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A Survey of Ethno-Medicinally Novel Plant Species of Gulmarg Valley in Kashmir Himalaya, India

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Abstract

From recent times, plants have traditionally been used for the treatment of human and livestock diseases in Kashmir Himalaya by different tribal local groups. However, this valuable source of knowledge is not amply documented, which obstructs their widespread use, evaluation and validation. The present research work was carried out to collect and gather local knowledge from tribal and nomadic people about traditional medicinal uses of plants. Indigenous knowledge was collected by interviewing people of different age groups. A total of 15 plant species belonging to 12 families were recorded as being used by local inhabitants for curing various ailments. The present study is of great significance as it provides a lead in documenting the knowledge of traditional herbal medicine. These ethno-medicinally important plants are un-paralled treasure of wealth and conservation of such plant species should be done by the concerned authorities. It should be realized that conservation and management of potential species are of utmost importance.

Keywords: *Kashmir Himalaya, Tribal, Knowledge, Indigenous, Wealth.*

1. Introduction

Medicinal plants have been used for centuries in traditional health care systems and numerous races around the worlds till rely on plants for their primary health care. With the recent advancements in plant sciences, there has been a tremendous increase in the use of plant based health products in developing as well as developed countries. About 70-80% around the world rely on medicinal plants for primary health care. Having minimum side effects and low cost, people in developing countries like Bangladesh(90%), India(80%), Nepal(75%), Sri Lanka(65%), and Indonesia(60%) have strong belief in this system of medicine. As estimated by the World Health Organization (WHO),the present demand for ethano medicinal plants is approximately US $ 14 billion per year. The Kashmir Himalayas, often referred to as terrestrial paradise on earth, is located at the north-western tip of the Himalayan biodiversity hot spot. The region supports a rich and spectacular biodiversity of great scientific curiosity and promising economic benefits owing to its topographic variations spanning from valley floor. Keeping in view the significance of the subject, present study was carried out to document of ethno-medicinally important plants in the Gulmarg valley of Kashmir Himalaya.

2. Study Area

The present study was carried out in Gulmarg valley which is geographically located at 34.05°N 74.38°E (Fig 1). Physiographically, Gulmarg lies in a cup shaped valley in the Pir Panjal Range of the Himalayas, at an altitude of 2,650 m (8,694 ft), 56 km from Srinagar. The soi in Gulmarg comprises glacial deposits, lacustrin deposits and moraines of Pleistocene age covering shales, limestone, sandstones and other varieties of rocks. The natural meadows of Gulmarg, which are covered with snow in winter, allow the growth of wild flowers such as daisies, forget-me-nots and buttercups during spring and summer. The meadows are interspersed by enclosed parks and small lakes, and surrounded by forests of green pine and fir. Skiing and other winter sports in Gulmarg are carried out on the slopes of Apharwat peak at a height of 4,267 m (13,999 ft). Many points on Apharwat peak and Khilanmarg offer a panoramic view of Nanga Parbat and Harmukh mountains.

Due its distinct geographic location, the area is inhabited by different ethnic groups such as Gujjars, Bakerwals and other nomadic people.

These groups have their own knowledge of traditional herbal medicine inherited from their forefathers. These medicines are well accepted by the local people since generations have experienced their efficacy in alleviating a variety of diseases.

3. Materials and Methods

The methods employed during the study were designed with the sole purpose of eliciting the precious wealth of information on the ethno-medicinal uses of plants practiced by the people residing in and around target site within Kashmir Himalaya. The area was visited several times for the collection of data during the year of 2017-2018. The local name and traditional uses of plants, with emphasis on medicinal uses were documented by interviewing the local elderly knowledgeable persons including local hakims. Literature concerning ethno-botany of this area has been consulted. A brief description about some of the medicinal plants is given in the table 1.

Table 1: Medicinal Plants

S. No.	Taxon name	Local Name	Family	Part used	Ethanomedicinal uses
1.	Arnebia benthamii	Kahzaban	Boriginaceae	Rhizome	Commoncold, cough,fever,blood purifier.
2.	Abies pindrow	Sal	Pinaceaea	Bark	Rheumatism
3.	Atropa acumniata	Chella lubbar	Solanaceae	Roots and Leaves	Cough and antispasmodic
4.	Berginia ligulata	Zakhmi hayat	Saxifraceae	Roots and Leaves	Intestine complaints and stomach ulcers
5.	Cannabis sativa	Bhang	Cannabinnaceae	Leaves,seeds and stem Stem,bark	Ear-ache,blood purifier, Scabies and piles
6.	Cedrus deodara	Divdar	Pinaceae	Stem leaves and latex	Skin rashes and external ulcers
7.	Euphorbia wallichia	Guri-dud	Euphorbiaceae	Flower	General weakness after childbirth
8.	Lavetera kashmeriana	Sozposh	Malvaceae	Seeds	Obesity,Diabetes,Liver infection
9.	Oxalis corniculata	Tsok-tsen	Malvaceae	Leaves and Roots	Toothache,convulsions,blood purificatios ,diarrohea
10.	Podophylum hexandrum	Banwangun	Berberidaceae	Seeds and gums	Skin diseases,gastric problems
11.	Pinus roxburghii	Chad	Pinaceae	Flower	Skin diseases and asthma
12.	Prunellavulgaris	Kalwauth	Lamiaceae	Rhizome	Mumps,skin irritation in pregnant women
13.	Sasseria costus	Kuth	Asteraceae	Rhizome	Joint pain, feve,back pain

					etc.
14.	Trillium govanianum	Tripiter	Melanthiaceae	Rhizome	Stomach problems
15.	Utrica dioica	Soi	Urticaceae	Leaves and Roots	Rheumatism and minor wounds

4. Results and Discussion

During the present survey 15 species of plants belonging to 12 families (as shown in the table) has been recorded those are used by the tribal and non-tribal people against different diseases. The recorded plant species were enumerated alphabetically in Table 1 along with their botanical and vernacular names, families, parts used and ethno-medicinal aspects. Among the recorded species, 12 species are herbs, and 03 species are trees. Different plant parts are used against different ailments but dominantly rhizomes, leaves and roots are used either in raw form or as aqueous extracts.

The floral and vegetation studies of Kashmir Himalaya have been carried out since first half of the twentieth century (Kaul et al., 1997; Rao, 1961). But, here it is pertinent mention that no study has been carried out till date to document the ethno-medicinally important plant species in the target area. Hence, our study is of great significance as it provides a lead in documenting the knowledge of traditional herbal medicine Inherited from our forefathers. It is felt that there is a need for the rapid documentation of the valuable indigenous knowledge in the face of the emerging threats of destructive overharvesting, habitat degradation and bio-piracy (Gadgil, 1996; Singh et al., 1994 and Utarsh et al., 1999). About 70 % of the identified medicinal plants of Indian Himalaya (PVP, 2001) are threatened by destructive harvesting. Recently, our country enacted a number of measures of legislation (IPA, 2002; IBA, 2002 and Dhar et al., 2000) in compliance with Convention on Biological Diversity (CBD) and World Trade Organization (WTO) in order to prevent the unfair exploitation of the biological wealth of the nation. These measures of legislation, inter-alia, require the immediate chronicling of the country's biodiversity and the associated indigenous knowledge.

5. Conclusion

The present study suggests that the traditional system of primary healthcare utilizes the plant resources as medicines in the studied area (Gulmarg Valley), India. The traditional knowledge system is known to few identified persons in the community and this knowledge generally inherited through the oral transfer in family lineages as there is no written document. Hence, our study is of great significance as it provides a lead in documenting the knowledge of traditional herbal medicine. The present generation people are least interested to practice the traditional medicines. Due to over exploitation, alien plant invasion and habitat fragmentation many plant species are threatened. These ethno-medicinally important plants are un-paralled treasure of wealth hence a great boon for the humanity. Hence, documentation and conservation of such plant species should be done by the concerned authorities. It should be realized that conservation and management of potential species are of utmost importance.

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