

ORIGINAL ARTICLE

Traditional Use Of Medicinal Plants by Gujjar And Bakerwal Tribes in Pir Panjal Range of the Shopian District, Kashmir (India)

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ABSTRACT

The present research work was designed to gather indigenous knowledge of local people especially Gujjar and Bakerwal tribes about traditional medicinal uses of plants. Indigenous knowledge was collected by interviewing people of different age groups between 50-90 years. A total of 23 species belonging to 23 genera and 18 families were recorded as being used by local inhabitants for curing various ailments.

Key words: *Indigenous knowledge, Gujjar and Bakerwal tribes.*

INTRODUCTION

Ethnobotany is the study of how the people of a particular culture and region make the use of indigenous plants. It is the relationship between a given society and its environment and in particular the plant world [1]. Faulks [2] considered the subject of ethnobotany as the total relationship between man and vegetation which meant more than even the scope of economic botany. Ethnomedicine is a subfield of medical anthropology that deals with the study of traditional medicines, not only those with relevant written sources, but also those whose knowledge and practices have been orally transmitted over the centuries.

According to data released by the World Health Organisation (WHO), ethnomedicine has maintained its popularity in all regions of the developing world and its use is rapidly expanding in the industrialised countries. For instance, in China traditional herbal preparation account for 30-50% of the total medicinal consumption. In Ghana, Nigeria and Zambia, the first line treatment for 60% of the children with malaria is the use of herbal medicine.

In recent years, one can notice a global trend in the traditional system of medicines and ethnobotanical studies have become increasingly valuable in the development of healthcare system in different parts of the world [19].

According to WHO, 70% population of the world depend on Traditional Health Care System (THCS) for curing various diseases [3]. It is well known that this system offers minimum side effects and relatively low cost as compared to other systems of medicine. This is the reason that patients in developing countries such as Bangladesh (90%), Myanmar (85 %), India (80%), Nepal (75%), Sri Lanka (65%) and Indonesia (60%) have strong conviction in this system.

The World Health Organisation (WHO) has estimated the present demand for ethnomedicinal plants is approximately US \$ 14 billion per year [4]. The demand for medicinal plant based raw materials is growing at the rate of 15 to 25% annually, and according to an estimate of WHO, the demand for ethnomedicinal plants is likely to increase more than US \$ 5 trillion in 2050. In India the medicinal plant related trade is estimated to be approximately US \$ 1 billion per year [5]. According to an estimate, the quantity of export of ayurvedic products produced in India has tripled between last two financial years. In 2008, India exported medicinal plants worth eight billion dollars, 60% was in crude form, while 30% was in the form of finished products. Rest of them were partially prepared products [6].

It is also interesting to record that the association between incidence of certain diseases and availability of curative herbs in the surroundings has been positive as revealed in a microlevel research in West Bengal [7]. Thus it appears that the ethnic populations are the repositories of

knowledge of herbal medicine. This is the reason an attempt has been made to study some ethnomedicinal plants of the Shopian district used by Gujjar and Bakerwal tribes.

MATERIALS AND METHODS

Shopian was accorded a district status in 2007, earlier being part of district Pulwama. The district is bounded by Pulwama in north, Budgam in west, Kulgam in east and districts of Rajouri and Poonch in south. It lies on the latitude of 33° 72' N and a longitude of 74° 53' E. It is situated in the laps of foot hills of Pir Panjal Range and most of its area is hilly terrain. It has an average elevation of 2057m [8].

Shopian has been an ancient town of Kashmir which among other factors in the past has historical importance, since it is situated in the ancient imperial road commonly known "Mughal Road" which connects Kashmir valley with Rajouri and Poonch districts. The district enjoys a predominantly dry temperate climate. On the basis of temperature and precipitation, the district has four seasons in a year, winter (Dec.-Feb.), Spring (March-May), Summer (June-Aug.) and Autumn (Sept.-Nov). The temperature ranges from an average daily maximum of 32°C and minimum of 15°C in July to an average daily maximum of 4°C and minimum of -4°C in January. Shopian depicts rich diversity in soils. According to Raza *et al.*, [8], there are three major categories of soils namely hill soils, alluvial soils and karewa soils. Hill soils are found in the mountainous tract of the study area such as Sedou, Zawoora, Herpora, Zainapora and Keller. Alluvial soils are found in low lying areas along Rambi-ara and represent the transported soils. Karewa soils are composed of silts, thus poorer and are economically important and are used for growing apples, peaches and pears. The higher reaches of karewa soils are under maize cultivation. The district is populated by several ethnic groups such as Bakerwals, Gujjars and Shepherds. The Gujjars are cow/ buffalo herders and Bakerwals are goat/ sheep herders generally. The Bakerwals are nomadic tribe and high altitude goatherds/ shepherds essentially. Bakerwals lead a lonely and tough life in the high altitude meadows of the Himalayas and the Pir Panjal. Every year, they took their livestock animals high in to the mountains, above the tree line to graze in the lush meadows. It may take them as many as sixty days to reach these meadows. During the summer, they move from one meadow to other. They are accompanied by their dogs (Bakerwal dogs) to guard the sheep/ goats and their pack animals.

Gujjars are generally permanent settlers at the foot hills of Pir Panjal Range. They however move to warm places during harsh winters along with their animals. These ethnic groups have their own knowledge of traditional herbal medicine inherited from their fore-fathers. These medicines are well accepted by the local people since generations have experienced their efficacy in alleviating a variety of diseases [9]. These herbal drugs are taken either in raw form or as aqueous extracts. Besides these ethnic groups have to rely on the traditional system as they do not have the modern medicinal facilities available in the vicinity.

The Shopian district known as "Apple Bowl" of the state is floristically rich due to waste area of forests. The forests are having rich diversity of Gymnosperms represented by *Abies*, *Pinus*, *Cedrus*, *Taxus* and *Cupressus*. Angiosperms are widely distributed in plains as well as hilly areas of the district. The district is unique in having some rare medicinal plants like *Rubia cordifolia*, *Dipsacus inermis*, *Aquilegia fragrans*, *Hyoscyamus niger*, *Fumaria indica*, *Viola betonicifolia* and *Viscum album*. Despite the fact that fairly good accounts of its flora is known, it appears that until now no detailed studies on the ethnomedicinal aspects of ethnobotany of this region has been attempted.

Ethnomedicinal surveys of the selected localities of Shopian district were undertaken during 2010-2011 on the guidelines as suggested by Schultes [10]. The method of field work followed is after Jain [11]. Plants were collected from different sites of the study area and data relating to different ethnomedicinal aspects were collected from local people of the area. This was primarily done by carrying the collected specimens to the old men and sometimes to old ladies. The informants were asked questions in Urdu and Kashmiri regarding traditional uses of plants, their vernacular names, distribution and growing period. The useful information of plants was recorded in the field book. The information collected from above people was further verified by cross checking from other knowledgeable persons of the study area and key informants (Hakims). Almost all the plants were collected during flowering and fruiting period with the help of tribals and experienced local people. Individual plants were photographed in their natural environment with digital camera having resolution of 10.1 mega pixels. For collecting the plants/plant parts

various equipments such as scissor, knife, trowel, pruning shears and polythene bags were used. During the survey, the colour and shape of flowers were keenly observed.

The plants/plant parts collected from different sites of the study area were subjected to drying between news papers and kept in a wooden press. The old newspapers were changed daily for first week to prevent moulding of soaked plants. The pressed specimens were sometimes kept close to artificial source of heat to prevent dampness. The pressed and dried specimens were mounted on the herbarium sheets with glue-stick and cello-tape. Every herbarium sheet was provided with label (herbarium label) containing information pertaining to Botanical name, local name, family, collection date, place of collection etc. All the herbaria sheets were deposited in the herbarium of Bundelkhand University, Institute of Basic Sciences, Bundelkhand University, Jhansi (U.P.) for authenticity and future use.

Identification of the field collected plants was done from 'KASH' herbarium of Kashmir University, various published floras, relevant authorities and important works including Flora of Pulwama [12], Flora of Srinagar, Kashmir [13], Glossory of Indian medicinal plants [14], Indian Medicinal plants [15], A Reflecion of Flora of Kashmir [16], Flora of Ladakh [17], and Contribution to Flora of Kashmir [18].

OBSERVATIONS

The plants are described alphabetically with botanical name, local name, family and mode of administration for different diseases.

Androsace rotundifolia Hardwicke Uzmposh Primulaceae

Disease(s) (i) Cataract

Part(s) used Rhizome

Mode of administration

(i) Cataract:-The extract of rhizome with a solution of common salt is used as eyedrops.

Anemone obtusiloba L. Srub Ranunculaceae

Disease(s) (i) Rheumatism

Part(s) used Seeds

Mode of administration

(i) Rheumatism:- Extract of seeds taken daily for 7-10 days.

Aquilegia fragrans Benth. Daduejaid Ranunculaceae

Disease(s) (i) Indigestion

Part(s) used Flowers

Mode of administration

(i) Indigestion:- The extract of flowers is prepared and mixed with the leaf extract of *Mentha arvensis* in warm water and taken twice a day for a week.

Arctium lappa L. Phughood Asteraceae

Disease(s) (i) Skin disease (ii) Boils (iii) Body pain

Part(s) used Leaves, root.

Mode of administration

(i) Skin disease:- Extract of leaves is applied externally thrice a day for a week.

(ii) Boils:- Warm poultice prepared from fresh leaves is applied once a day for a week.

(iii) Body Pain :- 2 – 6g of dried root

taken twice a day for 2-5 days.

Asparagus officinalis L. Parglass Liliaceae

Disease(s) (i) Toothache (ii) Rheumatism (iii) Female infertility.

Part(s) used whole plant, roots.

Mode of administration

(i) Toothache:- The decoction of the roots boiled in water being held in the mouth for few minutes.

(ii) Rheumatism:- The paste of aerial parts is applied externally at bed time for 3-4 days.

(iii) Female fertility:- Decoction of roots with honey is taken twice a day for 15-20 days.

Cardamine impatiens L. Pahal-laish

Brassicaceae

Disease(s) (i) Asthma (ii) Hey fever

Part(s) used Whole plant

Mode of administration

- (i) Asthma:-The extract is prepared from whole plant and taken 2-12 ml twice a day for 5-10 days.
- (ii) Hay fever:-The extract of aerial parts is made and taken with a pinch of sugar and dalchini thrice a day for 2-5 days.

Cichorium intybus L. Kazal-Handh Asteraceae

Mode of Administration

Rheumatism:- A decoction of roots is taken twice a day for a week.

- (ii) Gout:- Root powdered, mixed with water with a pinch of salt taken orally early in the morning for 7- 10 days.

(iii) Jaundice:- Root decoction taken with tomato juice twice a day for 5- 10 days.

Dipsacus inermis Wall. Wupal-hawkh Dipsacaceae

Mode of administration

- (i) Pain:- The leaves are boiled in water and the resulting extract is used by ladies for taking bath after delivery.

(ii) Sore throat:- The extract of leaves is taken twice a day for 5- 8 days.

Fumaria indica (Hausskn.) pugsley

Shahtaur Fumariaceae

Disease(s) (i) Dyspepsia (ii) Rheumatism

Part(s) used Whole plant

Mode of administration

(i) Dyspepsia:-The plant extract mixed with milk is taken twice a day for 7-10 days.

(ii) Rheumatism:-The aerial part of plant is boiled in water and used for taking bath for 5-10 days.

Hyoscyamus niger L. Bagar-Bang

Solanaceae

Disease(s) (i) Gout (ii) Rheumatism (iii) Wounds.

Part(s) used Leaves, Seed.

Mode of Administration

(i) Gout:- The fine powder of herb is mixed with mustard oil and applied externally.

(ii) Rheumatism:- The seeds are powdered, mixed with ghee and applied externally for 10 – 15 days at bed time.

(iii) Wounds:- Infusion of fresh flowers is applied externally on wounds for early relief.

Impatiens glandulifera Royle Trul Balsaminaceae

Disease(s) (i) Skin burn (ii) Joint pain

Part(s) used Leaves

Mode of administration

(i) Skin burn:-The leaves are dried, powdered and mixed with warm water to make a paste which is applied on skin early in the morning for a week.

(ii) Joint pain:-The leaves are crushed and tied with a woollen cloth on the joints.

Lamium album L. Poshkar Lamiaceae

Disease(s) (i) Cough

(ii) Metrorrhagia

Part(s) used Whole plant, leaves, flowers.

Mode of administration

(i) Cough:- 1g of dried herb is mixed with one cup of boiled water to make an expectorant tea that is taken thrice a day for 3 – 5 days.

(ii) Metrorrhagia:- An extract of flowers with an aromatic syrup and taken every 30 minutes until patient stops haemorrhaging.

Nepeta raphanorrhiza Benth.

Vangogil Lamiaceae

Disease(s) (i) Dysentery

(ii) Toothache

Part(s) used Whole plant, leaves

Mode of administration

(i) Dysentery:-The whole plant is crushed and extract is collected. The extract of one cup twice a day is taken for 5-7 days.

(ii) Toothache:- Fresh leaves are chewed till pain is relieved.

Oxalis corniculata L. Tsok-tsen

Oxalidaceae

Disease(s) (i) Toothache

(ii) Convulsions (iii) Blood purification (iv) Diarrhoea.

Part(s) used Whole plant, leaves.

Mode of administration

(i) Toothache:- The fresh leaves are chewed for 2- 3 hours.

(ii) Convulsions:- An infusion of leaves is used to cure convulsions in infants.

(iii) Blood purification:- The ground leaves are eaten as a chutney to help purify the blood.

(iv) Diarrhoea:- The decoction one cup of leaves is taken till recovery.

Prunella vulgaris Kal-vauth. Lamiaceae

Disease(s) (i) Headache (ii) fever (iii) wounds.

Part(s) used Flowers, Leaves.

Mode of Administration

(i) Headache:-The extract of leaves and flowers is taken twice a day.

(ii) Fever:-The decoction of flowers with milk is taken twice a day for 2-5 days.

(iii) Wounds:-Paste is made from flowers and leaves and applied on wounds twice a day.

Rheum emodi Wall. Pambachalan

Polygonaceae.

Disease(s) (i) Rheumatic pain (ii) Wounds (iii) Dislocated joints (iv) Boils

Mode of administration

(i) Rheumatic pain:- The rhizome is powdered and made into paste. The paste is applied externally at bedtime daily for 7-10 days .

(ii) Wounds:-The paste is applied externally on affected portion for 2-5 days at bedtime.

(iii) Dislocated joints:- The paste of rhizome mixed with mustard oil is applied on fractured and dislocated joints at bedtime for a week.

(iv) Boils:- The rhizome is powdered and paste is prepared in warm water and applied on the boils for 5-8 days.

Rubia cordifolia L. Rubes Rubiaceae

Mode of administration

(i) Stomachache:-The root extract of one teaspoon twice a day for 2-3 days overcome stomachache.

(ii) Jaundice:-The decoction of roots taken twice a day for 15 days.

Sambucus wightiana Wall. ex. Wight and Arn. Hapatfal Caprifoliaceae

Disease(s) (i) Chest congestion (ii) Boils

Part(s) used Root, leaves.

Mode of administration

(i) Chest congestion:- The leaf extract is taken twice a day for a week.

(ii) Boils:- The plant is dried and crushed to make powder which is mixed with mustard oil and applied once a day on boils.

Senecio graciliflorus L. Mongol

Asteraceae

Disease(s) (i) Dermatitis (ii) Stomachache.

Part(s) used Leaves, flowers

Mode of administration

(i) Dermatitis:-The extract of leaves is applied on affected part daily twice for 2-5 days.

(ii) Stomachache:- The extract of leaves and flowers is taken twice a day for 5-8 days.

Viburnum Cotonifolium D. Don. Kulmosh Sambucaceae

Mode of administration

(i) Kwashiorkar:- 10 g fruit are eaten daily for a month.

(ii) Marasmus:- Fruits powdered, about 2-3 g of this powder mixed with honey and taken orally for 15 days daily at bed time.

Valeriana pyrolifolia L. Musk-e-bala

Valerianaceae

Disease(s) (i) Insomnia (ii) Abdominal pain (iii) Migraine

Part(s) used Root

Mode of administration

(i) Insomnia:- The root is powdered and 2-3 g of root powder mixed with lukewarm milk and taken at bed time for 2-5 days.

(ii) Abdominal pain:- The extract of 3-5 ml or 2-3 g root powder with cold water is taken daily for 2-3 days.

(iii) Migraine:- Leaves made into paste, applied on head twice a day for 5-10 days.

Verbascum thapsus L. Wantamook Scrophulariaceae.

Disease(s) (i) Cough (ii) Pneumonia

Part(s) used Flowers

Mode of administration

(i) Cough:- The flowers are kept in a glass of water over night. The water is taken early in the morning for 5-8 days.

(ii) Pneumonia:- The flowers are crushed and mixed with water and boiled. A pinch of salt is added to make tea. One cup of tea is taken at bed time for 10-15 days.

Viola betonicifolia Smith Bunafsha Violaceae

Disease(s) (i) Throat infection and chest congestion (ii) Fever (i) Throat infect(ii) Fever

Part(s) used Flowers

Mode of administration (i) Throat infection and chest congestion:- Flowers and sugar are mixed in 1:3 ratios and kept in closed tin for 20-30 days. This is called locally, Khambir. Half spoon of this is taken early in the morning daily.

(ii) Fever:- Decoction one cup of flowers is taken to an empty stomach for 2-5 days.

DISCUSSION

Ethnobotany is perhaps most important method to study natural resources and their management by indigenous people. It enables us to work with local people to explore knowledge based on experiences of ages. Ethnomedicinal investigation provides a wealth of information regarding the past and present relationship between plants and humans. Ethnomedicine even today plays an important role in rural areas and various locally produce drugs are still being used as household remedies for various diseases especially in these areas for different ailments

The study indicated that old traditional healers had greater knowledge and use of ethnomedicinal plant species than younger traditional healers. This may indicate that the indigenous medicinal plant use knowledge was declining among the younger generation, which could be attributed to the low interest of the younger generation to inherit and use ethnomedicinal knowledge.

The study indicated that over exploitation and deforestation were the main causes for the depletion of medicinal plants in the area. Although the medicinal plant species were under threat, traditional healers do not practice any conservation measures to ensure the sustainability of such plant resources. In order to prevent over exploitation that could lead to extinction, efforts should be made to conserve natural resources and to domesticate selected plant species which are commonly used by herbal practitioners. Preference for their use may be related to their availability or multipurpose use. The sustainable cultivation of medicinal herbs could facilitate industrial scale processing.

CONCLUSIONS

The commercial harvesting of threatened medicinal plants should be banned strictly. Most importantly the native communities need to sensitize to the sustainable use and conservation of these species.

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