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# A REVIEW OF HIMALAYAN BIODIVERSITY WITH REFERENCE TO UTTARAKHAND

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## ABSTRACT

Biodiversity means the variety and variability in living beings. India is one of the mega biodiversity centers in the world. Among the 18 hotspots India is considered to possess 2 hotspots extending from Western Ghats on one side and the Eastern Himalayas on the other side. Uttarakhand comprises of about 64.81% forest area of total geographical region. There occur about 21 forests types in Himalayas, which itself is an indicator of the presence of vast biodiversity. According to a survey a total of 280 plants species utilized in 316 formulation by herbal drug companies. Due to over-exploitation and lack of cultivation practices about 210 species of medicinally valuable plants of Himalayas Region are in Red Data Book.

## Biodiversity

Diversity is a concept about range of variation or differences among entities. Biodiversity is the variety and differences among living organisms from all sources, including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part. This includes genetic, species and ecosystem diversity. Thus, in essence, biodiversity represents all life. It is the most significant national asset and constitutes an enduring source for supporting the continued existences of human societies. The diversity of plants can be analysed from three viewpoints, phytotaxonomy, ecophysiology and

chemotaxonomical diversity.

India is one of the mega biodiversity centers in the world. Among the 18 hotspots of Biodiversity worldwide two are located in the Western Ghats and Eastern Himalayas in India. The Charak Samihata and Susruta Samita describe Himalayas as the richest sources of Biodiversity.

## Status of Uttarakhand

It comprises of 13 districts. The total geographical area of Uttarakhand is 53483 Sq.km. out of which 34661.52 Sq.km. is the area under forest, which means about 64.81% of total geographical area is under forest cover. Main species found in these forests are Chir Pine, Deodar,

Kail, Fir, and Spruce, Oak, Sal, Teak, Sissoo, Eucalyptus, Khair and miscellaneous forests and their associates. According to Champion and Seth's classification of forest types, the main forest types found in Uttarakhand are: Tropical Moist Deciduous Forests, Riverine and Swampy Forests, Tropical Dry Deciduous Forests, Tropical thorn Forests, Subtropical Chir pine Forests, Himalayas Dry Temperate Forests, Moist Alpine Scrub Forests, Dry Alpine Scrubs and other Forest (Uttarakhand Forests Statistics 2001). There occur 21 forest types in Himalayas, which itself is an indicator of the presence of vast biodiversity (Shah (2003, Singh & Singh, 1992). Himalayan region supports about 8000 species of Angiosperm, 44 species of Gymnosperm, 600 species of Pteridophytes, 1737 species of Bryophytes, 1159 Species of Lichens 6900 species of Fungi (Singh and Hajra, 1996). About 6% of the total population of India lives in Indian Himalayas Region. Majority of them lives in Villages and use plant medicines to cure various ailments. People of Uttarakhand have been using vegetative medicines to cure ailments for thousand of year. Majority of these plants are extracted for drugs from wild. This has adversely affected the very existence of a number of plants. Due to increase in world demand and global interest in natural substances in the health care system, the natural population of medicinal plants is under tremendous pressure. To meet ever increasing demand of medicinal plants, it is imperative to go for cultivation of medicinal plants in private lands and also it is the demand of time to replenish the demanding area.

#### **Biodiversity enriched Himalayas Region**

Himalayas Region is rich in biodiversity due to topography and edaphic variations. The Indian Himalayan region has about 18400 species of plants (Singh and Hajra 1996) including 1748 species of medicinal plants and 675 wild species (Samant & Dhar 1991, because of its rich biological and cultural heritage, the East Himalayas has been identified as hotspot (Mayers, 1991). The 50% of ethnomedicinally important species are collected from the Himalayas region (Samant et.al 2000). Among the families, Asteraceae contains the highest

number of ethnomedicinal plants i.e. about 129 spp. (Dhar et.al 2000). According to survey conducted by Dhar et.al (2000), a total of 280 plants species utilized in 316 formulation by herbal drug companies. The Socioeconomic climate is changing worldwide at a faster rate than global physical climate, especially in relation to use and trade of medicinal plants and is directly affecting availability and diversity. Due to over-exploitation, from wild and lack of cultivation practices of some medicinal valuable plants, 210 species of Himalayas Region are in Red Data Book. The representative biodiversity of Himalayas having protected through a Protected Area Network including Biosphere Reserves (Nanda Devi Biosphere Reserves) National Parks and Wildlife sanctuaries and Research centers.

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