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Geographical study of medicinal plants in the foothills

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Abstract
The revival of interest in natural drugs especially those derived from plants, stands in the last decades mainly because of widespread belief that "green medicines" are healthier and safer than the synthetic ones. The use of herbal medicine reflects the long history of human interaction with environment. The Himalaya region is rich in diverse traditional knowledge system due to the culture and environmental diversity.
The description of Himalaya medicinal plants can be seen in ancient as well as modern literature including those Ayurveda, Yunani and Western systems of medicine nearly 20,000 species of plants, highlight 75 major species of medicinal flora out of which at least 25 were most sought after of during the last decade.

Keywords: traditional, diversity, synthetic

Introduction

The revival of interest in natural drugs especially those drived from plants, starded in the last decades mainly because of widespread belief that "green medicines" are healthier and safer than the synthetic ones. The use of herbal medicine reflects the long history of human interaction with environment. The Himalaya region is rich in diverse traditional knowledge system due to the culture and environmental diversity.
The term indigenous has been defined as "systems that are generated by internal initiative with in a local community itself. An indigenous system may be a new development". An indigenous knowledge is often considered as informal knowledge that exits in local societies in comparison with formal knowledge developed in Universities and Research Institute of modern society. Mountain societies of the Himalayan region have been largely dependent on natural resources, including biodiversity. Indigenous knowledge , in the context of biodiversity on maintaining environmental balance in various mountain ecosystems would be of "great value for scientists planners striving to improve conditions for the conservation of biodiversity in mountain systems".
Herbal tablets, herbal tonic herbal soaps herbal shampoos, herbal talcum powder, herbal toothpastes and herbal cosmetics have become popular consumers items. The very word "Herbal" has become the symbols of safety for these products in contrast to the "Synthetic" ones which has become highly unsafe for human consumption once science revealed their adverse effects on human health and the environment.
India is one of the twelve centers of mega biodiversity areas of the world with two biodiversity hot spots viz, western Ghats and Eastern Himalaya. The Himalaya region is bestowed with a varity of natural resources which have exploited by mankind since times immemorial. The description of Himalaya medicinal plants can be seen in ancient as well as modern literature including those Ayurveda, Yunani and Western systems of medicine nearly 20,000 species of plants, highlight 75 major species of medicinal flora out of which at least 25 were most sought after of during the last decade. It is believed that out of over 1,600 species of medicinal plants traditional used in India more than 50% species come from the Himalaya region. India has one of the oldest, richest and most diverse cultural traditions associated with the use of medicinal plants. It represents a striking example of the intimate link between biodiversity cultural diversity. The remarkable fact is that it is still a living tradition. This is borne out by the fact that there still exist around a million traditional, village- based carriers of herbal medicine traditions in the form of traditional birth attendants, bone-setters, herbal healers and wandering monks who use hundreds of ecosystem specific bio-resources. Apart from these specialized carriers, there are million of households , women and elders who have traditional knowledge of herbal home remedies and of food and nutrition. There is enormous diversity in these local health cultures because they are ecosystem and ethnic community specific.
In recent years there has been a sudden rise in the demand of herbal products and plant based drugs across the world resulting in the heavy exploitation of medicinal plants. Uncontrolled unscientific harvest of several species has resulted in the drastic decline of species and habitat degradation. Several authors eg. Maikhuri *et al.*, (2001) have recommended ex-situ conservation and domestication of medicinal plants in the region. It is noted that a large number of tree species found in the Himalaya region have great potential to become raw material for modern pharmaceutical industries and other uses. Such multipurpose species have largely been neglected by the agencies dealing with medicinal plants (Adhikari *et at.* 2003) [1]. Medicinal plants are traditionally derived from forests by the local communities who depand on these plants for their subsistence needs. The over increasing demand for medicinal plants parts has put tremendous pressure on forest vegetation. There is an urgent

need to protect the fast disappearing medicinal plants based traditional knowledge, which is still abundant in the Himalaya and its foot hills.

Ancient Indian and world literature in medicine suggests that primitive people used several kinds of medicinal plants for combating diseases.

As civilization grew, people come to kwow more and more about the healing properties of plants and their mode of treatment. Every age has produced a distinct culture of healers and the diseases during those early days were believed to be due to the visitation (wrath) of punishing Gods and evil sprits.

Aims and Objectives

Himalaya has been a continuing treasure of medicinal phyto-diversity, since a long antiquity as many plant species of this area have medicinal value and were being

used by local people for curing various diseases and to maintain their health. Garhwal Himalaya, due to varying topography has many remote area and in the absence of proper communications their health care system was totally based on indigenous uses of plants. So the present study in the foothills of Himalaya has been undertaken to aim the following objectives:

- To enlist the plant species which are being used in health care system of foot hills of Garhwal Himalaya by traditional people.
- To work out varies conservation measures to conserve the medicinal phyto- diversity recorded during the present study.
- To establish the fact that the indigenous knowledge although not claimed but is science based.
- To collect the enlisted plants and the identified them.

Brief Review of Literature

Although Himalaya has been a continuous treasure trove of medicinal phyto-diversity and has been a continuous source of various ethno-botanical aspects for tribes and ethnic groups. Some important contributions to the medicinal uses of plants appeared in the recents years are as follows:

Issar (1981) [6] worked on some medicinal plants for animal treatment from Uttarakhand Himalaya. Tiwari *et al*. (1984) prepared some notes on phytochemical screening of medicinal plants from kumaun and Garhwal Himalaya. Pandey (1993b and 1994) described some herbal medicinal plants from Uttarakhand Himalaya. Samant (1995) worked on the medicinal plants of Himalaya and describesd them as Himalaya ki jari bootiyan. Dhar *et al*. (2000) conserved medicinal plants –a case study in the Indian Himalaya. Airi *et al*. (2000) worked on assessment of availability and habitat preference of Jatamansi a critically endangered medicinal plants of west Himalaya. Ahuja (2001) [2] described some medicinally plants Garhwal Himalaya. Joshi *et al*. (2001) worked on forest cover assessment in western Himalaya in relation to medicinal plants. Badola and Pokhariyal (2001) documented agro techniques and post harvest processing of medicinal plants of Himalaya region. Kala (2000 and 2002) [7] worked on status and conservation of rare and endangered medicinal plants of trans- Himalaya zone. Badola (2002) reported some paper on endangered medicinal plants species and worked out the priorities and action plan to conserve them. Bhojvaid (2002a) prepared on inventory and worked out quantitative of Vanaspati Van for in- situ conservation in Chakrata forest division, Uttarakhand. Kala (2003) [8] worked on commercial exploitation and conservation stasus of high value medicinal plants across the Border line of India and Nepal in Pithoragarh.

The various medicinal aspects plants of Kumaun Himalaya have been worked out by a number of workers. Shah and Jain (1980) worked on some medicinal plants of Kumaun Himalaya. Pangtey and Rawal (1987 and 1989) have made comprehensive studies on the contribution of ethano- botany to alpine region of Kumaun Himalaya. Pangtey *et al*. (1989) prepared some notes on ethano-botanical notes on Bhotiya tribes of Kumaun Himalaya . Maheswari and Singh (1990) reported the herbal remadies of used by Boxas of Nainital district. Arya *et al*. (1999) made some ethano-botanical studies on the tribal areas of Almora district. Pandey *et al*. (1999) prepared some notes on ethano-botany of Kumaun Himalaya. Uniyal *et al*. (2002) described current studies and distribution of commercially exploited medicinal and aromatics plants in Gori valley Kumaun Himalaya.

Although Garhwal Himalaya have extensively been explored for its medicinal phyto- diversity and its indigenous ethano-botanical uses, but some of the recent contributions are:

As there is a paucity of literature on the medicinal phyto-diversity and their indigenous and ethnobotanical uses in the foot hills of Garhwal Himalaya, Which is a transition zone in between Himalaya ranges and plains , the present study has been under taken.

Conservation Strategies

In all cultures, the old system saw period of decline and than neglect with advent of "modern science". One major impact of this neglect has been that all wisdom has been relegated to tribal cultures and other based communities who still drive the benefits of this ancient heritage.

The most important cause of depletion and danger for the medicinal plants come from man made pressure. Illegal and unscientific collectors, over-exploitation and trade have resulted in peril of at least some species. Human activity and unsustainable harvesting in the wild have been identified as one of the biggest cause of reported phenomenon loss of species.

The disappearance of the ecosystems led to the loss of the genetic diversity in natural populations a process known as gene erosion. It is realized that many medicinal plants face extinction or severe genetic loss and deserve immediate conservation strategies and the potential that plants hold as an inexhaustible reservoir of useful chemical compounds for controlling the current non curable diseases.

Since many of the medicinal plants are not commercially cultivated and gathered from wild resources, the new trend has resulted in unmindful and unlawful over exploitation and subsequent extinction of many plant species, especially of medicinal significance due to loss of their fragile ecological habitat niche and over all environmental degradation.

There is growing demand for plant based medicine. Proper utilization of medicinal plant resources of India requires a comprehensive approach, so there is a need for retrieval and documentation of this information national level, developing

appropriate technologies and creating conditions for gainful utilization of available and developed resources. Such an exercise may go a long way for proper utilization of the resourse and taking up further work to fill in the gaps.

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