

## Threats on Tribal Food Repository of Cold Desert

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### SUMMARY

The tribal communities in Lahaul valley depend upon local wild plants as the soul nutrition source. Their deteriorating rate in their daily routine has imposed a question on the food security due to various factors such as unskilled agriculture, awareness to plant properties, overexploitation of resources, Lack in conservation practices, Poor regulating strategies for native crops, overgrazing and climate change. Screening of new properties from these plants using advanced biotechnological techniques help to substitute the high valued drugs and sustain local as well as global health. The work elicits the uses and current strains on the plants in the area and tries to bring the attention of researchers regarding the possible research prospective and upcoming problems that is needed to be encountered to save these wild treasures.

### INTRODUCTION

From ancient times, the tribal communities continuously depend upon local wild plants as the soul nutrition source. Unfortunately; their deteriorating rate in their daily routine has imposed a question on the food security, genetic base and genetic drift. The present study was aimed to explore the threats in Lahaul valley a cold-arid regions of Himachal Pradesh to appraise the advantages of common wild edible plants. Group discussions, household surveys on different Buddhist communities were used to elicit information on wild edible plants. On the basis of their consumption, these were categorized into various groups such as raw food, vegetables, spices and flavouring food, fruits, local brew, chutney and tribal medicines.

### Factors Affecting Diversity of Plants

#### Awareness to the Properties

More than 1000 species confined to this region that lies in category of threatened plant species. The region is dominated by two communities; lahoulis and Buddhists that completely relies on local flora for their medicinal, food, fodder, spices, condiments and beverages purposes. The most of the herbs present are endemic to this region and depend on symbiotic relationship with other species in anonymous manner. For ex: Podophyllum hexandrum one of the endangered herb available in this region having highest anti-cancerous compound namely podophyllotoxin (14%) and chiefly abundant in the region where distribution of Betula utilis is maximum. Other species such as Achillea millefolium, Artemisia brevifolia, Aster flaccid, Astragalus candolleanus, Bistorta affinis, Carum carvi, Causinia thomsonii, Chenopodium botrys, Cuminum cyminum, Ferula joeschkeana, Gentiana phyllocalyx, Gentianella moocroftiana, Hippophae rhamnoides, Impatiens grandulifera, Mentha longifolia, Parnassia nubicola, Pleurospermum uralense, Polygonium alpinum, Rheum webbiana, Ribes alpestris, Saussurea costus, Seline vulgare are completely devastated during fodder gathering for cattle's along with grasses (Antul *et al.*,2020).

#### Overexploitation of Resources

The regions are well known for medicinal resources. The local communities harnessing the herbs species and utilised all their parts for local herbal formulation in diseases ailment. The collection of plants is unskilled and independent without concern of population status. The flowering season was mainly targeted for plants collection so; no seed formation is achieved because plants are completely uprooted by medicinal practitioners. Certain plants like cordyceps sinensis, sassaurea costatus, Pleurospermum candollei are illegally sold by online markets. The overexploitation of these valuable herb cause at verge of extinction of species in future.

#### Lack in Conservation Practices

Once abundant in these regions, the diversity of such plants declined in alarming rate. Ephedra, one of the most frequent plants used in treatment of asthma and bronchitis in lahaul region, can be found very rarely after intensive searches. Unofficially, plants more than worth Rs 20 crore reached pharmaceutical markets without the knowledge of government every year.

The participation of people in conservation is negligible during resurgence programs of conserving native plants such as Deodar, pinus guardian, kail, junipers, bhojpatra. Botanists and ecologists blame local peoples for such trading whereas forest department points out the lack of antiquated laws in conservations that will not strongly enforced even in current situation.

### **Unskilled Agriculture**

The area is well known for offseason crops and completely loss its native varieties of crops such as potatoes, cauliflowers, cabbage and pea. In recent years, new hybrids varieties have been preferred by local farmers that might be carriers of invasive alien weed species. Numerous weed species reported in lahaul region in form of checklists of species published in regular intervals of times. The water irrigation schemes have neither be encouraging nor effective in these areas.

### **Poor Regulating Strategies for Native Plants**

Hops, one of the tradition cash crop plant of lahaul region since 1975. Earlier it was source of live hood for local people and plays key role to sustain their economy. Hops or *Humulus lupulus* primarily used for preparing beverages and sedatives of herbal medicines. The strategies for crop production was poor and failed to enhanced in production. According to local farmers, the main reason of declining in hops farming was their poor marketing values and high input cost than output. The hopes imported from china and us was hybrid and cheaper than organic Indian hopes. Later farmers turn into diversification of other crops and hops completely vanished out from Lahaul region. Beside this, *Taxus buccata* a rare medicinal plant having anti-cancerous properties was completely extinct from this region. Peoples are not aware about conservation of native plants. The conservation is major issue and trending need comes out in recent years. Many species were extinct from these cold arid deserts due to lack of interaction between and lahoulis and governments. Lack of traditional livestock animals like churu, Yak and goat also reported that sustain economy of farmers (Dipender, 2019). Recently use of chemical herbicide and pesticides increased that also disturb soil plants microbe's interaction, that quite useful in maintaining diversity of endemic species.

### **Overgrazing**

Lahaul valley is major route for shepherd communities of Gaddis in chambha. Every year's number of sheep heard move from Chamba to kangra via lahaul region in month of June to September. The movement threatened the population status impact fully because these months are major season of flowering and fruiting. Such huge anthropogenic activities create direct threat and enforce the plants in categories of threatened and endangered (Singh *et al.*, 2009).

### **Climate Change**

Glaciers receding is key concern and local community is completely depending upon this for irrigation and drinking. The area remains covered from snow for atleast six months. The soil strata loose, due to unavailability of regular irrigation water. Medicinal plants are being exploited, causes loss of important and valuable germplasm of domesticated crops due to human activities and unfavorable climate change.

### **Why need of Conservation**

The aconitus, ephedra dactylorhizza hatagira, cuminum, artemesia capparis are important plants pf lahoulis that empower their economy and sustain native crops diversification. Screening of new properties from these plants using advanced biotechnological techniques help to substitute the high valued drugs and sustain local as well as global health. These can be possible through landscape mapping and monitoring, inventorying and monitoring biodiversity, socio economic action plans, Ends and forces driving biodiversity change, sustainable use of biodiversity resources, equitable sharing of biodiversity benefits environment education and aware programs.

**CONCLUSION**

Altered and unspecific tendency of use and motivations behind their utilization were critically evaluated. Unskilled agricultural practices, overgrazing, lack of knowledge regarding uses and commercialization were the main reasons behind declining the diversity of these plants. The work elicits the uses and current strains on the plants in the area and tries to bring the attention of researchers regarding the possible research prospective and upcoming problems that is needed to be encountered to save these wild treasures before it diminishes in the unknown pages of history.

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