



## Ethnomedicinal Studies of Some Trees Growing in Punjab State, India

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### Abstract

For centuries, plants with some medicinal properties have been utilized successfully by man for the cure of common as well as chronic ailments. Traditional medicinal system has been an integral part of most of indigenous cultures all over the world. A slight set back to this medicinal system was observed in the recent past due to urbanization and advent of modern medicinal systems. However, in the past few years, traditional medicinal system has made a major comeback. During the present study, some of the trees growing in Punjab state have been investigated for their ethnomedicinal importance. It was observed that although a variety of trees growing in Punjab have been used in folk medicinal purposes, yet there is a vast scope to study more of plant resources from the state for their therapeutic values.

### Article Info

Accepted: 28 February 2017

Available Online: 20 March 2017

### Keywords

Medicinal properties, Folk and traditional medicines, Plant resources, Ethnomedicinal, Therapeutic value.

### Introduction

Ethnobotany deals with the inter relationship between plants and human beings. Man has been dependent on plants for its various needs like food, shelter, fibers, fodder and medicines etc. Awareness and use of plants for medicinal purposes can be traced since the times immemorial. Use of various plants and their parts for various curative purposes has been well explained in Charak Samhinta and Sushurata Samhinta. Almost every indigenous culture in the world uses plants for medicinal purposes. According to World Health Organization (WHO), almost 80% of world population is dependent on traditional medicines for their primary health care needs (Pie, 1999; Anonymous, 2000; Hamilton *et al.*, 2003).

In past few decades, due to urbanization, industrialization and advent of modern medicinal systems a somewhat decline in use of traditional medicinal practices was observed. However, recently a

major comeback has been made by traditional medicinal systems involving use of plants. Various traditional medicinal systems practiced in India are Ayurveda, Homeopathy, Unani and Siddha system. All of these major alternative medicinal systems use approximately 7500 species of plants in their formulations. In addition to above medicinal systems, there is another not so well acknowledged, though common system of medicine-Folk medicinal system. A vast knowledge regarding the use of plants for cure of various ailments accumulate in the areas where use of plants is still of great importance. In India, folk medicinal practitioners, commonly called- Vaidya exclusively depend upon various plants for the preparation of their unique repertoire as remedy for a variety of common as well as chronic ailments. But precisely, it is not only the vaidyas rather the local inhabitants also, who have knowledge of therapeutic values of certain plants growing in an area (Wallis, 1985; Shah, 2005). There has been several reports of

ethnomedicinal studies from the different parts of the world (Martin, 1983; Gidway *et al.*, 2003; Ahmad, 2007; Sardar *et al.*, 2009; Ali *et al.*, 2012; Uprety *et al.*, 2012) as well as India (Dixit *et al.*, 1984; Jain *et al.*, 2004; Kumar *et al.*, 2015; Shamim *et al.*, 2012; Kaur, 2015). However, it was observed that a very little attention has been paid to the ethnomedicinal aspect of plants growing in Punjab state. Though, there are reports of such studies from the state but to a meager extent. Keeping in view this lacuna, present study was planned as an effort to fill the gap. Punjab is located in the northwest part of India. The climatic conditions of the state are quiet favourable for the growth of a large variety of plants. Various herbs, shrubs and trees growing in Punjab are used for folk medicinal purposes. In the present study, only trees of some ethnomedicinal importance were taken into consideration. Some of the trees are native to the state while others are growing here as a part of ex situ conservation measures.

During the present investigation, ethnomedicinal uses of trees growing in Punjab state were documented. 38 species of trees falling under 35 genera have been included in present study. The documented trees belong to 20 families of angiosperms.

## Materials and Methods

The present study was conducted during 2015-2016. For this purpose, a number of field forays were made to different parts of Punjab state. During these forays, information was gathered regarding various trees growing in the particular area and their use for ethnomedicinal purposes by the local people. A semi structured questionnaire was prepared to document the information acquired from local people including vaidyas and hakims. They were mainly asked about use of particular parts of trees in a particular ailment and mode of administration of such folk medicines. The information gathered was cross checked with the help of reliable literature on ethnobotanical aspects of plants. Collection of various ethnomedicinally important part of trees were made. Plants were identified with the help of Flora of Punjab and other relevant available literature.

## Results and Discussion

During the present study, ethnomedicinally important trees growing in Punjab have been investigated. Use of some of these as folk medicines have been reported previously (Martin, 1995; Aqil *et al.*, 2006; Khan, 2009; Bhattacharya *et al.*, 2014; Sahu *et al.*, 2012;

Mohanapriya *et al.*, 2013; Kaur *et al.*, 2011; Preeti *et al.*, 2014), while most of these have not been investigated earlier from ethnomedicinal point of view. Overall 42 trees have been investigated during the present study. The trees under investigation belong to 38 species falling under 35 genera. These belong to 20 families of angiosperms. Maximum number of trees documented in the study belong to family Fabaceae (Ten), followed by

Rutaceae (Four), Bignoniaceae, Combretaceae, Moraceae, Myrtaceae (Three each), Euphorbiaceae and Meliaceae (Two each), Anacardiaceae, Apocynaceae, Bombacaceae, Moringaceae, Oleaceae, Punicaceae, Rhamnaceae, Rubiaceae, Salvadoraceae, Sapotaceae and Tiliaceae (One each). A plant inventory was prepared on the basis of collected information. The plant species investigated have been arranged family wise. Alphabetical order in the name of family has been followed for the description of trees under present study. The information regarding the family, botanical name, common/vernacular name of the tree, its part used and its use in traditional medicines has been mentioned in table 1.

A number of trees growing in Punjab state find their uses in folk medicines. Most of these are used for different types of ailments. For this purpose, generally different parts of plant such as roots, bark, leaves, flowers, fruits or seeds are used. These plant parts are used in a variety of traditional formulations in dry, powdered form or in the form of some decoctions. It was observed some of these are used alone while others in combination with other plant sources to improve their therapeutic value. Some of the trees have curative properties against some particular type of ailments, while others have a broad range of such properties i.e., these are used in a variety of different types of ailments. Some of the trees investigated were reported earlier also for their folk medicinal value, while others have not been given due importance from the view point of their use in folk medicines. The indigenous knowledge of various plant resources can be explored on a large scale. However, care should be observed to prevent their overexploitation so that these valuable plant resources may not extinct.

## Conclusion

Man has been dependent on trees for a variety of its needs. Use of plants for cure of different types of ailments has been reported since ancient times. Medicinal plants are precious valuable resources of an area.

**Table.1** A plant inventory arranged in an alphabetical order of the families to which the investigated trees belong, showing botanical name/s of the trees, their common/ vernacular names, parts used for medicinal purposes and their use in folk medicines

S.No.	Family	Botanical Name	Common /vern. Name	Part used	Traditional medicinal uses
1.	Anacardiaceae	<i>Mangifera indica</i>	Mango/Aam	Bark, Leaves, Fruits, Seeds	Digestive problems, nausea ,vomiting, improves sex drive
2.	Apocynaceae	<i>Thevetia peruviana</i>	Oleander/peeli kaner	Bark Leaves and Roots	Intermittent fever
		<i>Alstonia scholaris</i>	Devil's tree/Shitan	Bark	Skin diseases ,worm infestation.
3.	Bignoniaceae	<i>Bignonia indica</i>	Indian Trumpet	Stem, Leaves and Bark	Oedema, arthritis, tonsils, cholera and gynaecological problems, piles.
		<i>Heterophragma roxburghii</i>	Waras	Roots, Leaves, Flowers, Fruits and seeds	Digestive problems. Diabetes, and constipation .
		<i>Jacaranda mimosifolia</i>	Jacaranda/Neeli gulmohar	Bark and Leaves	Painful urination, Syphilis and Gonorrhoea, Epilepsy.
4.	Bombacaceae	<i>Bombax ceiba</i>	Red silk cotton tree/ Simbal	Whole plant	Diarrhoea, dysentery, general tonic, as aphrodisiac
5.	Combretaceae	<i>Terminalia arjuna</i>	Arjun	Bark and fruits	General tonic, gynae. Problems Digestive disorders, antipyretic.
		<i>T.belerica</i>	Bahera	Fruits	aphrodisiac,

		<i>T.chebula</i>	Haritaki or harrar	Fruits	anthelmintic, digestive problems.  Appetizer, digestive problems, constipation.
6.	Euphorbiaceae	<i>Emblica officinalis</i>	Indian gooseberry/amla	Fruits and leaves	Stomach problems, dyspepsia, general weakness, peptic ulcers.
		<i>Ricinus communis</i>	Castor/Arind	leaves and seeds	Chronic constipation, hair fall
7.	Fabaceae	<i>Acacia catehu</i>	Black catechu/ Khair	Bark, Fruits and seeds	Intestinal problems, Mouth ulcers, diarrhea, dysentery, Sore throattrhoea, Congestion, bad breath.
		<i>Acacia nilotica</i>	Kikkar/ Babool	Bark,Flowers, Seeds	Sore throat, diarrhoea, bad breath,Dental problems.
		Albizzia lebbeck	Sirihn	Bark	Skin Problems, UTI, Rhumatism, joint pains , Snake bite, insomnia anxiety, depression.
		<i>Butea monosperma</i>	Flame of forest/ Dhak/ Palash	Leaves, Flowers, Seeds	Gastrointestinal problems, Dhobi's itch, diarrhoea , increases sexual drive.
		<i>Cassia fistula</i>	Labarnum/ Amaltas	Leaves, flowers and seeds	Anthelmintic,Skin problems Gonorrhoea.
		<i>Dalbergia sisso</i>	Indian rosewood/ Shisham	Bark, leaves	Diarrhoea,Dysentry,Skin ailments,Lepro

		Delonix regia	Gulmohar/Krishan chura	Bark , Leaves, Flowers	Skin disorders, Intermitant fever
		Pongamia pinnata	Karanj	Whole plant	Constipation, skin disorders
		Prosopis cineraria	Jandi	Bark, leaves, Flowers	Skin problems, Worm infestation, Digestive problem, Prevention of miscarriage.
		Prosopis juliflora	Vilayati Kikkar	Bark,leaves and flowers.	Digestive disorders, Eye ailments Prevention of miscarriage. Dental problems, Stomach disorders
8.	Lythraceae	<i>Lagerstromeia indica</i>	Crepe Myrtle/ Jarul	Bark, Flowers, Leaves	Constipation, Cuts and Wounds
9.	Meliaceae	<i>Azadirechta indica</i>	Neem	Whole plant	Skin ailments, blood purification Dental problems, Stomach disorders, Diabetes, Eye problems ,birth control ,as antiseptic Leucorrhoea, Piles, skin infections, bleeding gums, intermittent fever
		<i>Melia azadirach</i>	Bead tree/Dharek/Bakain	Bark, Leaves, Seeds	
10.	Moraceae	<i>Ficus benghalensis</i>	Banyan/ Bohar	Whole plant	Diabetes, Frequent urination,ria, diarrhoea and dental problems. Problems, headache.
		<i>F. religiosa</i>	Peepal	Whole plant	Skin problems,Cough and Congestion, Jaundice ,blood disorders

		<i>Morus alba</i>	Mulberry/ Shahtoot	Bark and fruits	Fever, cold ,cough, dry and sore eyes, oedema and premature greying of hair
11.	Moringaceae	<i>Moringa oleifera</i>	Drumstick/Suhanjana	Whole plant	Stomach disorders, intestinal spasms, anaemia, arthritis, constipation, high B.P., kidney stone, epilepsy etc.
12.	Myrtaceae	<i>Eucalyptus lanceolata</i>	Safeda	Leaves and bark	Respiratory disorders as cold,cough, asthma, relieves anxiety improve immunity, anti inflammatory
		<i>Eugenia jambola</i>	Black plum/Jamun	Bark ,fruits and seeds	Stomach disorders, carminative, diuretic, anti-diabetic.
		<i>Psidium guajava</i>	Guava/Amrood	Bark, Leaves and fruits	Digestive tonic, used in diarrhoea, dysentery, bronchitis, sore throat, toothache, gum diseases
13.	Oleaceae	<i>Nyctanthes arbor-tristis</i>	Har-shingar	Leaves	Chronic fever, arthritis, sciatica pain
14.	Punicaceae	<i>Punica granatum</i>	Pomegranate/Anar	Whole plant	Digestive disorders, appetizer, skin problems, insomnia, anthelmintic.
15.	Rhamnaceae	<i>Zizyphus mauritiana</i>	Ber	Leaves, bark, fruits	Stomach problems, appetizer, insomnia.
		<i>Z. nummularia</i>	Mallaha ber	Whole plant	Appetizer, promotes hair

					growth, digestive problems
16.	Rubiaceae	<i>Anthocephalis cadamba</i>	Kadamb	Root ,bark, leaves and fruits	Skin and blood disorders, fever ,anemia, uterine disorders, improvement of semen quality
17.	Rutaceae	<i>Aegle marmelos</i>	Wood apple/Bael	Whole plant	Digestive ailments, catarrh, stomach ulcers, diabetes, eye problems, gonorrhoea, cardiotonic
		<i>Citrus limon</i>	Lemon/Nimbu	Bark, leaves, fruits	Indigestion, dyspepsia, nausea, vomiting laxative.
		<i>Feronia limonia</i>	Elephant bael/ Kaith	Bark, Leaves, Fruits	Digestive aid. Diarrhoea, Dysentery , nausea, vomiting, throat problems, hicupps
		<i>Murrya koenigii</i>	Curry patta/ Meethi neem	Leaves	Digestive tonic, Diarrhoea, Hair tonic
18.	Salvadoraceae	<i>Salvadora persica</i>	Toothbrush tree/ Pilu	Bark, stem	Dental problems, convulsions, Gonorrhoea, leprosy, Nasal bleeding
19.	Sapotaceae	<i>Mimusops elengi</i>	Bullet wood/ Maulsari	Bark, flower, fruit and seeds	Gastric ulcer, bleeding gums, anti inflammatory and pain killer
20.	Tiliaceae	<i>Grewia asiatica</i>	Phalsa	Roots, Leaves, Fruits	Oedema, Gastritis, Constipation, Menorrhagia, Skin disorders

These are not only used by people for curative purposes, but also help to uplift the economic condition of some people, as they earn their livelihood by selling these in market. After receiving a setback for some time, ethnomedicinal importance of plants is emerging as a one of the safe and sustainable approach. However, ethnobotanical awareness among common people will reinforce knowledge and sustainable use of folk medicines and devise methods for transfer of such knowledge to the future generations. Such a system of medicinal treatment upon which majority of population has been relying upon with considerable success should not be overlooked for further medical investigations, especially on those plants which have not been investigated for medical research, although the same have been used by local people over the hundreds of years. In present scenario, a wide potential exists to explore more of ethnomedicinally important plant resources for their therapeutic values.

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**How to cite this article:**

Geetanjli. 2017. Ethnomedicinal Studies of Some Trees Growing in Punjab State. *Int.J.Curr.Res.Aca.Rev.* 5(3), 11-19. doi: <https://doi.org/10.20546/ijcrar.2017.503.002>