



## Ethnobotanical Study of Medicinal Plants of Pir Panjal Range of Himalayas (J&K)–India

Sartaj Ahmad<sup>1</sup> and Dr Suchi Modi<sup>2</sup>

<sup>1</sup>Research scholar at RNTU Raisen M.P, Department of Life science, Rabindarnath Tagore University Raisen M.P (464993) – India

<sup>2</sup>Associate professor at RNTU Raisen M.P, Department of Life science, Rabindarnath Tagore University Raisen M.P (464993) – India

### Abstract

This study will represent a systemic attempt to explore the knowledge of the native people about plants, which they use to cure diseases. And an attempt towards conserving the local knowledge of people to plants. The proposed study will present a list and uses of some medicinal plants distributed in the Pir panjal range of Himalayas Jammu and Kashmir India. This research work will provide information about ethno-medicinally useful plants grown in the region. In this study family, botanical name, local name, Ethno-medicinal uses will be studied each plant. The Pir panjal range is a prime land mark in the Kashmir region of Jammu and Kashmir UT and it known of diverse habitats such as rivers stems, meadows and steep mountain slopes. The area is located in temperate region comprising typical vegetation, dominated by a variety of economical species which plays a vital role in the rural life of people. The inhabitants are dependent on the plant resources for food, fuel, timber, shelter, fodder/ forage, house hold articles and traditional medicines in treating diseases like malaria, cancer gastro intestinal ailments etc. The Ethno botanical information on the medicinal plants would not only be useful in conservation of traditional cultures and biodiversity but also community health care and drug development.

**Keywords:** *Ethnobotanical, medicinal plants conservation, Pirpanjal range of Hamilayas J&K UT.*

### Introduction

Plants have been used in traditional medicine for thousand of years. Throughout the world the tribal people and ethnic race have developed their own custom, religious rites, folklore and songs. Numerous wild and cultivated plants have played a vital role in these cultures and the relationship has evolved over generations of experience and practice. The present synopsis highlights the occurrence of some common plants used in the Indian System of medicine to cure various diseases. The plants has been served and then collected from different districts of Kashmir valley of India particularly in Districts Kulgam, Shopain and Anantnag. Ethanomedicinal studies are of significant

value to discover contemporary drugs from indigenous medicinal plants resources. Field survey and interviews from the people have also been conducted to inquire about the occurrence of medicinal plants from these Districts.

Ethano-botanical surveys focus on the complex connection between local inhabitants and local plants including practices and cultural beliefs associated with different forms of uses. These studies are important in highlighting the value of native plants species e.g. for discovering novel drugs and their uses in India system of Medicine. The use of medicinal plants in human medicine is well

documented. Current knowledge on medicinal plants as a source for relief from illness dates back to the early civilization in China, India and the Near East. Ingredients provided by the plants have a wide range of medicinal properties. Globally, about 60%-80% of the people rely on herbal medicine as for primary health care needs. Subsequently, the number of plants being recommended for use as herbal medicines has increased day by day. In areas where there is perceived high cost of medical care, in Asia and Africa especially in Kashmir Division where health care is too backward and not up to mark. Traditional medicinal plants play a key role in disease and ailments.

The practice of Traditional medicine is widespread in China, India, Japan, Sri Lanka,

#### **About Knowledge Tradition and Practice of India (In Brief)**

The process of obtaining drugs from the plants is not new. Over the centuries people have dependant on the surrounding plant diversity for the treatment of various diseases. It is a fact that traditional system of medicines always play a key role in meeting the global health care needs and will play important role in near future. The system of medicines which are considered to be Indian in origin or the system of medicine, which have come to India from outside and got assimilated into India culture are known as Indian system of medicine (Prasad, 2002) India has a unique distinction of having six recognized system of medicine in the category are Ayurveda, Siddha, Unani and Yoga, Naturopathy and Homeopathy.

Human beings have always been conscious of the effects of plants on the body, mind and feelings. For example fragrant plants were used to cure the body and give the scenes of prosperity. Most of the herbs keep body in harmony with nature and maintain proper balance. The most precious flowers are accorded to Gods, and use of aromatic odor is recorded from a long times. Human has undoubtedly always been concerned with the question of health and survival and has sought within the framework of his

knowledge and solution to the problems of day today ailments and illness.

The World Health Organization (WHO) has recognized the role of traditional system of medicine and considered them a part of strategy to provide health care to the masses. The need for medicinal plants - based raw material is increasing annually world wide. International market size for herbals and medicinal plants is estimated at US \$ 5 Trillion by 2050 (WHO, 2002) of the above estimate about 75-80% of total export of raw material came from India (Medical, 2011). India is the home of about 17000. Species of plants out of which only 7500 are known for therapeutic uses. Ayurveda has reported about 2000 medicinal plant species followed by Siddha and Unani.

About 80 percent of population of Kashmir Division is dependent on Agriculture and is the prominent sector of the economy of Jammu and Kashmir India. Some of the local inhabitants collect medicinal plants from forests, mountains and valleys which are prominent in Jammu and Kashmir and sell them to the local traditional herbs sellers then supply these plants to the pharmaceutical companies in good prices. As Kashmir Division does not have as advanced health care system as rest of the country has so people wholly on medicinal plants to cure many disease and ailments in their day today life. The Kashmir Division of UT has been diverse flora and included as great numbers of medicinal plants. The rural areas of the division are still dependent on medicinal plants for their health care because of lack of health centers in the area. If the sustainable use of wild flora and cultivation of medicinal plants are promoted in the area, this will strongly effect on the socio-economic condition of the local inhabitants.

#### **Material and Method**

Under the study of medicinal plants, few districts of Kashmir valley has taken up which include Anantnag, Kulgam and Shopian. These districts have vast Wealth of Medicinal plants as the Pir Panjal Range of Himalayas fall in these districts. A detailed study was

taken up to identify the medicinal plants, their uses and likewise a few species were studied. Their distribution, exploitation, management and conservation have a great impact in our environment and ecological system. Selecting of Medicinal plants with a view to discovering new pharmaceutical agents can be achieved by various means, but plant selection based on its popular use is by far the most promising of by virtue of decreased time and cheaper cost incurred in this collection of the information (Albuquerque and Hamazaki 2006).

In the ethnobotanical surveys of medicinal plants, the most commonly used probability sampling methods are simple random method, stratified methods, or a combination of various complex sampling methods.

Considering that the non probability sampling methods does not guarantee that the sample is representative and does not enable generalizations regarding the population under study to be made (Kish, 1965). It is therefore not suitable for research involving statistical interference on the population.

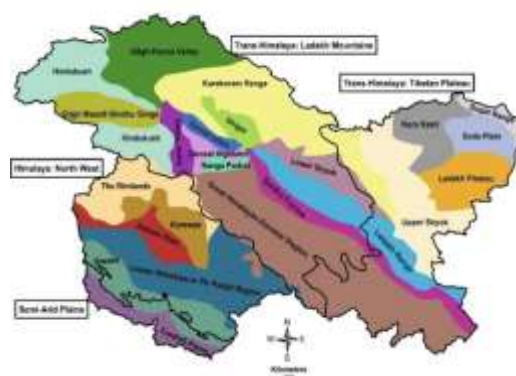
#### Location of Study Area:

A reconnaissance survey of the study area was conducted from last 6-7 months. The study site was selected from the Kashmir Valley. The Kashmir valley, also known as the vale of Kashmir. It is the portion of the Kashmir region administered by India. The valley is bounded on the south west by the Pir Panjal Range and on the north east by the main Himalayas range which are rich spots of biodiversity. It is approximately 135 km (84 mi) long and 32 Km (20 Mi) wide and drained by the Jhelum River (Figure.1).

The Himalaya, a global biodiversity hot spot, sustain about one fifth of the human kind West land with the north - western mountain ranges of the Himalaya, The UT of Jammu and Kashmir has been regarded as a heaven on earth and is also called the bio-mess state of India. This area located on the far north of the Indian Republic, is a mountainous zone in the north - west Himalayas.

**National Vegetation:** The UT is rich in cultural diversity of the people as well as diversity of flora and fauna in the forest areas, and domesticated species outside the terrestrial eco- system. The flora of Himalayan Kashmir comprises about 3054 species. The flora of Jammu District comprises 506 species. These figures include only the gymnosperms and pteridophytes. The species lists of different districts are being continually updated in taxonomic publications. The lower plants like fungi and algae have not been studied exhaustively; information on the micro- flora of isolated regions is available for some plant orders and families only. The plants of the western Himalayas are well known for their medicinal properties.

The area is a store house of medicinal and aromatic plants, which are used in Pharmaceutical and perfume industries. The list includes 135 species of important medicinal and aromatic plants. These are 11 medicinal plants in the temperate and alpine habitats. Some medicinal plants have been taken up for cultivation e.g *Dioscorea deltoidea* is now cultivated for its tubers which are rich in digenosis and yield cortisone, a steroid hormone.



**Figure 1:** Map of Pir Panjal range of Himalayas

#### Soil

The soils of the valley basis and the lower terraces textually vary from clay loams to loams with variable nitrogen content of  $P_2O_5$  and  $K_2O$  calcium and magnesium.

#### Forests

According to Champain and Seth's classification of Forests of India (1968) The

Kashmir valley forests fall under Himalayan Dry temperate type.

### Objectives and Scope of Research:-

- Promote insitu conservation of medical plants which are important to the Ayush and Folk system of Medicine.
- Promote Ex-sita conservation by supporting such programmer in rural / urban and part urban lands and waste lands.
- Establish Herbal gardens.
- Promote information, Education and communication.
- The primary objective of the study was to do a literature review on essential characteristics of medicinal plants which are being used for the management of various diseases in traditional medicine.
- It develops scientific temper and develops interest further research in this field.
- To provide opportunities for medicinal plants researchers to share information on the status of medical plants in the respective valley
- To develop a strategy to accelerate medicinal plant research.
- To develop a suitable research direction to maximize opportunities for all

### Results

A purposive study was used to select the 150 respondents. In purposive sampling the participants are selected on the basis of some specific criteria that are judged to be essential. The researches deliberated selected community members with a long period of resident in the community, which signify knowledge of the natural environment and the use of natural resources to fulfill basis needs. Data was collected through traditional healer's survey interviews and local community questionnaires information on identification through a census with 10 traditional healers who were there in the area. The interviews were facilitation by translators. Local medicinal knowledge of plants use was obtained from questionnaires administered to the local community members. The questionnaires were designed to answer the following research questions: (1) which medicinal plants species do you know in the wild? (2) What is the plant used for? (3) Which plant parts are used?

The names of the plants known by the traditional healers and local community members were noted in the checklist containing the vernacular and common names their uses and parts of the plant used for the medicinal value. The result of the study of medicinal plants and their parts are shown in the table 1 as under:

**Table 1:-** Ethno medicinal uses of locally found medicinal plants of the Pir Panjal area

S. No	Taxon name	Local name	Family	Part used	Ethanomedicinal uses
1	Acontium heterophyllum	Peewakh	Ranunculaceae	Root	Antidote for snake bites.
2	Achilea millefolium	Berguer, Pahal Gassesh	Asteraceae	Rhizome, leaves	Headache, cough Tooth ache
3	Amebia benthamii	Kah Zaban	Boraginaceae	Rhizome	Common cold, cough, fever, blood purifier
4	Acorus calamus	Via Gander	Acoraceae	Rhizome	Stomachic, Diarrhea, cough, swellings, joint pain
5	Cannabis Sativa	Bhang	Cannabinnaceae	Leaves, seeds and stem	Ear-ache, blood purifier, scabies and piles

6	Cascuta reflexa	Kukliporte	Cuscutaceae	Whole plant	Joint pains, wound healing and falling of Hairs
7	Berberis Lyceum	Kawdach	Berberidaceae	Roots, Fresh Fruit	Indigestion, Constipation
8	Euphorbia Helioscopa	Gurisochol, Gandi Booti	Euphorbiaceae	Seeds, Roots and latex	Abdominal cramps, cholera and eruptions
9	Euphorbia wallichia	Guridud/Harbi	Euphorbiaceae	Stem, leaves latex	Skin diseases, and asthma
10	Iris Kashmiriana	Mazarmund	Iridaceae	Whole plant	Joint pains
11	Malva Sylverstris	Sotal	Malvaceae	Seeds	Cough, fever, eye sight
12	Urtica Dioca	Soi	Urticaceae	Leaves and Roots	Rheumatism
13	Ficus Carica	Anjeer	Moraceae	Stem, milky latex, fruit pulp	Birthrate control, insect bite and warts
14	Pinus roxburghii	Chad	Pinaceae	Seeds and gums	General weakness after child birth
15	Rosa webbiana	Gulab	Rosaceae	Flowers	Cough and colds.
16	Nasturtium officinale	Kulhak	Brassicaceae	Leaf	Stomachic
17	Saussurea costus	Kuth	Asteraceae	Rhizome	Joint pain, back pain, sole ulcers, dysentery, fever, urinary problems
18	Zizphjus maritiana		Rhamnaceae	Leaves	Skin rashes
19	Lamium album	Poshkar	Lamiaceae	Whole plant, leaves, flowers	Cough, metrorrhagia
20	Oxalis corniculata	Tsok-tsen	Oxalidaceae	Whole plant, leaves	Toothache, convulsions, Blood purification, Diarrhoea
21	Rheum emodi	Pambechalan	Polygonaceae	Leaves	Rheumatic pain, wounds, Dislocated joints, Boils
22	Rubia cordifolia	Rubes	Rubiaceae	Roots	Stomachache, jaundice
23	Gallium aparine	Loothar	Rubiaceae	Leaves	Jaundice, antiseptic
24	Geum elatum	Shoonkar	Rosaceae	Root	Astringent, dysentery and diarrhoea
25	Tussilago farfara	Bann Hulla	Asteraceae	Leaves	Astringent, emollient, expectorant, stimulant and tonic
26	Albies pindrow	Sal	Pinaceae	Bark	Rheumatism

27	Podophyllum hexandrum	Banwangun	Berberidaceae	Leaves and roots	Skining diseases, Gastric problems
----	-----------------------	-----------	---------------	------------------	------------------------------------



**Fig 2:** Some medicinal plants of Pir Panjal range of Himalayas. A) *Achillea millefolium*. B) *Artemisia vulgaris*. C) *Euphorbia wallichia*. D) *Iris kashmirina*. E) *Nasturtium officinale*. F) *Celosia cristata*

## Discussion

The aim of the present research is to explore the flora of medicinal value of the Pir panjal range of Himalayas of Jammu and Kashmir UT with emphasis of gathering information of local people of the area. It is the fact that tribals and local people believe and practice their own mode of first aid and therapy in case of suffering from an ailment. The rural people of Pir panjal area particularly depend on the surround forest available in the Himalayas for all most everything.

In the present survey ten medicinal plant species belonging to ten families. Where studied which were used as folk medicine as well as folklore for treatment of various diseases and first aid for the rural people of the Pir panjal area of Himalayas J&K UT. Most of the plants are used for curing for the joint pain cough and cold.

Frequent field trips and ethno medical surveys of the selected areas of Kashmir Valley were undertaken during last 6-7 months as per the guidelines suggested by Schulters, (1962), Jain, (1967). The information

about the use of the plants as medicine and folklore were recorded by personal interview with the people of these districts. An inventory of plants and plant products used by the people of rural and tribal areas in day to day life was prepared. Almost all the plants were collected in different reasons with the help of people parts of the plant used in the treatment of various problems and other related information were recorded. The information of plants was written in the field book. The data obtained from different districts, pertaining to local medicinally important plants, were carefully recorded. The information collected from the local people were further verified and checked by some knowledgeable person on the study area. Every such plant was studied for its identification. The chemical constituents written for each species of plant in the enumeration have been taken from Glossary of Indian Medicinal plants (Chopre, *et al*, 1956)

### Conclusion

Medicinal plants and contribute significant to human health. Use of medicinal plants by Kashmir people from has a long history and here we report medicinal plant species used traditional health care system of Kashmir. This is most comprehensive review to date and may provide a base for further endeavor knowledge related to medicinal plants of Kashmir. The multiple uses report in the study indicates that scientific investigations are useful in the validation of traditional medicinal practices for the development of new therapeutic agents from medical plants of Kashmir.

### Acknowledgement

We are thankful to the university grants commission New Delhi for providing the financial support for the study and thanks to all the local area people for their help and technical support.

### References

1. Ambasta, S.P. "The Useful Plants of India." *Publication and Information Directorate, C.S.I.R., New Delhi* (1986).
2. Chatterjee, A. and Satyesh, C.P. "The Treatise on Indian Medicinal Plants. Vol.-1. Revised 2005." *Publication and Information Directorate, C.S.I.R., New Delhi* (1991).
3. Chauhan, N.S. "Medicinal and Aromatic Plants of Himachal Pradesh." *Indus Publishing House, New Delhi* (1999).
4. Hooker, J.D. "(1872-1897): The Flora of British India." *Lalit Mohan Basu, Allahabad* 1.8.
5. Joshi, V. and Joshi, R.P. "Some plants used in ayurvedic and homoeopathic medicine." *Journal of Pharmacognosy and Phytochemistry* 2.1 (2013): 269-275.
6. Khan J.A. "Folk Medicinal uses of Some Medicinal plants Used among the Tribal people of Poonch District of Jammu and Kashmir." *PhD Thesis Submitted to Choudhary Charan Singh University Meerut* (2013).
7. Khan, J.A. and Sudhir, K. "Ethno veterinary value of some plants used against snake bite in Poonch district of Jammu and Kashmir, India." *Journal of Plant Development Science* 4.2 (2012a): 111-114.
8. Khan, J.A. and Sudhir, K. "Ethno medicinal uses of some medicinal plants among the tribal people of Poonch district of Jammu and Kashmir North West Himalaya India." *Journal of Plant Development Science* 2 (2012b): 305-310.
9. Khan, J.A. and Sudhir, K. "Ethno medicinal uses of some Medicinal plants used against snake bite in Poonch District of Jammu and Kashmir North West Himalaya India." *Life science Leaflets* 10(2012c): 123-132.
10. Khan, J.A. and R. Paul. "Folk medicinal plants used on diabetes and blood purification in Poonch district of Jammu and Kashmir North West Himalaya India." *Asian Journal of Agriculture and Life Sciences* 2.1 (2017): 1-5.
11. Khan, J.A., Wani T.A., Sudhir, K. and Ghandhi, R. "Ethno medicinal plants used for Toothache in Poonch District of Jammu and Kashmir." *Asian. J. Exp. Bio. Sci.*, 3.2 (2012): 415-449.

12. Khare, C.P. "Indian Medicinal Plants: An Illustrated Dictionary." Springer-Verlag Berlin/Heidelberg (2007).
13. Kumar, N. "Survey on Medicinal Plants used in Indian System of Medicine Tehsil Joginder Nagar, District Mandi, H.P., India." *International Journal of Environmental Biology* 4.1 (2014a): 82-86.
14. Kumar, N. "Unani Medicinal Plants Used in Gynological Disorders from Tehsil Joginder Nagar, District Mandi, H.P., India." *International Journal of Scientific and Research Publications* 4.4 (2014b): 1-8.
15. Kumar, N. "Important Medicinal Plants of Tehsil Joginder Nagar, District Mandi, H.P., India." *International Journal of Research in Pharmaceutical and Biosciences* 4.2 (2014c): 15-21.
16. Kumar, N. "Some Medicinal Plants of Tehsil Joginder Nagar, District Mandi, H.P., India." *International Journal of Basic and Applied Medical Sciences* 4.1 (2014d): 210-222.
17. Kumar, N. "Some Plants Used in Ayurvedic and Unani Systems of Medicine, Tehsil Joginder Nagar, District Mandi, H.P., India." *International Journal of Food, Agriculture and Veterinary Sciences* 4.1 (2014e): 73-80.
18. Kumar, N. "Seeds of Some Plants Used in Unani System of Medicine from Tehsil Joginder Nagar, District Mandi, H.P., India." *International Journal of Geology, Earth and Environmental Sciences* 4.1 (2014f): 211-215.
19. Kumar, N. "Studies on Medicinal Plants used in Ayurveda, Unani and Sidha System of Medicine, available in Tehsil Joginder Nagar." *Research in Pharmacy* 4.3 (2014g): 1-8.
20. Prajapati N.D., Purohit S.S., Sharma A.K. and T. Kumar. "A Handbook of Medicinal Plants." Agrobios Publisher, Jodhpur, India (2003).
21. Prasad, L.V. "Indian System of Medicine and Homoeopathy Traditional Medicine in Asia." New Delhi: WHO- Regional Office for South East Asia (2002): 283-286.
22. Ravishankar, B. and Vinay, J. S. "Indian System of Medicine: A brief profile." *Afr. J. Trad. CAM*, 4.3 (2007): 319-337.
23. Sharma M.J. and Jamwal P.S. "Flora of Upper Lidder Valley of Kashmir Himalaya." *Botanical Sciences Division Regional Research Laboratory Jammu, Scientific Publishers India* (1998).
24. Wani, T.A., Narendra, K., Jameel, K., Syed, N.S. and Suresh, C. "In, vitro cytotoxic activity of *Skimmia anquetilia* Taylor and Airy Shaw Essential oil on various Human cancer cell lines." *International Journal of Research and Pharmacy and Chemistry* 6.1(2016): 89-94.
25. Paul, R. and Khan, J. A. "Ethnomedicinal plants used in Kangra district of Himachal Pradesh Western Himalaya." *Asian Journal of Agriculture and Life sciences* 2.1 (2017): 6-9.

**Source of support:** university grants commission New Delhi;

**Conflict of interest:** The authors declare no conflict of interests.

**Cite this article as:**

Ahmad, S. and Suchi, M. "Ethnobotanical Study of Medicinal Plants of Pir Panjal Range of Himalayas (J&K)-India." *Annals of Plant Sciences*.11.12 (2022): pp. 5599-5606.

DOI: <http://dx.doi.org/10.21746/aps.2022.11.12.3>