

Distribution and Indigenous Uses of Some Medicinal Plants in District Uttarkashi, Uttarakhand, India

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Abstract: The present study was based on a field survey in district Uttarkashi of Uttarakhand, to find the plants of medicinal values. [Researcher. 2009;1(6):38-40]. (ISSN: 1553-9865).

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Introduction

The plants have been used as a source of medicines by man from ancient time to the present day. Initially these were the main parts of folk or ethnomedicine, practiced in India and other parts of the world like China, Middle East Africa and South America. Later a considerable part of this indigenous knowledge was formulated, documented and eventually past into the organize systems of medicines such as Ayurveda, Yunani, Sidha or other systems. Subsequently, with the advanced in the techniques of phytochemistry and pharmacology, a number of active principles of medicinal plants were isolated and introduce as valuable drugs in modern system of medicine (Ved Prakash, 2001). The Himalaya represents the largest mountain chain covering approximately 8 million km² in surface area and occupying a length of approximately 3000 km. Owing to enormous size and elevation, the Himalaya represents a complete transaction from tropical to temperate conditions despite its location near the tropics. 1748 species of medicinal plant have been reported from the Indian Himalayan region (IHR), of these 701 species occur in Uttarakhand state (West Himalaya). In the region most medicinal plants are being extracted for drug and pharmaceutical industries from the wild (Mehta, 2001). In India earliest references of the curative properties of plants appear in *Rigveda*, which is said to be written between 3,500-1,600 B.C. *Ayurveda* describes use of large number of drugs their properties and uses in some details. Works of charaka and susruta namely '*Charak Sanhita*' deals with about 700 drugs, few of which were not indigenous to India (Jain, 1968).

Lying in the upper Himalayas, Uttarkashi contains within itself varying geographic environment ranging from snow free valley and outer hills to the peaks with perpetual snow and glaciers. The widely varying climate and topography produce a wide range of vegetation and serve as habitats to diverse species of wild life. Forest occupies a place of pride in the environment of the district not only for sheer bulk of the area they occupy

but also for the richness of variety of vegetation. The descriptions of forest of district Uttarkashi are as follows:

Pine forest (900-2000 meters)

Deodar forest (2000-3000 meters)

Fix and spruce forest (over 3000 meters)

Kharshu, Birch and Junipers forests (up to 4000 meters)

Alpine zone (3500-4877 meters)

Material and Methods

The present study was based on a field survey in district Uttarkashi, to find the plants of medicinal values. The work was conducted among local people, rural persons, farmers and vaidyas to know the local names and medicinal importance of mentioned plants. The plants with medicinal values, as known from local people and rural persons were collected and studies were made to know their medicinal uses.

Result and Discussion

A large number of medicinal plants of great commercial value grow spontaneously in the forests. Some of these grown in the valleys, some in sub-mountain tracts while some other in high altitudes. Forestry plays an important role in the economy of the district. In the present study some important medicinal plants of Uttarkashi are described as follows:

Mitha (*Aconitum balfourii*):

Family: Ranunculaceae

Altitude: 2800-4000 m.

Aconitum balfourii found in sub-alpine to alpine zone of district Uttarkashi. It is an extremely poisonous herb grows on shady moist slopes usually along the edges of birch, rhododendron forest. Root pest, in small quantity after frying in butter, is applied and massaged on joints for the treatment of rheumatism. Best populations are seen at Dayara and Gidara (Rawat, 2005).

Atis (*Aconitum heterophyllum*):

Family: Ranunculaceae

Altitude: 2200-4000 m.

Atish is an herb found in sub-alpine to alpine zone of district Uttarkashi. Fruits are follicles with 16-18 mm large seeds. Root (tuber) is used part of the plant for medicine. Roots are tuberous, white in color and useful in dysentery, diarrhea, stomach disorders, fever, malaria fever and helminthiasis etc. local people store the dry roots as emergency medicine. Best populations of Atis are seen at Gidara (Rawat, 2005).

Gokhru (*Tribulus terrestris*):

Family: Oxalidaceae

Altitude: 3000-4000 m.

A prostate-spreading herb densely covered with minuet hairs found in sub-alpine to alpine region of Uttarkashi forests. The fruit of the plant are useful in urinary compliances and sexual weakness. Rarely leaves used as pot herb. Seed powder of the plant with *Swertia chirayita* given in cough and asthma; seed pest applied on skin eruptions (Gaur, 1999).

Cacrasinghi (*Pistacia integerrima*):

Family: Anacardiaceae

Altitude: 2000-3000 m.

A moderate sized deciduous tree up to 18 mt. high with dark gray or blackish bark found in deodar forests. Galls produced on leaves are used commercially as 'karkatasrgi'. Galls on leaves are the used part of the plant as medicine, as anti-inflammatory, depurative, digestive and expectorant with terebinthine odor. They are useful in asthma, cough, dysentery and fever, consumption irritability of stomach, skin diseases and useful at the time of teething of children.

Barberry (*Berberis aristata*):

Family: Berberidaceae

Altitude: 2000-3000 m.

A large thorny shrub found in deodar forests of Uttarkashi. Fruits are ovule bluish purple with few seeds. Although whole plant is useful as medicine but particularly roots and seeds of the plant is important part of the plant for drugs. The main use of drug made by barberry is a diuretic i.e. promote urination in dropsy and in jaundice and gonorrhoea, it is also recommended for asthma.

Guggul (*Tanacetum dolichophyllum*):

Family: Asteraceae

Altitude: 2500-4000 m.

A small armed tree with spine scent branches and colored rough bark found in deodar forests and in alpine zone also, having small flowers and fruits avoid red when ripe. The resinous gum obtained from the bark, yellowish to brown in color, is a part use as medicine. The gum is bitter acid, astringent, thermogenic, aromatic, digestive, anti-inflammatory, antiseptic, liver tonic, antispasmodic and

also useful in vitiated condition of vatic, gout, facial paralysis, helminthiasis, dyspepsia cough, asthma, fever and anemia.

Gubankh (*Angelica archangelica*):

Family: Apiaceae

Altitude: 2700-3400 m.

Distributed on the Western Himalayas, in alpine shrub and found on moist and shady slopes. Seeds are used as spice for seasoning vegetables in some parts of Uttarakhand. Essential oils distilled from the seeds and roots used in perfumes and flavoring various liquors (Vashishta, 2006).

Bel (*Aegle marmelos*):

Family: Rutaceae

Altitude: 800-2500 m.

A medium size deciduous tree bearing strong axillary thorns found commonly through out the district. Fruit (8-20 cm. diameters) is a part use as medicine. Globosely green, color is changed to grayish when fruit mature. The bel fruits are valuable chiefly for its mucilage and pectin; it is very useful in chronic diarrhea and dysentery. Sweet drinks (sharbat) prepared from the pulp of the fruit are useful as soothing agents for in testing patient who have just recovered from bacillary dysentery (Jain, 1968)

Brahm Kamal (*Saussurea obvallata*):

Family: Asteraceae

Altitude: 3100-4000 m.

A small and middle size 15 cm. long annual, aromatic herb grow wild, found in alpine region of Uttarkashi. Whole plant is use as medicine; the drug is used in treatment of headache and other pains (Rawat, 2005).

Datura (*Datura stramonium*):

Family: Solanaceae

Altitude: 2500 - 3500m.

A bushy plant up to 1 mt. height found in Uttarkashi city and in sub-alpine to alpine region of Uttarkashi. Leaves tops of flowers and seeds of the plant are the parts use as medicine. Leaves are large ovate and toothed, flowers are white and large. The chief active principle in the leaves is hvoscvamine, the drug is therefore useful in the same manner as belladonna or hvosvamus. The drug is useful in bronchitis or asthma and controls salivation in mouth. The seeds also contain hvoscvamine and have similar properties as the leaves.

Chirayata (*Swertia chirayata*):

Family: Gentianaceae

Altitude: 1500-2000 m.

Chirayata is an annual herb of deodar forests of Uttarkashi. The whole plant is use as a medicine. Leaves of the plant are opposite pairs about 10 cm. long without stalks, the flowers are pale green, tinged of green glands. Chirayata is well known for its bitter, stomach ache, and

febrifuge, anathematic properties. It is given in fever, diarrhea and weakness (Nautiyal *et al.*, 2004).

Ashvagandha (*Withania somnifera*):

Family: Solanaceae

Altitude: 1000-1800 m.

A small or middle size under shrub, found through out the district in drier regions. Roots are the uses part of the plant in drugs. The drug consists of the dried roots of the plant. Ashvagandha is useful in consumerism, sexual and general weakness and rheumatism. It is diuretic i.e. it promotes urination and removes functional obstructions of body. The root powder is applied locally on ulcers and inflammations. Crystalline principle 'Withaferin- A' has been obtained from leaves and is reported to possess significant antibiotic properties (Jain, 1968).

Uttarakhand, on account of its unique setting within the Himalaya region, possesses luxuriant and varied vegetation. Almost every plant has economic value from either a nutritional, esthetics or medicinal viewpoint. In fact a large percentage of crude drugs in the Indian market come from this Himalayan area (Badoni and Badoni, 2001). Nearly 30 species of Garhwal Himalaya have been listed in various categories under threat in the Indian Red Data Books (Nayar and Shastri, 1987-90) of which 24 species are from high altitude alpine regions. Recently, Rawat *et al.* (2001) listed 45 more species (excluding Red Data Book) which need special attention for conservation, and this list also contains as many as 30 species from high altitudes (Nautiyal *et al.*, 2004). There has been a considerable decrease in the number of families in sub alpine and alpine zones of district Uttarkashi dependent on grazing. Most of the medicinal plant exploited indiscriminately from the wild. Due to non-availability in abundance, different populations are completely wiped off for economizing the collection activity.

Medicinal plants and their uses in the indigenous medicine are well known to many Indian communities. The recent trend has been to blend the traditional knowledge with modern health care practices to provide effective health care services to a wider population. The basic ingredients in the traditional medicine are the medicinal plants, which are depleting at a faster rate due to increase in consumption and indiscriminate drawl of resources from the wild. With the changing scenario, there is a need to enhance and promote the conservation and

cultivation of these natural resources especially medicinal plants. In addition to the requirement for conservation of medicinal plants it has also become essential to protect and patent the traditional knowledge (Raghupathy, 2001).

References

- Badoni A. and K. Badoni (2001). Ethnobotanical Heritage in *Garhwal Himalaya: Nature, Culture and Society* (Kandari, O. P. and O. P. Gusain, eds.). Transmedia , Srinagar Garhwal.
- Gaur, R. D. (1999). Flora of the District Garhwal North-West Himalaya. Transmedia, Srinagar Garhwal.
- Jain, S. K. (1968). Medicinal Plants, Director, National Book Trust, New Delhi, India.
- Mehta, J.S. (2001). On saving of Medicinal plant in Uttaranchal in *Himalayan Medicinal Plants: potential and prospects* (edited by S. S. Samant, U. Dhar, L.M.S. Palni), *Gramodaya prakashan Nainital*, pp. 427-455
- Nautiyal, M. C. and B. P. Nautiyal (2004). Agro techniques for High Altitude Medicinal and Aromatic Plants, *Bishan singh Mahendra pal singh, Dehradun*.
- Nayer and A. R. K. Sastry (1987, 1988, 1990). Red Data Book of Indian Plants, vol. I, II, III, *Botanical Survey of India, Calcutta*.
- Raghupathy, Lakshmi (2001). Conservation and sustainable use of medicinal plant: current issue, *Himalayan Medicinal Plants: potential and prospects* (edited by S. S. Samant, U. Dhar, L.M.S. Palni), *Gramodaya prakashan Nainital*, pp. 415-425
- Rawat, D. S., B. S. Bahndari and R. D. Gaur (2001). Vegetational Wealth in *Garhwal Himalaya: Nature, Culture and Society* (Kandari, O. P. and O. P. Gusain, eds.). Transmedia , Srinagar Garhwal.
- Rawat, G. S. (2005). Alpine meadows of Uttaranchal: ecology, land use and status of medicinal and aromatic plants, *Bishan singh Mahendra pal singh, Dehradun*.
- Vedprakash (2001). Indian medicinal plant: current status in *Himalayan Medicinal Plants: potential and prospects* (edited by S. S. Samant, U. Dhar, L.M.S. Palni), *Gramodaya prakashan Nainital*, pp. 45-63