

Case Study

Indigenous Knowledge of Medicinal Plants: A Case Study of Gulmarg Area of J & K

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ABSTRACT

Ethnobotany is the scientific study of the relationships that exist between people and the plants. Ethnobotany aims to document the valuable knowledge of the tribal regarding the use of plants. The tribal people use the plants in their unique ways for various purposes mostly for the treatment of various diseases. There is a need to document this valuable knowledge as it is draining off at a rapid speed. An initiative was taken to document the ethnic knowledge regarding the medicinal plants in the Gulmarg and its allied areas in Kashmir Division of Jammu and Kashmir. During the survey about 80 plants, used for treatment of various diseases and ailments were documented. These plants are used for the treatment of various diseases like headache, toothache, epilepsy, gastric problems, skin disorders, pneumonia jaundice, etc.

Keywords

Medicinal plants,
Traditional
knowledge,
Disease, Ethno
medicine

Introduction

The medicinal properties of plant species have made an outstanding contribution in the origin and evolution of many traditional herbal therapies. These traditional knowledge systems have started to disappear with the passage of time due to scarcity of written documents and relatively low income in these traditions. Over the past few years, however, the medicinal plants have regained a wide recognition due to an escalating faith in

herbal medicine in view of its lesser side effects compared to allopathic medicine in addition the necessity of meeting the requirements of medicine for an increasing human population. About 70-80% people around the World rely on medicinal plants for major health care.

Through the realization of the continuous erosion of traditional knowledge of plants used for medicine in the past and the renewed interest at the present time, a need existed to

review this valuable knowledge of medicinal plants with the purpose of developing medicinal plants sectors across the different states in India. Our major objectives therefore were to explore the potential in medicinal plants resources, to understand the challenges and opportunities with the medicinal plants sector, and also to suggest recommendations based upon the present state of knowledge for the establishment and smooth functioning of the medicinal plants sector along with improving the living standards of the underprivileged communities. The review reveals that State of Kashmir harbours a rich diversity of valuable medicinal plants, and attempts are being made at different levels for sustainable utilization of this resource in order to develop the medicinal plants sector.

Forests have played key roles in the lives of people living in both mountains and lowland areas by supplying fresh water and oxygen as well as providing a diversity of valuable forest products for food and medicine. The age-old traditional values attached with the various forest types and the varieties of forest products (i.e., medicinal plants) have gained tremendous importance in the present century. Furthermore, the cosmetic industries are increasingly using natural ingredients in their products, and these natural ingredients include extracts of several medicinal plants. India and China are two of the largest countries in Asia, which have the richest arrays of registered and relatively well-known medicinal plants. Since the Indian subcontinent is well known for its diversity of forest products and the age-old healthcare traditions, there is an urgent need to establish these traditional values in both the national and international perspectives realizing the ongoing developmental trends in traditional knowledge. Apart from health care, medicinal plants are mainly the alternate income-generating source of underprivileged communities; therefore, strengthening this

sector may benefit and improve the living standard of poor people. A great deal of traditional knowledge of the use of various plant species is still intact with the indigenous people, and this fact is especially relevant with the mountainous areas such as the Himalaya due to less accessibility of terrain and comparatively slow rate of development.

Use and diversity in medicinal plants

In India, of the 17,000 species of higher plants, 7500 are known for medicinal uses. This proportion of medicinal plants is the highest proportion of plants known for their medical purposes in any country of the world for the existing flora of that respective country. Ayurveda, the oldest medical system in Indian sub-continent, has alone reported approximately 2000 medicinal plant species, followed by Siddha and Unani. The Charak Samhita, an age-old written document on herbal therapy, reports on the production of 340 herbal drugs and their indigenous uses. Currently, approximately 25% of drugs are derived from plants, and many others are synthetic analogues built on prototype compounds isolated from plant species in modern pharmacopoeia.

The northern part of India harbours a great diversity of medicinal plants because of the majestic Himalayan range. So far about 8000 species of angiosperms, 44 species of gymnosperms and 600 species of pteridophytes have been reported in the Indian Himalaya, of these 1748 species are known as medicinal plants. The maximum medicinal plants (1717 species) have been reported around the 1800 m elevation range. On the regional scale, the maximum species of medicinal plants have been reported from Uttaranchal, followed by Sikkim and North Bengal. The trans-Himalaya sustains about 337 species of medicinal plants, which is low compared to other areas of the Himalaya due

to the distinct geography and ecological marginal conditions.

Several plant species are endemic to the Himalayan region. Out of total known number of higher plants from India, approximately 46% are endemic to the Himalaya. Of the total medicinal plant species, sixty-two species of medicinal plants are endemic to the Himalaya and 208 extend their distribution to the adjacent areas, and are therefore classified as near endemic.

Over 200 species of Himalayan medicinal plants are consumed raw, roasted, boiled, fried, cooked, or they are used in the form of oil, spices, jams or pickle. The indigenous communities use some medicinal plant species as a source of food, fodder, timber as well as various other ethnobotanical purposes.

For example, apart from the use of *Myrica esculenta* and *Terminalia bellirica* as medicines, the fruits of these species are edible, the leaves are used for fodder and the wood is used for fuel. Approximately 81 species of Himalayan medicinal plants are known to be used for the extraction of oil. Of the total 675 species of Himalayan wild edibles, 171 are used for the treatment of diseases. The crop plants diversity is also a source of traditional medicine.

Materials and Methods

Country ----- India

State ----- Jammu & Kashmir

District ----- Bara Mullah

Elevation-----2, 690 m (8,830 ft)

Language ----- Kashmiri, English, Urdu and Pahari.

Gulmarg

Gulmarg (meadow of flowers) is a town, a hill station, a popular skiing destination and a notified area committee in Bara mullah district in the Indian administration state of J & K. The town is within the Himalayas and is within miles of the loc between India.

Geography

Gulmarg is located 52 km from Srinagar (Fig. 1). It has an average elevation of 8, 825 ft. Gulmarg is easily accessible from Srinagar, the capital of j & k in less than 2 hours by bus or car. Just 1 hour on the way is the town of Tangmarg. The adjoining areas of Gulmarg are *Tangmarg*, *Khilanmarg*, *Ferozpora*, *Drang* and *Baba Reshi*.

The local people have a good knowledge of the use of plants. The people still use many plants as medicines. The knowledge of the medicinal uses of plants is has been transmitted from one generation to next orally. It is mandatory to document the knowledge of these local people before the knowledge will drain off their information in a notebook. Also, hakeems were consulted who also gave some information to us. The information given by these persons were verified by confirming it from at least five other persons. The plants listed were searched with the help of volunteers and the photographs of the plants were taken in their natural habitat with a digital camera and documented.

Results and Discussion

A list of 59 plants belonging to 32 families was documented. These plants are used for various diseases and ailments like jaundice, rheumatism, headache, kidney stones, toothaches, constipations, skin disorders etc. The ethnomedicinal plants used by the local

people of the Gulmarg and its allied areas are given in Table 1 and some important ethnomedicinal plants are given in Fig. 2

The field trips were conducted in the area of study during 2018-2019. Many elderly people were consulted from the area. They provided us with ethnic knowledge regarding the medicinal plants and we noted.

Keeping in view the high cost and side effects of allopathic medicines, the use of the medicinal plants against different ailments plays a significant role in meeting the primary health care of the rural communities of Gulmarg and its allied areas. Gulmarg is

fairly rich not only in medicinal plants but has also deeply rooted traditional of these medicinal plants among the people. An immensely valuable database could be the outcome of this knowledge which in turn can provide baseline information for the commercial exploitation of bio resources.

This information could also be useful for the industry, pharmacologists, physicians, phytochemistry, botanists and alike interested in the development of the alternative therapies. But the traditional knowledge is draining off due to the urbanization. Thus the need of the hour is to speedily document this valuable information of ethnobotany.

Fig.1 Location of study site



Table.1 The ethnomedicinal plants used by the local people of the Gulmarg and its allied areas.

Botanical name	Local name	Family	Part used	Ailment/disease	Method of use
<i>Allium cepa</i>	Ghande	Liliaceae	Bulb	Bee sting Sprain Headache	Cut the onion into pieces and rub the pieces on the affected parts. Chop raw onion and tie over the sprain with a cloth. The paste of the onion bulb is applied on the forehead to cure headache.
<i>Juglans regia</i>	Doon	Juglandaceae	Bark of root	Plaque	Rub the bark of the root on the teeth, it kills germs and reduces plaque.
			Kernal	Bed wetting	Give 2-3 kernels long with few raisins to the child before sleeping for 10-15 days.
			Leaves	Ulcers and freezing injury of feet	The leaves are boiled in water and the mixture is used to wash the feet.
<i>Lavatera kashmeriana</i>	Saz-posh	Malvaceae	Flower	Sore throat	Make the paste of the flowers and tie it on the throat with the help of a cloth.
<i>Prunus dulcus</i>	Badam	Rosaceae	Fruit	Toothache	Burn the shells of almond and use the ash as tooth powder.
<i>Datura stramonium</i>	Datur	Solanaceae	Seeds	Toothache	Treat the affected tooth with the smoke of the burning seeds.
<i>Taraxacum officinale</i>	Haend	Astereaceae	Shoot	Fracture	Tie the fried shoot on the affected part.
				Weakness after delivery	The plant is cooked and is served to the women after their deliveries.
<i>Pinus wallichiana</i>	Kayur	Pinaceae	Resin	Influenza	Resin mixed with milk is taken twice a day for 5-10 days.
				Cracked heels	The resin is applied on the heels after cleaning with warm water.
<i>Achillea millifolium</i>	Pahail-gasseh	Asteraceae	Leaves	Tooth ache	Fresh leaves are chewed to cure the tooth ache.

Botanical name	Local name	Family	Part used	Ailment/ disease	Method of use
<i>Prunus aremeniaca</i>	Chaire kuj	Rosaceae	Kernal	Skin disease and rheumatism	Kernel is heated and then pressed to obtain the oil which is used against skin disease & rheumatism
<i>Cedrus deodara</i>	Deodar	Pinaceae	Headache and rheumatic pain	Stem and bark	Oil extracted from the stem and bark is use to massage the body to get relief from rheumatic pain & headache.
<i>Corriandrum sativum</i>	Dhanival	Apiaceae	Leaves Leaves	Insomnia Jaundice	Paste of the leaves is applied on fore head to induce sleep. 1-2 teaspoon fresh juice of leaves is mixed in 1 cup butter milk and taken 2-3 times daily.
<i>Prunus vulgaris</i>	Kulwauth	Lamiaceae	Flower tops	Headache	The flower tops are boiled in water and the mixture is used to cure headache and fever.
<i>Hyoscyamus niger</i>	Bazaar bhang	Solanaceae	Seeds	Toothache	The seeds are burned and the ash is used as tooth paste.
<i>Vitis vinefera</i>	Daech	Vitaceae	Leaves	Skin rashes	Fresh leaves are tightly tied witha cloth on the skin rashes and sores.
<i>Cannabia sativa</i>	Bhang	Cannabaceae	Leaves	Lice and dandruff	Leaf juice applied on hair removes lice and dandruff.
<i>Allium cepa var. aggregatum</i>	Pran	Liliaceae	Leaves	Fracture	Tie the fried leaves on the affected part.
<i>Urtica dioica</i>	Soi	Urticaceae	Roots	Pain in joints and cysts of feet	The roots are grinded and then boiled in mustard oil. The mixture is used against cysts of feet and against pain in joints.
<i>Rumex dentatus</i>	Abej	Polygonaceae	Roots	Constipation	Extract of roots is taken in quality of 2 teaspoons in a cup of tea, 2 times a day for 15-20 days for curing constipation.
<i>Dioscorrea deltoidea</i>	Kraeth	Dioscoraceae	Leaves	Weak eye sight	The juice obtained from the leaves is used as eye drops to treat weak eye sight and

					infection of eyes.
<i>Podophyllum hexandrum</i>	Wan wangun	Berberidaceae	Fruit	Gastric problems	Fruit is eaten in gastric problems.
<i>Arnebia benthami</i>	Kah zabaan	Boraginaceae	Roots	Pneumonia	The roots are added to tea and the tea is given to persons suffering from pneumonia.
<i>Foeniculum vulgare</i>	Badiyan	Apiaceae	Seeds	Abdominal pain	Tea prepared from the seeds is used to cure abdominal pain in children.
<i>Capsicum annum</i>	Wazul marchivangun	Solanaceae	Fruit	Dog bites	The fruit is rubbed on the affected part.
<i>Papaver somniferum</i>	Khash khaash	Paperveraceae	Seeds	Weak memory	The seeds are mixed with warm milk and taken early in morning for 15-20 days.
<i>Morus alba</i>	Tul	Moraceae	Leaves	Wounds	Chew the leaves and then tie on the wound.
<i>Trigonella foenum-graecum</i>	Meth	Fabaceae	Seeds	Fever	Tea made by boiling the seeds of fenugreek is effective against fever.
<i>Cuscuta parastica</i>	Koekli poth	Cuscutaceae	Whole plant	Cold	The soup made by boiling the plant in water is used.

Fig.2 Some ethnomedicinal plants of the study area (A) *Malva sylvestris* (B) *Acorus calamus* (C) *Achillea millifolium*, (D) *Hyoscyamus niger*

A



C

B



D



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