roots	Its fruits used in treating seminal weakness, sexual debility, and spermatorrhoea, acts as a sex tonic. Latex is found to cure rheumatism, lumbago and cracked fact. Bark useful in diabetes. Tender adventitious roots used to treat fractured bones
27	<i>Fumaria officinalis</i>	Fumariaceae	Shahtra papra	Whole plant	Shoots are used in diarrhoea and as cooling agent. Fresh plant juice taken orally for purifying blood.
28	<i>Gnaphalium indicum</i>	Asteraceae	Godi	Whole plant	Plant is crushed along with dried fish and applied as poultice to heal fractured bones.
29	<i>Heliotropium indicum</i>	Boraginaceae	Siryari	Whole plant	An infusion of the plant is used as an eye-lotion and to clean ulcers. Decoction of whole plant is used to treat various skin problems.
30	<i>Ipomoea pes-tigridis</i>	Convolvulaceae	Panchpatiya	Whole plant	Decoction of plant is used as an anti-inflammatory agent.
31	<i>Ipomoea carnea</i>	Convolvulaceae	Behaya	Leaf, root, stem	Treatment of rheumatism and inflammations
32	<i>Lantana camara</i>	Verbenaceae	Raggad	Leaves, flower, stem	Decoction of roots, flower and stem are used as antidote to snakebite.
33	<i>Launaea asplenifolia.</i>	Asteraceae	Ghobhi ghass	Roots	Root juice is used to cure diarrhoea.
34	<i>Morus alba</i>	Urticaceae	Sahtoot	Fruits, roots, leaves	Fruits are eaten raw as a food and are laxative, emollient used for cleaning throat
35	<i>Mormodica dioica</i>	Cucurbitaceae	Jangali karela	Fruits	It is used by local people for treating diabetes
36	<i>Melilotous indicum</i>	Leguminosae	Jangali methi/ barseem	Leaves	It is used as a fodder for plants
37	<i>Nicotiana plumaginifolia</i>	Solanaceae	Jangali tobacco	Roots	Paste of root is mixed with black pepper and cumin seeds (3:2:1) and taken empty stomach to cure piles.
38	<i>Opuntia elatior</i>	Cactaceae	Naag phani	Stem	Stem pulp in warm state is applied as a plaster on joints to cure rheumatism.
39	<i>Oxalis corniculata</i>	Oxalidaceae	Khati butti	Leaf	Dries leaf powder along cumin seeds taken with water for dysentery.
40	<i>Phyla nodiflora</i>	Verbenaceae	Jal- booti	Leaves	Leaves paste is applied on scalp for removing dandruff. Dried powder of leaves along with cumin is grounded and given daily for leucorrhoea.
41	<i>Portulaca oleracea</i>	Portulacaceae	Kulfa	Seeds & leaves	Seeds Of Kulfa, coriander, Cumin in equal proportion are grounded and taken with common salt daily with water to cure night emission

**Palria and Vashihtha**

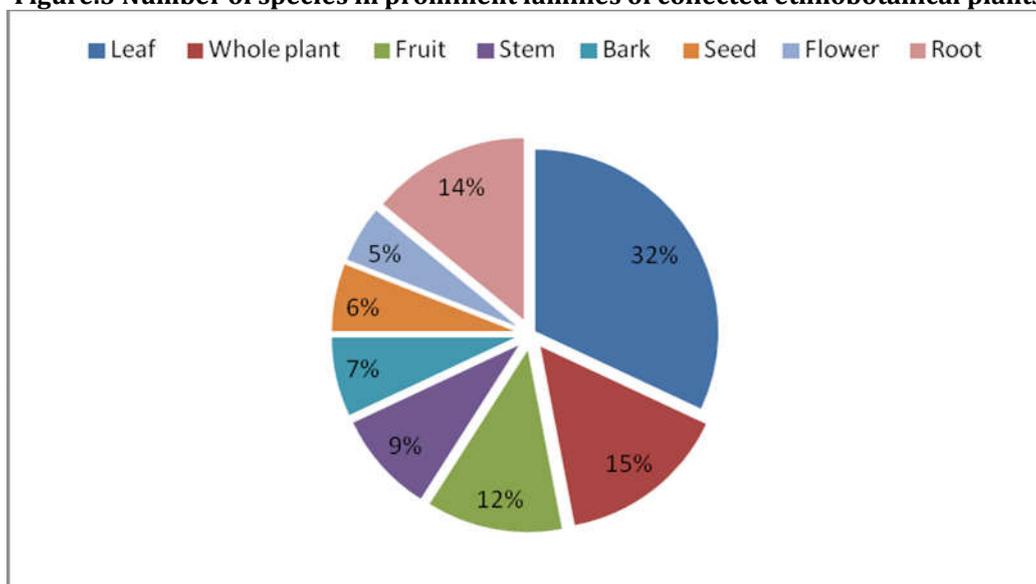
42	<i>Ricinus communis</i>	Euphorbiaceae	Arand /Arandi	Seeds & dry leaves	Seed oil is used to cure skin diseases. Leaves ash with honey is useful in cough and cold. Leaves paste is applied for massaging the body to treat swelling.
43	<i>Rumex dentatus</i>	Polygonaceae	Jangali palak	Leaf & roots	Dried root powder is used for treating constipation.
44	<i>Rannunculus sceleratus</i>	Rannunculaceae	Bhander	Seeds	Seeds cure cold. Leaves acts as a purgative for goat.
45	<i>Sonchus oleraceous</i>	Asteraceae	Bakari booti	Leaves	Leaves extract is used to treat hepatic problems
46	<i>Solanum nigrum</i>	Solanaceae	Makoi	Leaf & fruit	Leaves are used for enlargement of liver in children. Juice of fruits has been used as an analgesic for toothaches
47	<i>Solanum xanthocarpum</i>	Solanaceae	Kandayi/ Kanatakari	Leaves, root	Juice of fresh leaves is applied to check on hair fall and dandruff. Root is used for treatment of piles.
48	<i>Tribulus terrestris</i>	Zygophyllaceae	Gokhru	Leaves, fruits	Leaves used for treating impotency, Fruits to cure urinary disorders and mixed with methi given to the women for easy delivery.
49	<i>Urena lobata</i>	Malvaceae	Unga	Root, bark & flower	Bark is used to heal cuts. Rheumatism and kidney stone are treated with root paste
50	<i>Xanthium strumarium</i>	Asteraceae	Bhruut	Fruits	Fruits are used in constipation, leprosy, rheumatoid arthritis and diarrhoea.
51	<i>Ziziphus jujuba</i>	Rhamnaceae	Ber	Roots Leaves, fruits	Powdered root bark used as brain tonic Crushed leaves are useful for curing abscesses. Fruits are cooling and useful in bilious affections

**Table 2: Families Wise Distribution Of Plant Species**

S.No	Family	No. of Species	S. No.	Family	No. of Species
1	Amaranthaceae	1	17	Menispermaceae	1
2	Asteraceae	6	18	Fumiriaceae	1
3	Asclepidaceae	1	19	Nyctaginaceae	1
4	Brassicaceae	1	20	Papaveraceae	1
5	Boraginaceae	1	21	Portulacaceae	1
6	Cactaceae	1	22	Polygonaceae	1
7	Cannabinaceae	1	23	Primulaceae	1
8	Capparideae	1	24	Ranunculaceae	1
9	Chenopodiaceae	2	25	Rhamnaceae	1
10	Commelinaceae	1	26	Rutaceae	1
11	Cucurbitaceae	2	27	Solanaceae	4
12	Convolvulaceae	3	28	Tilliaceae	1
13	Euphorbiaceae	3	29	Urticaceae	3
14	Leguminosae	3	30	Verbanaceae	2
15	Oxalidaceae	1	31	Zygophyllaceae	1
16	Malvaceae	2			



**Figure.3** Number of species in prominent families of collected ethnobotanical plants



**Fig.4** Relative proportion of different plant parts used for treatment of different diseases

## REFERENCES

1. Gitika and Kumar M., (2016). Ethnobotanical Study of some medicinal plants of Haryana, India. *World J. Pharma. Pharmaceutical Sci.* **5**(8): 1717-1736.
2. Jain, S.P.; Verma, D.M.; Singh, S.C.; Singh, J.S. and Kumar, S., (2000). Flora of Haryana. Central Institute of Medicinal and Aromatic Plants, Lucknow.
3. Kumar S., (2012). Unexplored Ethnobotanical Uses of Some Plants of Family Euphorbiaceae. *J. New Biological Rep.* **1**(2): 67-69.
4. Lal S. D. and Yadav B. K., (1983). Folk Medicines of Kurukshetra district (Haryana), India. *Economic Botany.* **37** (3): 299-305.
5. Lata S., Seth M.K. and Kaushal P., (2016). Ethnobotanical Studies on wild edible plants of Tidong Valley of district Kinnaur (H.P.). *International J. Sci. Res.* **5**(8): 2319-7064.
6. Ram S., Kumar N. and Vats A., (2014). Traditional uses of some medicinal plants used in district Sriganganagar of Rajasthan for the treatment of various health problems. *International J. Advanced Res.* **2**(5): 1068-1075.
7. Singh N. And Vashihtha B.D., (2014). Flowering plant diversity and ethnobotany of Morni Hills, Siwalik Range, Haryana, India. *International J. Pharma. Bio Sciences.* **5**(2): 214 - 222.
8. Selvam N.T., Acharya M. V., (2015). Review of *Ipomoea pes-tigris* L.: Traditional uses, botanical characteristics, chemistry and biological activities. *International J. Pharma Sci. Res.* **6**: 1443-1448, 2015.
9. Yadav J.P., Kumar S. And Siwach P., (2006). Folk medicine used in gynaecological and other related problems by rural population of Haryana. *Indian J. Traditional Knowledge.* **5**(3): 323-326.

10. Vashistha, B.D. and Kaur, Mandeep., (2013). Floristic and ethno botanical survey of Ambala district, Haryana. *International J. Pharm. & Bio-Science*. 4(2): 353 –360.

**CITATION OF THIS ARTICLE**

N Palria and B.D. Vashistha. Floristic and Ethno-Botanical Studies on Some Parts of Hisar District of Haryana, India. *Bull. Env. Pharmacol. Life Sci.*, Vol 6[2] January 2017: 24-30