

## Rural Communities and Ethno Medicinal Plants, Uses and their Conservation

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The Indian Himalayan Region (IHR) has long been a source of medicine for the millions of people of this region including people living in the other parts of India. The pharmaceutical sector in India is using of 280 medicinal plants, of which 175 are found in the IHR [1]. So far, about 8000 species of angiosperms, 44 gymnosperms, and 600 pteridophytes have been reported in the Indian Himalaya [2]. Of these, 1748 species are used as medicinal plants [3], and maximum used as medicines reported from Uttarakhand [4], of these, sixty two species are endemic to the Himalaya [5].

Medicinal plants are essential natural resource which constitutes one of the potential sources of new products and bioactive compounds for drug development [6]. Traditional medicinal uses contribute significantly to such drug development. It is estimated that about 60% of the world population and 80% of the population of developing countries rely on traditional medicine for their primary health care needs [7].

During recent years medicinal importance important have become very popular [8]. National program on health care have emphasized herbal medicine and fortunately herbal medicinal flora is the richest natural resources in India [8]. Although in many places, diversity of medicinal plants is reducing alarmingly. The anthropogenic pressures have been identified as the main causes of declining the population of medicinal plants.

Today majority of world's population is running behind the herbal medicinal system because of their efficacy, safety and lesser side effects. Due to increasing national and international demand, medicinal plants are facing continuous exploitation from their natural habitat. The uncontrolled exploitation along with several other factors like destruction of habitat, overgrazing, forest fire, grazing and tourism development etc. are leading to deterioration of important plant habitats and selective eradication of commercially more valuable plants [9].

Medicinal plants satisfy the million of the ethnic and indigenous people living in tribal and rural sector of India. According to the study [8,10], conducted by the Ministry of Environments and Forest (MOEF), Government of India, tribal communities in India use over 1,0000 wild plants for primary health care.

A recent survey from the villages has been carried out and indicating that villagers are taking several resources from the forest including medicinal plants for their basic need, which are used for curing number of diseases. Among the species used by villager, some important species used for curing diseases includes *Aegle marmelos* (stomach problems), *Berberis asiatica* (diabetic problems, stone problem), *Carissa carandus* (diabetes), *Emblica officinale* (constipation), *Eupatorium adenophorum* (cut and wound), *Juglans regia* (killing toothworm) *Litsea glutinosa* (recover bone fracture) *Mangifera indica* (dysentery). It is important to note that the rural communities have been using medicinal plant resources which are helping particularly poor villagers especially having crisis to pay for medicines.

These villagers utilizing many components of plant species such as leaf, root, tuber, flower and whole plant for the purposes. The restricted growth of the plant some-time affected due to over exploitation which

leads towards extinction of the species. The people of the Himalayan region are well aware of the traditional use of medicinal plants, but the ecological distribution of the species are unknown, which tell us the presence of species in the nature and further its utilization for sustainable long-term use. Although many studies have been carried out on the ethnomedicinal uses of the plants described from the different parts of India [5,11,12]. However, the ecological studies of medicinal plants in the Himalayan region are lacking.

In the recent survey, the informants suggested that medicinal plants are an important source for daily healthcare and the associated knowledge is traditionally transmitted, which is also reported in earlier studies and suggested that these species help maintain the ecological balance of the area by decreasing soil erosion and increasing moisture in the soil, thus improving conditions for human and livestock needs [5].

Informants are well aware about the knowledge of plants that how they are disappearing due to overexploitation. But not aware of ecological information of the plants which indicate the future performance of the species survival. Therefore, conservation of these valuable resources especially for curing human disease needs to be done thus the resource could be saved for present and future generation requirement. Therefore following suggestion can be helpful for conservation and sustainable utilization of these medicinal plants are:

- Awareness programme to be carried out in village level where each farmer can get an idea about the importance of the plants.
- The availability and distribution of the plants to be highlighted through ecological studies, which can be helpful to know the actual resources, available in the nature and thus accordingly the management plant can be done.
- The ecological studies should also be done on consumption requirement so only needful extraction can be done for long term sustainable output.
- The documentation/information of each plan should be highlighted.
- Possible *in situ* conservation should be preferred and *ex situ* conservation including agro techniques should be done for more survival.

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