



AMERICAN JOURNAL OF PHARMTECH RESEARCH

Journal home page: <http://www.ajptr.com/>

Ethno botanical Survey of Medicinal plants having food value in District Hisar

Veni Bharti*¹, Aseem Bhardwaj², Kiran¹, Neeru Vasudeva¹

1. Department of Pharmaceutical Sciences, Guru Jambheshwer University of Science & Technology, Hisar, Haryana, India.

2. Human Bio Sciences India Limited.

ABSTRACT

Hisar district is situated in the Haryana state of India and is endowed with various food plant species prominently employed in traditional medicine. The information on medicinal uses of plants is based on the exhaustive interviews with local physicians practicing indigenous system of medicine, village headmen, priests and denizens. The present research highlights useful ethnobotanical information about the uses of plants by the inhabitants of Hisar district of Haryana state. The study may open doors of unexplored medicinal plants to be used in treatments in future.

Keywords: Traditional medicine, ethobotanical information, food plants.

*Corresponding Author Email: veni_bharti@yahoo.com

Received 26 December 2012, Accepted 09 January 2013

Please cite this article in press as Bharti V *et al.*, Ethno botanical Survey of Medicinal plants having food value in District Hisar . American Journal of PharmTech Research 2013.

INTRODUCTION

Plants are irreplaceable food resources for human beings. Synthetic chemicals and petroleum products can replace many plant derived medicines, dyes, fibers, metal, brick, but there is no substitute for plant derived foods. Almost all human foods are plants or organisms that eat plants. In Cherokee medicine there is distinction between three categories of herbs ¹. The food herbs are gentle in action, have very low toxicity, and are unlikely to cause an adverse response. Examples of food herbs include Oregano, Lemon Balm, Peppermint, Marshmallow, Ginger, Garlic, Chamomile, Hawthorn, Rose hips, Nettles, Dandelion Root and Leaf, and fresh oat extract. These herbs can be utilized in substantial quantities over long periods of time without any acute or chronic toxicity. The second category is the medicine herbs. Nature has provided maximum herbs with medicinal values. A 'medicinal herb' is different from botanic term "herb". It refers to a plant used for medicinal purposes. For example, a medicinal herb can be a real herbal plant, a shrub, other woody plant, or a fungus. The plant part may be the seeds, berries, leaves, barks, roots, fruits or other parts of a plant, or mushroom, which may be considered "herbs" in medicinal or spiritual use ². These herbs are not daily tonics and they should not be taken just because they are good for health. Over three-quarters of the world population relies mainly on plants and plant extracts for health care. More than 30% of the entire plant species, at one time or other was used for medicinal purposes ³. The third category of herbs is poison herbs. These herbs have strong potential for either acute or chronic toxicity and should only be utilized by clinicians who are trained to use them and clearly understand their toxicology and appropriate use. In India, there are about 54 million indigenous people of different ethnic groups inhabiting various terrains. These indigenous groups possess their own distinct culture, religious rites, food habit and have a rich knowledge of traditional medicine ^{4, 5, 6, 7, 8}.

The aim of present study was to explore the plants and herbs having medicinal value and consumed routinely as food material by local inhabitants of district Hisar, Haryana.

Description of study site

The study was carried out in Hisar district in state Haryana (Figure-1). The district is located at latitude of 29.1700° N and longitude of 75.7200° E and the altitude is about 215 m above mean sea level. The district is having an area of 4191 sq m and total population 12,30,000. The district falls within the classified arid and semi-arid zones. Though inhabitants use allopathic medicines, yet 75% people rely on herbal medicines.



Figure 1: Location of District Hisar in Haryana state

MATERIALS AND METHOD:

Methods of information and data collection

In order to document the utilization of indigenous medicinal plants, survey was carried out during the year, July 2011 to August 2011. Methodology used for collecting the ethno botanical information was put into following categories:

- Direct Approach**
- Indirect Approach**
- Miscellaneous**

Direct Approach:

The information on medicinal uses of the indigenous plants have been described after gathering information's from experienced rural folk, traditional herbal medicine practitioners who were having knowledge of traditional healing. A total of 41 selected inhabitants were interviewed. Out of 41, 31 were male and 10 were females. The age of the healers was between 45 years and 75 years.

Indirect Approach:

It included collection of information from literature, museums, herbarium etc.

Miscellaneous:

Some information was also collected after discussion with the village headman, spiritual leader, *ozha*, *vaidhya*, *hakims*, priests, teacher, physicians, veterinary, doctor, social worker, postal authorities and Ayurvedic doctors etc.

A structured questionnaire was used to elicit information from the resource persons using standard methods⁹. The data collection Performa has been given as Additional file 1. Information

on local name of the plant, plant parts used for curing disease, their recipes and mode of administration were recorded. From the collected data a list of plants of different families with their traditional uses, plant part used, their recipes and mode of administration is prepared along with the name of the plants. No statistical method was used in this study.

Identifications of plants

The voucher specimens were kept at Department of Pharmaceutical Sciences, Guru Jambheshwer University of Science & Technology, Hisar. The collected plant material was identified with reference to medicinal and herbal garden, Chaudhary Charan Singh Haryana Agriculture University, Hisar.

RESULTS AND DISCUSSION:

Medicinal cum food plants reported

The information's on scientific name, common name, family name, part used, ailment treated, voucher specimen number of plants have been shown in Table 1. Method of administration, name and age of informer has been shown in Table 2.

Table 1: Medicinal uses of available food plants in Hisar district

Sr. no.	Botanical name	Common name	Family Name	Part used	Ailment treated	Speciman No.
1.	<i>Daucus carota</i>	Carrot	Apiaceae	R, S	Bladder problems, ulcer, eczema, amenorrhea	Pcog190
2.	<i>Raphanus sativus</i>	Reddish	Brassicaceae	R	Jaundice, stones	Pcog191
3.	<i>Aloe barbadensis</i>	Aloe vera	Liliaceae	L	Regulate menses	Pcog192
4.	<i>Ocimum Sanctum</i>	Tulsi	Lamiaceae	L	Cough, cold, bronchitis	Pcog193
5.	<i>curcuma longa</i>	Haldi	zingiberaceae	Rh	Wound healing, cancer	Pcog194
6.	<i>Zingiber Officinale</i>	Adrak	zingiberaceae	Rh	Cold, regulate menses	Pcog195
7.	<i>Allium cepa</i>	Pyaz	Liliaceae	L, B	Treat infertility, antimicrobial	Pcog196
8.	<i>Foeniculum vulgare</i>	Saunf	Apiaceae	S, L, R	Appetizer, digestive aid, menstrual problems	Pcog197
9.	<i>Carum Copticum</i>	Ajwain	Umbelliferae	S	Digestive, stimulant, carminative	Pcog198
10.	<i>Cuminum cyminum</i>	Jeera	Apiaceae	S	Stimulant, carminative, diarrhea	Pcog199
11.	<i>Allium sativum</i>	Lehsun	Liliaceae	B	Raise the uterus, antimicrobial	Pcog200
12.	<i>Emblica officinalis</i>	Amla	Euphorbiaceae	F	Jaundice, tonic, purgative	Pcog201

13.	<i>Phyllanthus niruri</i>	Bhumi Amla	Euphorbiaceae	L, R	Fever, Jaundice, cuts and burises	Pcog202
14.	<i>Carissa carandas</i>	Karonda	Apocynaceae	F, L	fever, diarrhoea, earache	Pcog203
15.	<i>Citrus limonium</i>	Lemon	Rutaceae	F	Reduces body fat, astringent, constipation and febrifuge	Pcog204
16.	<i>Beta vulgaris</i>	Beet	Chenopodiaceae	R	Treat tumors, aphrodisiac, digestive	Pcog205
17.	<i>Tamarindus indica</i>	Imli	Cesalpiniaceae	R	Stomach disorders, general body pain, jaundice, and yellow fever, and as blood tonic, skin cleanser.	Pcog206
18.	<i>Mentha piperita</i>	Peppermint	Lamiaceae	L	Dyspepsia, upset stomach, flavouring agent	Pcog207
19.	<i>Ananas comosus</i>	Ananas	Bromeliaceae	F	Regulate menses	Pcog208
20.	<i>Citrus sinensis</i>	Orange	Rutaceae	F, peels	Growth of body, rich source of vitamin C, acne	Pcog209
21.	<i>Chenopodium ambrosioides</i>	Chenopodium	Chenopodiaceae	L, F	Regulate menses, Treat dysmenorrheal, Treat menstrual disorders	Pcog300
22.	<i>Momordica charantia</i>	Karela	Cucurbitaceae	F	Diabetes	Pcog301
23.	<i>Momordica balsamina</i>	Jungli Karela	Cucurbitaceae	L, F	Snake bite, diabetes, blood purifier	Pcog302
24.	<i>Zea mays</i>	Makka	Poaceae	Stigma, style	Diuretic, poultice, stomach problems	Pcog303
25.	<i>Mangifera indica</i>	Aam	Anacardiaceae	K, F	Skin diseases	Pcog304
26.	<i>Peperomia Pellucida</i>	Paan Patta	Piperaceae	L	Fistula, boils, colic, fatigue	Pcog305
27.	<i>Punica granatum</i>	Anaar	Punicaceae	S, F	Female sex disorders, jaundice, decreasing cholesterol level	Pcog306
28.	<i>Origanum majorana</i>	Marua	Lamiaceae	L	Expectorant, sedative, carminative	Pcog307
29.	<i>Syzygium cumuni</i>	Jamun	Myrtaceae	L, F, S	Ulcer, diabetes, bronchitis	Pcog308
30.	<i>Momordica dioica</i>	Banj Karela	Cucurbitaceae	F	Female sex disorders, male fertility disorders, asthma, allergy	Pcog309
31.	<i>Cordia dichotoma</i>	Lesua	Boraginaceae	B	Mouth ulcers	Pcog310

32.	<i>Aegle marmelos</i>	Bael Pattar	Rutaceae	L, F	habitual constipation, chronic dysentery, dyspepsia	Pcog311
33.	<i>Glycyrrhiza glabra</i>	Mulhatti	Fabaceae	Rh, R	Viral hepatitis, as an expectorant	Pcog312
34.	<i>Rosamarinus officinale</i>	Rosemary	Lamiaceae	O, F	Tonic, astringent, diaphoretic, stimulant	Pcog313
35.	<i>Saccharum officinarum</i>	Ganna	Poaceae	S	Expectorant, increase of libido, diuretic	Pcog314
36.	<i>Carica papaya</i>	Papeeta	Caricaceae	L, S, R	Headache, ringworm infection, kidney stones	Pcog315
37.	<i>Ocimum gratissimum</i>	Curry Patta	Lamiaceae	L	Convulsions, stomach pain, antibacterial	Pcog316
38.	<i>Citrullus colocynthis</i>	Tumba	Cucurbitaceae	R, F, S	Piles, cough, constipation, earache	Pcog317
39.	<i>Ziziphus mauritiana</i>	Ber	Rhamnaceae	L, R	Indigestion, acne, jaundice	Pcog318
40.	<i>Cassia fistula</i>	Amaltas	Caesalpinieae	P	Leprosy, Jaundice, laxative, fever, pneumonia	Pcog319
41.	<i>Morus albus</i>	Shehtoot	Moraceae	RB	Dental caries, antibacterial, diabetes, cough	Pcog320

R= root; S= seeds; L= leaves; RB= root bark, F= fruit; RB= root bark; B= bark; O= oil; L= latex; Rh= rhizome; P= pods

It has been reported that out of 41 plants, maximum species of plants belongs to families Lamiaceae, Cucurbitaceae, Liliaceae, Apiaceae and Rutaceae. In the present study, the most represented family was Lamiaceae (5 plants) followed by Apiaceae, Rutaceae, Cucurbitaceae, Liliaceae (each having 3 plants), followed by Zinziberaceae, Chenopodiaceae, Euphorbiaceae (each having 2 plants). The study has brought to light that the major emphasis of the inhabitants of this area was on Expectorants, cold and digestive medicinal plants.

Plants parts used for making remedies and modes of administration

In most of the preparations as shown in figure 2, leaves (39%) were used for the preparation of medicines predominantly followed by fruits (36%), seeds (19%), roots (14%), rhizome (5%), latex (3%), root bark (2%), oil (2%), Stigma and style (2%) and Pods (2%). The common use of leaf in the preparation of remedies could partly be due to the relative ease of finding this plant part. Leaves remain green and available in plenty for the most months of the years. The use of leaves in the preparation of remedies is also common elsewhere^{10, 11, 12, 13, 14, 15, 16}. The common use of leaf is also due to easily availability of this plant parts in the area. The most prevalent methods of drug preparation were as infusion, powder, decoction, juice and paste. The use of

water as dilutant was the most frequently found for the preparation of drug, other useful dilutant were reported oil and buttermilk.

Table 2: Folkloric uses of food as well as medicinal herbs by local inhabitants

Common name	Method of use	Informer (name/age)
Carrot	Infusion of seeds (1 teaspoon per cup of boiling water) as diuretic, appetizer.	Joru Ram, 76
Reddish	Juice of roots taken orally with sugar in early morning to treat Jaundice	Manmohan, 55
Aloe vera	Leaves, powdered, small doses taken orally to regulate menses	Bhateri Devi, 58
Tulsi	Leaves are boiled in water and taken orally and in herbal tea for cold, flu	Nimesh, 43
Haldi	Powder of rhizome is mixed in milk for wound healing and paste in mustard oil is applied on wounds also	Nitin, 38
Adrak	Rhizome, hot tea (1 ounce in two cups of water), one cup taken orally before meals as expectorant and for cold, flu	Ajanta, 44
Pyaz	Decoction of leaves and bulbs for fever and as hypotensive, carminative, expectorant, and antihelminthic	Meghraj, 37
Saunf	As herbal tea, infusion of seeds as digestive	Joy, 56
Ajwain	Seeds are taken orally with water as digestive aid and to overcome flatulence	Manish, 30
Jeera	As culinary herb and taken as boiled infusion of seeds to improve digestion and as appetizer	Manpreet, 31
Lehsun	Two cloves or more a day are considered a medicinal dose	Gunpreet, 44
Amla	Fruit powder and dried fruit mixed in henna for hair growth, Equal amounts of amla fruit, ginger, black pepper and turmeric are ground into a fine powder. One tea-spoonful of this powder is taken with honey for treatment of Jaundice	Srikant, 47
Bhumi Amla	Hot water extract of the entire plant is administered orally, to reduce fevers, and as a laxative; Dried entire plant grounded in buttermilk is administered orally for jaundice	Jignesh, 35
Karonda	The leaf decoction is valued in cases of intermittent fever, diarrhea, oral inflammation and earache; unripe fruit acts as astringent	Aditya, 58
Lemon	Mix lemon juice with honey in equal proportion in morning to reduce body fat, Mix 2 teaspoons of lemon juice with 10 teaspoons of warm water to get relief from constipation	Neerja, 43
Beet	Root, grated, infusion (two tablespoons in cup of boiling water), cover, steam 20 min, remove top, cool, add molasses (from sugarcane), taken orally 3× a day for 39 days	Chiranjeevi, 34
Imli	Root decoction taken orally	Rani Devi, 68
Peppermint	As sauce, in herbal tea	Nishant, 38
Ananas	Treat abundant menses Leaves, tea, taken orally	Shanti Devi, 79

Orange	Fruit juice for growth, prevents scurvy, rickets. Peels powder paste with for acne treatment	Desraj, 48
Chenopodium	Leaves, flowers, tea, taken orally	Suhani, 30
Karela	Fruit juice taken orally	Nihal Singh, 47
Jungli Karela	Infusion of fruit without seeds with almond oil for chapped hands; juice of fruits for diabetes treatment	Om prakash, 39
Makka	Herbal tea , corn meal is used as poultice, as infusion for stomach problems	Kishan Singh, 58
Aam	Kernel powder is taken for bleeding piles, menorrhoea and fruit juice to alleviate mental weakness	JaiRam, 56
Paan Patta	roots are used to treat fevers and the aerial parts as paste are used as dressing for wounds	Ajay, 29
Anaar	Seeds juice, flower extract to lower LDL level	Neeraj, 32
Marua	As herbal tea by making infusion of leaves in boiled water as expectorant	Nirjala Devi, 61
Jamun	Ash of leaves as tooth powder, powder of seeds taken orally for diabetes treatment	Godula, 33
Banj Karela	Fruit pulp aqueous extract used for asthma and allergy	Mohnish, 44
Lesua	Powdered bark used for mouth ulcers. Infusion of bark used as gargle. The bark juice, mixed with coconut milk, is used to relieve colicky pains	Sushant, 42
Bael Pattar	Leaf paste is applied topically to heal wounds.	Mohan, 47
Mulhatti	Rhizome and root decoction taken orally	Nirmal, 34
Rosemary	Oil is used as carminative, stomachic. Tops and flower infusion as herbal tea for headache, nervous diseases	Nishant, 48
Ganna	Juice taken orally	Devilaal, 38
Papeeta	Curry made from the raw/unripe fruit is taken orally for headache, Milky latex is applied topically for ringworm infection	Reeta, 35
Curry Patta	crushed leaf juice is used in the treatment of convulsion, stomach pain	Gurmeet Singh, 69
Tumba	Roots are chewed to get rid of constipation; Fruit powder is mixed with fenugreek, thymol and salt and a spoon of this mixture is taken orally for treatment of piles	Kamaljeet Singh, 48
Ber	Paste is prepared from the leaves and applied topically for acne treatment; The roots are ground into a fine paste and one spoonful taken orally for indigestion	Girish, 38
Amaltas	Extraction of the pods for common fever and pneumonia	Umesh, 46
Shehtoot	Infusion of root bark is taken for cough and sneezing	Divya, 32

Most common remedies were formulated for menstrual irregularities, uterine problems, cold, cough and flu, fever, headache, Jaundice, diabetes and acne treatment. Few plants have been reported for treatment of more than one disease. For example *Daucus carota* is used for bladder problems, eczema and ulcer. *Allium cepa* is used as hypotensive, carminative, expectorant, and antihelmintic.

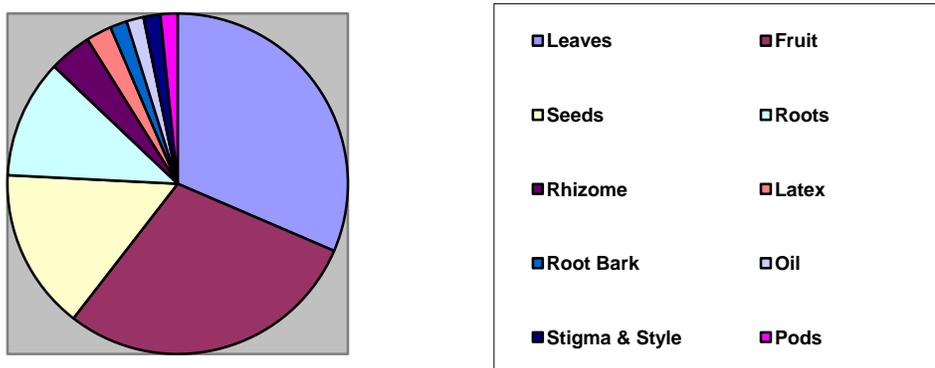


Figure 2: Plants parts used for preparation of remedies

Informers and medicinal plant knowledge

Haryanavi folk medicine is an art practiced mainly by persons over 50. Guided by their long experience, they are said to be capable of healing various diseases, viz., asthma, diabetes, jaundice, kidney stones, piles, rickets, female sex disorders, skin disorders etc. On the other hand, young people usually consider the belief in plant remedies a sort of superstition. Since there is no systematic schooling for transmitting knowledge of these putative plant remedies from one generation to the next, it is believed that with the passing of one more generation, little of this traditional knowledge will survive. Since the Haryanavis have often observed the positive effects of their medicinal preparations, they have strong faith in their own recipes. Thus, the acceptability of these remedies is quite high among 95% of the Haryanavis population of the district. At present, 75% of the population surveyed in this locality depend upon the indigenous system of medicine involving mostly herbal drugs.

The local people and vaidyas (physicians in ayurvedic system) of particular area depend on the plants around them which made them acquire knowledge of economic and medicinal properties of many plants by trial and error. Consequently they became the storehouse of knowledge of many useful as well as harmful plants accumulated and enriched through generations and passed on from generation to another without any written documents, It is therefore important to study ethno botany and it must be properly documented and preserved urgently because most the tribal are being assimilated into modern societies and the treasure of knowledge of uses of plants resources is fast disappearing.

CONCLUSION:

The observations and findings made under present investigation reveals that the ethnic groups and local people of the area are highly dependent on the natural plant resources surrounding their vicinity and these resources play an important role in their routine life. It is the need of the hour

to focus immediate attention for the plant conservation from the government and NGOs with the help of local people by creating rapid awareness in them. There is need of cooperation and coordination among various agencies such as forest and the pharmaceutical firm interested in the utilization of these medicinal plants and to initiate restoration work in affected areas. By doing so, we can change the economic and social conditions of the local inhabitants positively.

REFERENCES:

1. Winston D, Nvwoti. Cherokee Medicine and Ethnobotany in Tierra M, [Ed.], American Herbalism, The Crossing Press, Freedom, CA; 1992.
2. Bennett BC, Baker MA and Gomez P. Ethnobotany of the Shuar of eastern Ecuador. *Advances in Economic Botany* 2002; 14: 1-299.
3. Joy PP, Thomas J, Mathew S, Skaria BP. Medicinal Plants: Kerala Agriculture University, Aromatic and medicinal plants Research Station; 1988: 3-15.
4. John D. One hundred useful raw drugs of the Kani tribes of Trivandrum forest division, Kerala. *Int J Crude Drug Res* 1984; 22: 17-39.
5. Pushpangadan P, Atal CK. Ethnomedico-botanical investigation in Kerala: Some primitive tribals of Western Ghats and their herbal medicine. *J Ethnopharmacol* 1984; 11: 59-77.
6. Anuradha U, Kumbhojkar MS, Vartak VD. Observations on wild plants used in folk medicine in the rural areas of the Kolhapur district. *Ancient Science of Life* 1986; 6: 119-121.
7. Harsha VH, Hebbar SS, Hedge GR, Shripathi V. Ethnomedical knowledge of plants used by Kunabi tribe of Karnataka in India. *Fitoterapia* 2002; 73: 281-287.
8. Parinitha M, Srinivasa BH, Shivanna MB. Medicinal plant wealth of local communities in some villages in Shimoga District of Karnataka, India. *J Ethnopharmacol* 2005; 98:307-312.
9. Nanyingi MO, Mbaria JM, Lanyasunya AL, Wagate CG, Koros KB, Kaburia HF, Munenge RW, Ogara WO. Ethnopharmacological survey of Samburu district, Kenya. *J Ethnobiol Ethnomed* 2005; 4: 14-26.
10. Muthu C, Ayyanar M, Raja N, Ignacimuthu S. Medicinal plants used by traditional healers in Kancheepuram District of Tamil Nadu, India. *J Ethnobiol Ethnomed* 2006; 2: 43.

11. Upadhyay PB, Roy S, Kumar A. Traditional uses of medicinal plants among the rural communities of Churu district in the Thar Desert, India. *J Ethnopharmacol* 2007; 113: 387-399.
12. Giday M, Asfaw Z, Woldu Z, Teklehaymanot T. Medicinal plant knowledge of the Bench ethnic group of Ethiopia: an ethnobotanical investigation. *J Ethnobiol Ethnomed* 2009; 5: 34.
13. Kala CP. Ethnomedicinal botany of the Apatani in the eastern Himalayan region of India. *J Ethnobiol Ethnomed* 2005; 1: 11.
14. Ignacimuthu S, Ayyanar M, Sivaraman K. Ethnobotanical investigations among Tribes in Madurai District of Tamil Nadu (India). *J Ethnobiol Ethnomed* 2006; 2: 25.
15. Ayyanar M, Ignacimuthu S. Traditional knowledge of Kani tribals in Kouthalai of Tirunelveli hills, Tamil Nadu, India. *J Ethnobiol Ethnomed* 2006; 102: 246-55.