

Traditional plant based therapy among rural communities of some villages of Baramulla district (Jammu and Kashmir)

Javaid Yousuf^{*}, Raj Kumar Verma¹ and Hamidullah Dar²

¹Department of Botany, Bundelkhand University, Jhansi, (U.P.), India.

²Department of Botany, Govt. Degree College, Kulgam, (J&K), India.

Abstract

The medicinal properties of plant species have made an outstanding contribution in the origin and evolution of many traditional herbal therapies. Keeping this thing in view, an ethno medicinal survey was carried out to study traditionally used plants by the rural communities of Baramulla district Jammu and Kashmir. It was found that due to poor condition of modern healthcare facilities and poverty, people of the area fully or partially rely on local medicinal plants for curing diseases. The study documented 32 plant species belonging to 22 families. Lamiaceae was the most represented plant family (5 species). Among the documented plant species 23 were herbs, 4 shrubs, 3 trees and 1 climber. The study revealed that the mostly used plant parts for therapeutic purposes were leaves followed by roots. During the course of study it was observed that most of the diseases treated were cough, rheumatism, fever and urinary disorders. It was found that the study area is fairly rich not only in medicinal wealth but also have deeply rooted traditional knowledge hence scientific investigations are desirable to validate their claims.

Keywords: Traditional, Baramulla, Rural, Communities, Therapeutic, Healthcare.

INTRODUCTION

Plants have played a vital role in the treatment of diseases since prehistoric times (Aseefa *et al.*, 2010). Almost all cultures in the world have a body of knowledge on the therapeutic properties of local flora (Houghton, 1995). The practice of ethno medicine is an important vehicle for understanding indigenous societies and their relationship with nature (Anyinam, 1995). Indigenous knowledge simply refers to health practices, knowledge and beliefs incorporating plant based remedies, spiritual therapies, manual techniques and exercises, applied singly or in combination to treat, diagnose and prevent illnesses or maintain well being (Oklatokun, 2010). The natural flora and fauna used by the specific group in the form of medicine in curing and preventing different ailments and diseases are known as ethno-medicine (Ali and Ghosh, 2010). It is well known that traditional medicine offers minimal side effects and relatively low cost as compared to other system of medicine. This is the reason that patients in developing countries such as Bangladesh (90%), Myanmar (85%), India (80%), Nepal (75%) Srilanka (65%) and Indonesia (60%) have strong connection in this system (Kar and Barthakur, 2008). According to WHO, 80% of the people in developing countries still depend on local medicinal plants to fulfill their primary health needs (WHO, 2002).

The continuous exploitation of several medicinal plant species from the wild and substantial loss of their habitats during past 15

years have resulted in population decline of many high value medicinal plant species over the years (Tictin, 2004). The weakening of customary laws, which have regulated the use of natural resources, are among the causes of threatening medicinal plant species (Kala, 2005). Recently India enacted a number of measures of legislations (Indian Biodiversity Act, 2002) in compliance with Convention on Biological Diversity (CBD) and World Trade Organization in order to prevent the unfair exploitation of the biological wealth of the nation. These measures of legislation *inter-alia*, requires the immediate chronicling of the country's biodiversity and the associated indigenous knowledge (Tantray *et al.*, 2009). Except some fragmentary information regarding medicinal plants of study area, by Malik *et al.* (2011), not much information is available in published form and the area being hot spot in NW Himalayas, deserves a great attention for ethno medicinal research. In the present study, an attempt has been made to document the traditional therapeutic uses of the various plant species in rural communities of some villages of Baramulla district of Jammu & Kashmir.

MATERIALS AND METHODS

The state of Jammu & Kashmir constitutes the Northern most extremity of India and is situated between 32^o.17' and 36^o.58' N latitude and between 37^o.26' and 80^o.30' E longitude. Baramulla is one of the 22 districts in J&K state, situated at an average height of 1581m above mean sea level (AMSL) and is spread over an area of 4191 sq.kms. The district lies between 32^o-58' to 35^o-50' North latitude and 73^o-45' to 75^o-20' East longitude (Fig. 1). It is bounded in the North by district Kupwara, in the South by districts of Budgam, Poonch and parts of Srinagar and in the East by Ladakh. Line of control lies in its West. The climate of the Baramulla district is of Mediterranean type with four distinct seasons viz. Spring (March-May), Summer (June – August), Autumn (September- November) and Winter (December- February). The monthly mean temperature

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*Corresponding Author

Javaid Yousuf

Department of Botany, Bundelkhand University, Jhansi, (U.P.), India.

Email: javaid.nature@gmail.com

ranges from -0.03°C in January to 30.1°C in July. Average annual rainfall in district has been recorded as 1270 mm. Forests are one of the most important resources of Baramulla district, spreading over an area of 2963 sq. kms and the district has 71% area under forests (Raina,2002). Geologically the mountain enclosing the area are comprised of complex crystalline rocks such as granite, genesis and sedimentary rocks as slates, phyllites and schist's with embedded limestone. The rural communities like Gujjars, Bakarwals and Paharis inhabiting in district constitute a significant proportion of the district.

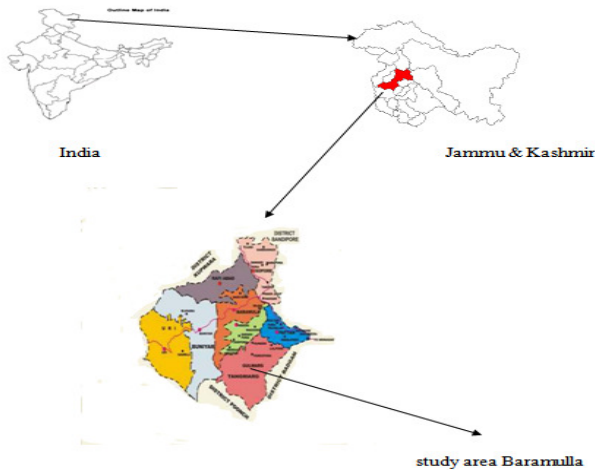


Fig 1. Geographical location of study area.

Tanghmagr tehsil in Baramulla district of Jammu & Kashmir is about 52 km. to South West of Srinagar and lies at 34°- 05' N latitude and 74°- 38' E longitude at an altitude of 2690 m AMSL. The seven (07) villages selected for study falls under Tanghmagr tehsil of the

district and are Buderkoot, Chontpathri, Chandilwanigam, Chaktreran, Drung, Gagaldara and Mohien. These villages were selected after consulting the local administration and elderly people keeping in view that the selected villages would represent all characteristics of the district. The general information about the villages was sought out from the elders of the selected villages. Interviews and discussions were held with knowledgeable persons, herbal healers and occasional practitioners. During the present study, a total of 57 informants were consulted who were between the age of 27-75 years. Informants were asked to share their traditional knowledge on the utilization of ethno-medicinal plants. This includes local names of medicinal plants used, ailments treated, habitat, mode of administration and dosage. Of the total informants 75% were males and 25% were females. To make the survey as accurate as possible, the information was cross-checked. Plants have been collected in their flowering and fruiting stage. Identification of the collected plants was done from KASH herbarium of Kashmir University, various published floras and important works like, flora of Srinagar, Kashmir (Javeid, 1968), a reflection of flora of Kashmir (Kachroo, 1978), contribution to flora of Kashmir (Wali *et al.*, 1964) and flora of Ladakh (Kachroo *et al.*, 1977). All the herbaria sheets were deposited in the herbarium of B.U, Institute of Basic Science, Jhansi U.P. for authenticity and future use.

Enumeration

In the enumeration plant species are arranged in an alphabetical order with their botanical name followed by family, local name, plant part(s) used and traditional therapeutic uses (Table 1).

S.No	Botanical name/ Family	Local name	Plant Part(s) used	Traditional therapeutic uses
1	<i>Achillea millefolium</i> Linn. (Asteraceae)	Pahilgaus	Leaves	Decoction obtained from leaves is administered orally in case of headache, fever and urinary-disorders. Fresh leaves are chewed to get relief from toothache.
2	<i>Adiantum venustum</i> D.Don. (Adiantaceae)	Gueteer	Leaves.	Decoction made from leaves is used to treat stomach pain, cough and urinary disorders.
3	<i>Ajuga bracteosa</i> Wall. (Lamiaceae)	Janiadam.	Leaves.	Decoction is administered in case of diarrhoea. A poultice made from the leaves is applied to the wounds.
4	<i>Amaranthus caudatus</i> Linn. (Amaranthaceae)	Leesa.	Leaves.	The herb is mostly taken in the form of vegetable. Decoction made from leaves is used to treat diarrhoea and fever.
5	<i>Aquilegia fragrans</i> Falc. (Ranunculaceae)	Abeithnoth.	Roots.	Dried roots are powdered and mixed with ghee to form a paste which is applied externally on wounds. Root powder mixed with warm water is taken orally to treat jaundice.
6	<i>Artemisia benthami</i> Wall. (Boraginaceae)	Khazaban	Leaves, roots.	Leaves are boiled in water and the extract obtained is taken orally to increase lactation. The powder formed from dried roots is taken along with milk/water to treat fever, throat diseases, hair fall and to get relief from cough & cold.
7	<i>Atropa acuminata</i> Royle. (Solanaceae)	Meithkafal.	Whole plant.	The whole plant is boiled in water and the decoction obtained is taken orally to treat cough. Paste of the plant is applied externally on boils and in case of rheumatism.
8	<i>Berberis lyceum</i> Royle. (Berberidaceae)	Kaudach (Rasvat).	Roots.	Root bark or whole roots are boiled in water till a semi solid mass is obtained called Rasvat which is applied externally in case of eye disease.
9	<i>Cannabis sativa</i> Linn. (Cannabinaceae)	Bange.	Leaves, flowers	Extract obtained from flowers is given orally to treat night urination in children. Dried leaves and secretion of young leaves as well as its flowers are used as narcotic.
10	<i>Cuscuta europaea</i> Linn. (Convolvulaceae)	Kukilport.	Stem.	Stems cut into small pieces are taken along with water to cure swelling of testicles and falling of hairs.
11	<i>Datura stramonium</i> Linn. (Solanaceae)	Datur.	Seeds	Seeds are sun dried and crushed to make powder which is mixed with water to treat cough. Paste is applied externally in case of headache.
12	<i>Dioscorea deltoidea</i> Wall. (Dioscoreaceae)	Kruch.	Roots.	Powder obtained from dried roots is administered orally along with water/milk to treat constipation. Paste is applied externally to relieve joint pain.

13	<i>Ficus carica</i> Linn. (Moraceae)	Anjeer.	Fruits.	Fruits are boiled in water for half an hour and is left till it cools down. This liquid is taken orally to treat throat problems and cough.
14	<i>Foeniculum vulgare</i> Mill. (Apiaceae)	Badiyan	Seeds.	Seeds are grinded to form a powder, administrated along with warm water to get relief from cough, toothache and kidney disorders. To cure stomach disorders seeds are boiled in water for a long time and the steam formed popularly know as Arce Badiyan is inhaled.
15	<i>Hypericum perforatum</i> Linn. (Hypericaceae)	Therma.	Whole plant.	The whole plant is dried in sunlight and then grinded to form a powder which is administered along with water or milk to treat rheumatism .
16	<i>Indigofera heterantha</i> Wall. (Papilionaceae)	Zand.	Bark.	Peeled bark from the rhizome is crushed and added to a glass of water, left for an hour which is administered orally to relieve abdominal pain.
17	<i>Juglans regia</i> Linn. (Juglandaceae)	Doon Kul	Leaves,bark.	Decoction of leaves is given in case of intestinal worms. Bark is used for cleaning the teeth.
18	<i>Lupinus polyphyllus</i> Lindl. (Papilionaceae)	Trum (Lopine)	Leaves	Leaves are crushed to form a paste and is applied on wounds and boils.
19	<i>Mentha arvensis</i> Linn. (Lamiaceae)	Pudne.	Leaves.	Extract from leaves is administered orally to get relief from indigestion and fever.
20	<i>Nepeta cataria</i> Linn. (Lamiaceae)	Gand Soi	Leaves.	Fresh leaves are grinded to form an extract which is taken in case of vomiting.
21	<i>Paeonia emodi</i> Wall. (Paeoniaceae)	Mydh	Roots	Dried roots are crushed to form powder which is taken along with local sweet dish called Halwa. It is also administered along with milk in early morning to get relief from body pain.
22	<i>Phytolacca acinosa</i> Roxb. (Phytolaccaceae)	Paddar hack	Leaves.	Young leaves are taken as vegetable. Leaves are also crushed to obtain extract to treat cough.
23	<i>Plantago lanceolata</i> Linn. (Plantaginaceae)	Gul.	Leaves.	Leaves are boiled in hot water and the extract obtained is administered orally in case of urinary disorders and cough.
24	<i>Prunella vulgaris</i> Linn (Lamiaceae).	Kalvuth.	Flowers	Flowers are dried and crushed to form a fine powder, mixed with oil/ ghee to form paste which is applied over wounds.
25	<i>Prunus persica</i> Linn. (Rosaceae)	Chenaum.	Leaves, fruits.	Decoction obtained from leaves is taken in case of abdominal pain.
26	<i>Rosa damascena</i> Mill. (Rosaceae.)	Jangli gulab	Flowers	An extract obtained from crushed flowers is used to cure skin diseases. Flowers mixed with sugar are fermented to form paste (Khambir) which is administered in case of cough and cold.
27	<i>Rumex nepalensis</i> Spreng. (Polygonaceae)	Abuj	Roots.	Root powder is administered orally along with milk/water to cure cough and constipation while paste is used in case of skin diseases.
28	<i>Salvia mocroftiana</i> Wall. (Lamiaceae).	Buder tuned	Leaves	The extract of boiled leaves is used as mouth wash while gargling with extract reduces inflammation and swellings of mouth and throat.
29	<i>Taraxacum officinale</i> Wigg. (Asteraceae).	Hand.	Leaves, roots	After child birth ladies are served with cooked dry leaves & roots of the plant to prevent blood loss and to strengthen their bones.
30	<i>Thymus linearis</i> Benth. (Lamiaceae)	Jangli Javind	Whole plant.	Dry plant is crushed to form powder which is boiled with milk and administered orally to treat cough and fever
31	<i>Urtica dioica</i> Linn. (Urticaceae)	Soi.	Whole plant	The whole herb is crushed to obtain extract which is used to cure fever and jaundice. Roots along with oil are crushed to form a paste which is applied to treat wounds.
32	<i>Viola odorata</i> Linn. Voilaceae	Banafsha	Whole plant.	Plant is crushed, mixed with sugar to form a paste popularly known as KHAMBIRI BUNAFSHA. The paste is consumed with famous Kashmiri KAHWA to treat cough and headache. Paste is also applied over the affected part of skin.

RESULTS AND DISCUSSION

In the present study, a total of 32 plant species belonging to 22 families that were traditionally used by rural communities of Baramulla district in their day to day life to cure various ailments have been documented along with their uses. In the plant families, Lamiaceae represented maximum number of species (7 species) followed by Asteraceae, Papilionaceae, Polygonaceae, Rosaceae and Solanaceae (2 species each). Out of the reported plants, 24 were herbs, 4 shrubs, 3 trees and 1 species climber (Fig. 2). Considering the habit of the medicinal plants, herbs were more prevalent than trees, shrubs and climber. The high usage of herbs in the study region could be an indication of their abundance as it has been witnessed during visits to the study sites. The study found that many different parts of the medicinal plant species were used as medicine (namely whole plant, leaves, roots, seeds, flowers, bark,

stem, fruits) but the most commonly used plant part was leaf (15 species) followed by root (7 species), whole plant (5 species), flower (3species), fruit (2 species), bark (2 species), seed (2 species), and stem (2 species) (Fig. 3). Medicines were administered in different forms including powder, paste, decoction (liquid obtained by boiling of the medicinal plants in the solvent) and infusion (plant powder/paste mixed with the solvent). The present study revealed that ethno-medicinal plants are being used to treat the diseases like headache, fever, urinary disorder, toothache, cough, rheumatism, jaundice, boils, eye disease etc. by the people of Baramulla district. Largest number of diseases treated by different plant parts are cough (12 species) followed by fever (06 species), wounds (05 species), rheumatism (02 species), urinary disorders (02 species) and diarrhoea (02 species) (Fig.4.). Similar study was carried out by Khan *et al.* (2004) in Uri tehsil of Baramulla district in

which 27 plant species were documented to treat various kinds of ailments. It seems to be in agreement with the present study. Another study carried out by Kumar *et al.* (2009) in Kishtwar, Jammu and Kashmir is in conformity with the present study as most of the documented plant species were found to be having traditional use in their study. The rural communities of Baramulla district have been using these plant species for therapeutic purpose since time immemorial. Due to more demand of traditionally used plants, people of study area have been motivated for conservation of these plant species.

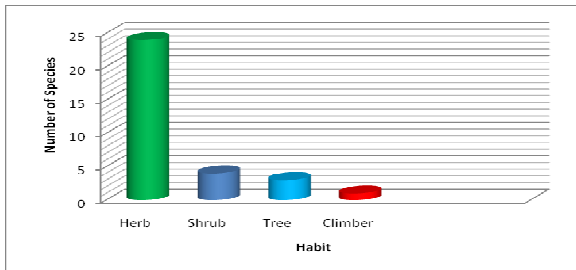


Fig 2. showing habit of different plant species documented.

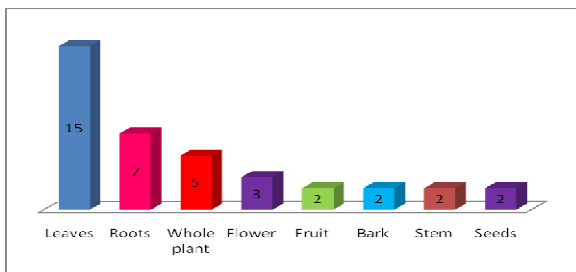


Fig 3. Showing plant parts used along with maximum number of plant species.

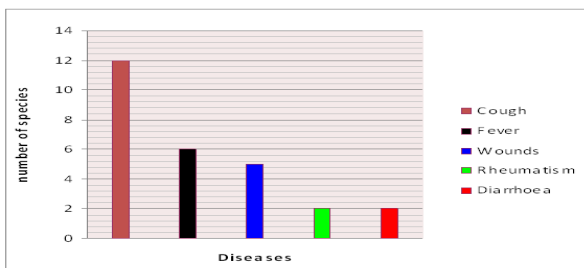


Fig 4. Showing different diseases documented during study

CONCLUSION

Preservation of ethno-medicinal uses of plants is an indispensable obligation for sustaining the medicinal resources of mankind. The area under study is fairly rich not only in medicinal plant species but also have enormous amount of traditional knowledge among the people. Extensive research on such traditional plants is of prime importance to scientifically validate their ethno-medicinal claims. Nowadays much of the traditional knowledge is being lost as the traditional culture is disappearing. Hence, documentation of the traditional practices of herbal medicine will be coherence in future. There is an urgent need of conserving the medicinal plants that are over harvested so that in future the coming generation could benefit from these precious plants that are a real gift of nature for the mankind.

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