



Original Research Article

Most prominent ethno-medicinal Plants Used by the Tribals of Chhitkul, Sangla Valley

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Received for publication: November 11, 2014; Accepted: November 28, 2014.

Abstract: Chhitkul (Latitude 31° 18' 50.4" to Longitude 31° 18' 58.9" N) in district Kinnaur, Himachal Pradesh, is the last inhabited village by the (*kannaura*) tribal population. It is known for rich diversity of plants due to unique geographical position and edapho-climatic factors. However, winters are very severe and due to heavy snowfall, the area remains cut off from the surroundings due to which movement from one place to the other is difficult. Therefore, the inhabitants were forced to develop indigenous system of medicine using native medicinal and aromatic plants. The traditional healers (*amchi*) have an in-depth knowledge about the medicinal plants required for the treatment of various ailments. Unfortunately, this knowledge of the locals is fast vanishing due to the lack of some consolidated written document associated with medicinal plants coupled with lesser revenue to the healers/ practitioners. In order to preserve this vast treasure of traditional knowledge, a study was undertaken wherein various medicinal and aromatic plants of the Chhitkul area were inventoried and ethno-medicinal knowledge regarding their uses was gathered from local folks. The present paper attempts to discuss the information related to ethnobotanical aspects of the most prominent medicinal and aromatic plants used by the natives for daily healthcare purposes.

Key words: Ethnobotany, Amchi, Folk, Chhitkul, Kannaura

Introduction

There are number of unfold truths regarding medicinal plants, which need to be explored as this traditional knowledge is diminishing at very fast pace. It is in spite of the fact that 70% of world's population rely on traditional medicinal system for their primary healthcare (Mukherjee and Wahile, 2006). The present medicinal system is based on the age-old tribal medicinal system practiced by aboriginals residing in villages and tribal areas and number of important drugs have been derived from traditional medicinal plants (Fabricant and Farnsworth, 2001). Different ethnic groups have gradually learnt to use plants as a source of medicine by various hit and trial methods and holds an important position in almost all societies. Ethnic people can't afford products of western pharmaceutical industries (Salie *et al.*, 1996) due to high cost, their side effect and lack of healthcare facilities (Plotkin and Famolare, 1992; Balick and Cox, 1996). Tribal people still rely on traditional medicinal system owing to their greater biological compatibility with human system, lesser toxic nature and easy accessibility, and have found an important place in day to day life (Plotkin and Famolare,

1992). Not only this, ~70% of all cancer drugs have originated from natural products (Cragg *et al.*, 1994; Newman *et al.*, 2000). During the last quarter of the twentieth century, there has been a surge of interest in natural plant products, particularly in western countries (Gurib-Fakim, 2006). The high cost and the serious side effects of certain modern drugs led the pendulum of medical treatment to swing back on the side of traditional medicine in recent years.

Chhitkul area of Sangla valley (Himachal Pradesh, India) is situated in the greater Himalayas having diverse agro-climatic condition ranging from temperate to alpine culminating in to cold desert bestowed with great wealth / reservoir of medicinal and aromatic plants. A variety of important and endemic medicinal plants are found in this region. The diverse climatic condition prevailing in this area provide conducive environment for the natural growth of variety of herbs. As a part of greater Himalayas, area receives very heavy snow fall due to which access to and within the valley is very difficult and it remains cut off from rest of the part. So, it is difficult for tribal's to avail health facilities, and they were forced to develop

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their own traditional medicine system, as this tribal population are permanent settlers of area, and have an immense knowledge about medicinal and aromatic plants. Thus, keeping this thing in mind a study was conducted in Chhitkul area of Sangla valley, Himachal Pradesh, India, to inventorize the ethno-medicinal knowledge regarding medicinal plants.

Materials and Methods

Study site

The study site Chhitkul is the last village located in Kinnaur; Himachal Pradesh. Located at banks of the Baspa River, it is inhabited by tribal population *kannaura*. It is a part of greater Himalayas, situated at a latitudinal range from 31° 18' 50.4" to 31° 18' 58.9" N and longitudinal range from 78° 30' 49.6" to 78° 30' 28.6"E its altitude varies from 3450 m to 7000 m. The climate of the area is cool and dry, upper parts of the mountain remains covered with snow for 4 to 6 months and are remarkable for a variety of beautifully colored flowers forming a rich storehouse of medicinal and aromatic plants.

Methodology

The study was undertaken during the month of June to September 2010 in different localities and areas of Chhitkul, Kinnaur, Himachal Pradesh, India. Ethnomedicinal data were collected through general conversations with the informants of both sex and age groups ranging from 60 to 70 years. Local people were interviewed and semi-structured questionnaire was used to obtain information on medicinal plants with regard to their local names, part used, flowering time, modes of preparation and administration. Besides, the traditional healers (*amchis*) were concerned, because they are the local practitioners and have strong knowledge regarding administration of medicinal plants.

The collected information regarding ethnomedicinal plants were consulted from relevant literature available (Rawat *et al.*, 2011; Sharma and Lal, 2005; Sharma *et al.*, 2006; Sood *et al.*, 2001). The specimen's collections were concerned from the relevant flora records and literature and identified from the Herbarium of Forest Research Institute, Dehradun. The voucher specimens have been deposited in Herbarium of Botany department, Panjab University, Chandigarh, India (PAN numbers have been provided).

Results and Discussion

The ethnobotanical survey of Chhitkul revealed the 15 ethnomedicinal plant species are most frequently / commonly used as medicinal plant by local folks against different ailments (Table 1; Fig. 1). The present study revealed that local inhabitants/folk of Chhitkul tribal area has close relationship with their surrounding and that has become an inseparable part of their life. Folks of this area largely depend on plants to fulfil their day to day need due to which tribal's in this area have strong in-depth knowledge about traditional medicinal plants.

During field studies, it was noticed that elderly people of tribal community have vast treasure of hidden knowledge. A wide range of ailments like cold, cough, cuts, wounds, cancer and stomach-related ailments, are treated by local practitioners, which is based on *amchi* system of medicine, an offshoot of the Tibetan system of medicine (Brijlal *et al.*, 2001).

A total 15 ethno-medicinal plants species belonging to 12 families were commonly found in the study area. Among these families, the predominant ones are Asteraceae, Polygonaceae and Apiaceae with 2 plant species and other families with 1 plant species.

As this tribal belt lies in Himalayan region and is a reservoir of luxuriant and varied vegetation, each plant in this region has economic value in terms of nutritional, aesthetic and medicinal view point.

An earlier study of Badoni and Badoni (2001) highlights that large percentage of crude drugs in the Indian market comes from the Himalayan region. The plant usages as medicines are prescribed in different forms like paste, powder, decoction and oil.

Figure 1: Photographs of Medicinal plants used by tribals of Chhitkul (Kinnaur, Himachal Pradesh, India)



Angelica glauca

Arisaema flavum

*Bergenia stracheyi**Calvatia cyathiformis* Morgan.*Polygonatum cirrhifolium**Dactylorhiza hatagirea**Polygonum affine**Podophyllum hexandrum**Saussurea costus**Saussurea Obvallata**Heracleum candicans**Prunus mira**Hippophae rhamnoides**Impatiens balsamina**Rheum australe***Table 1:** Medicinal plants used by tribals of Chhitkul, Sangla Valley, Himachal Pradesh, India.

Plant name	Family	Local Name	Part used	Flowering / Fruiting season	PAN number	Medicinal uses
<i>Angelica glauca</i> Edgew.	Apiaceae	Sapal	Roots	June to September	19955	Root powder is used for stomach ache. It is diaphoretic and diuretic. Boiled tubers are eaten raw as it relieves stomach ache.
<i>Arisaema flavum</i> (Forssk.) Schott	Araceae	Jamusha	Tuber	June to September	19956	
<i>Bergenia stracheyi</i> Hook.f. & Thomson) Engl.	Saxifragaceae	Pashanbhed	Rhizome	June to August	19959	Root powder is used in dissolving stones in the kidney.
<i>Calvatia cyathiformis</i> (Bosc) Morgan	Lycoperdaceae	Phawa-gogo	Mushroom	June to September	20410	Powder enclosed inside mushroom help in blood clotting; powder mixed with water is used against burns.
<i>Dactylorhiza hatagirea</i> (D. Don) Soo	Orchidaceae	Salampanja	Roots and tuber	July to August	19966	It is particularly used in preparing different type of health tonics to increase the sperm count and strength.
<i>Heracleum candicans</i> Wall.ex DC	Apiaceae	Poral	Leaves and roots	May to October	19971	Leaves are used in cuts and wounds. The roots of plant have anti inflammatory properties and thus subsides the pain
<i>Hippophae rhamnoides</i> L.	Elaeagnaceae	Chharma	Fruits	June to July	19972	Fruit juice is good for person having high cholesterol.
<i>Impatiens balsamina</i> L.	Balsaminaceae	Phurtse	Seeds	May to September	20420	Seeds are used for treating constipation.
<i>Polygonum affine</i> D.Don	Polygonaceae	Shoopating	Roots	June to September	20429	Root powder are used as diuretic and blood purifier

<i>Podophyllum hexandrum</i> Royle.	Podophyllaceae	Bankakadi	Rhizome	June to September	19980	Decoction prepared from rhizomes are used to treat cancer.
<i>Polygonatum cirrhifolium</i> (Wall.) Royle.	Convallariaceae	Mahameda	Roots	June to September	20430	Decoction prepared from roots have Antitussive and carminative potential.
<i>Prunus mira</i> Koehne	Rosaceae	Raag	Seeds	March to May	19982	Seed oil is good for rheumatic pain and arthritis. It also lowers blood cholesterol level.
<i>Rheum australe</i> D. Don	Polygonaceae	Arch	Leaves	June to July	19983	Leaves are used in muscular swelling, cuts and wounds.
<i>Saussurea costus</i> (Falc.) Lipsch.	Asteraceae	Kuth	Roots	July to September	19988	Root extract is used in stomach cramps and dysentery.
<i>Saussurea Obvallata</i> (DC.) Edgew.	Asteraceae	Dongur	Roots	July to September	19952	Rhizomes are used as antiseptic and for healing cuts and bruises.

Conclusions

The present study revealed that plants growing in this region are of great medicinal importance and form a strong backbone of traditional medicine system. The basic component of traditional medicinal system are medicinal plants, thus these resources are depleting from the nature at very fast pace due to growing demand and consumption. Therefore, there is a need to generate awareness among local folks regarding conservation and the sustainable utilization of medicinal plants.

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Source of support: Nil

Conflict of interest: None Declared