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# Indigenous Knowledge of Medicinal Plants Used by Bhotiya Tribal Community at Uttarkashi District of Uttarakhand State

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Bhotiyas are transhumant community of semimongoloid people of Tibetan origin, mainly inhabiting the high altitude region of Indian Central Himalaya and Indo-Nepal border, a zone of ethnic intermixing and cultural assimilation. The eight major Bhotias groups of Uttarakhand are Johari, Jeethora, Darma, Chaudansi, Byansi, Marchha, Tolcha, and **Jad** are scattered over the eight main river valleys known as Johar, Darma, Byans, Chaudans (Pithoragarh district of Uttarakhand), Mana, Niti (Chamoli district of Uttarakhand), Nilang, Jadung(Uttarkashi district of Uttarakhand) respectively.

Among the native societies of the Central Himalaya the **Jad** (Bhotia) are still one of the under developed and smallest separate tribal society. **Jad** are the native of Nelang and Jadung remote village (a part of Indian Trans-Himalaya), a high altitude cold desert area, harbouring many rare and endangered plant and animal species. This area, falls at the height of over 11,000 ft Mean Sea level (MSL) and characterized by high solar intensity, high aridity, low temperature, inadequate soil and short growing season has low plant productivity in Uttarkashi district of Uttarakhand. After Indo Tibet War 1962, they Indian Army shifted in Harsil, Bagori and Beerpur Villages of Uttarkashi district.

They have an excellent knowledge on the use of high altitude medicinal plants due to their constant and close association with the Alpine and sub-alpine forests. These people use the medicinal plants for their effectiveness, lack of conventional health care facility and cultural preferences and they have attained quite a good knowledge on both valuable and adverse effects of plants. However, this huge knowledge on medicinal plants verbally which had been passed down from their ancestral generation, is slowly diminishing and deteriorating due to changing socio-economic and cultural practices (Phondani, 2010) and shifting of young generation to urban areas. Several medicinal plants have been listed as endangered, vulnerable and threatened due to commercial over exploitation, unsustainable harvesting practice and climate change. The loss of traditional knowledge is irreversible just as the loss of species.

The documentation on ethno medicinal plant practices of Bhotiya tribe of Uttarakhand was done by various workers (Maikhuri, 1998; Negi, 2002; Kala, 2003; Samal, 2010) in a sporadic manner to recognize the use of plant species for different purposes. In the Central Himalayan region documentation of ethnobotanical knowledge was done by various workers ( Negi et. Al , 1991; 1988; Nautiyal et al., 2001a) to understand the use of plant species

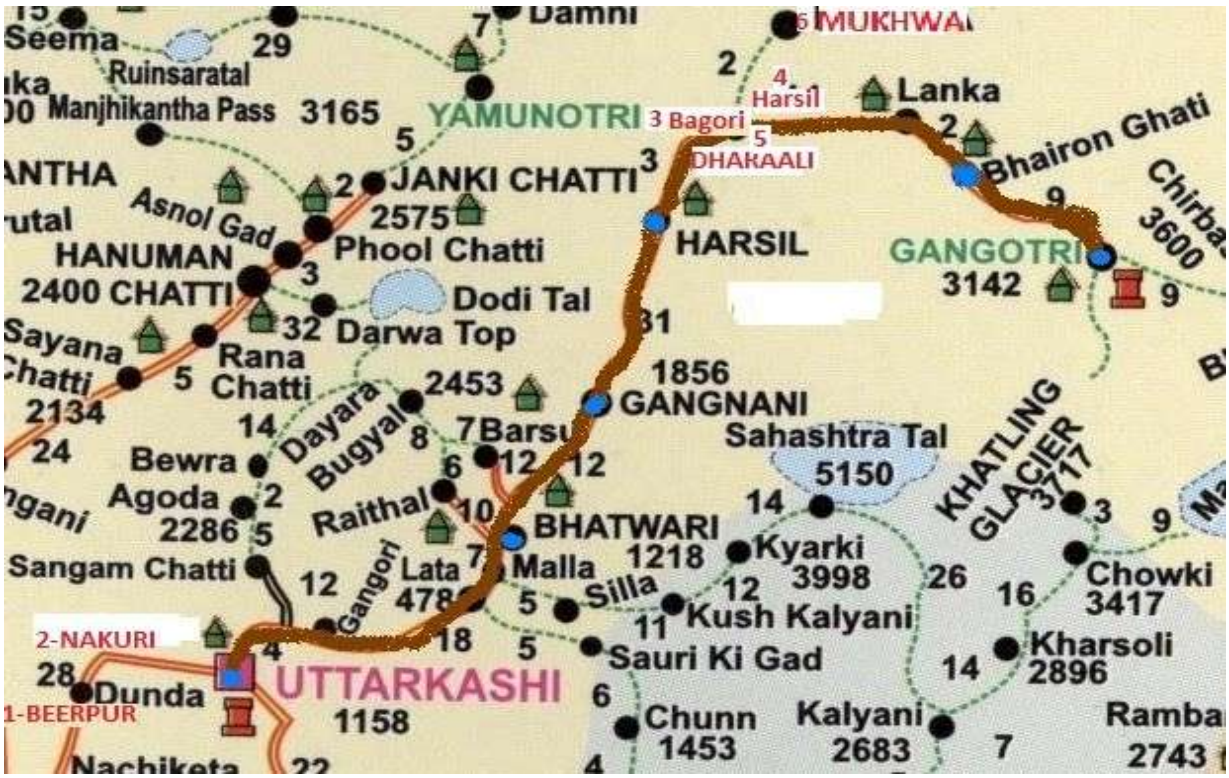
for different purposes. Though some of them have been reported about the medicinal plants uses in health care system among the tribal communities living in similar geographical region (Maikhuri et al., 2000; Nautiyal et al., 2001a) however, small community residing in same area having own traditional knowledge is not documented yet by workers properly.

**Study Area-**Study area falls under the Uttarkashi district. There are four villages of Jad bhoita communities in the Uttarkashi district lying between 648m asl to 3300m asl. After Chinese aggression in north India in 1962, the inhabitants of Nilang and Jadung bhotias were compelled to leave and resettled in Bagori village. Since then in these areas Govt. has deployed Army and paramilitary force (ITBP) being sensitive zone.

**Jad-ganga**, one of the major tributary of Bhagirathi river system is originas form 'Janak-taal' situated near the Jadung village. It is said that the bhotias living in this region are named **Jad** after this holy-river **'Jad-ganga'**.

The original inhabitants of this valley (**Jads**) were resettled at lower altitudes viz., Bagori(harsil) following Chinese aggression in north India in 1962. Presently this area forms a part of Gangotri National Park.

Their livelihood totally depends on the cattle like sheep, goat, horse, dog etc... i.e. produces wool from sheep and manufacture the dan(kaline), dumkar(big blanket),pankhi(shawl), pakda(particularly used by ladies which bind around the waist), langsuk(gloves), kangsuk(soaks), kot(locally known as bindi) ; among animals Chaur cow it is the interbreed of cow and yak, proves very helpful to live in the



higher altitude and cold weather of Himalyas; Horses and dogs are found of Mongolian or central Asian varieties. They used to live a nomadic life moving from high Himalaya to Shivalic range with their animals, though at present with the development of education, urbanisation, their traditional culture and livelihood day by day losing their existence which needs to be preserved.

Higher altitude village Bagori (harsil) as well as the area of Nelang, Jadung, Naga, Pulum-sumda, nilapani, sonam, the pastured lands where these bhotias still goes with their animals like sheeps, goats and horses etc in summer season which is the main sources of their livelihood, comes under the study area as the medicinal plants of these higher altitude are used by these Bhotiyas.

Hence, there is an immediate need to document the various uses of the medicinal plants used by the tribe before some of them disappear from the areas or before switching over of the tribe to modern system of medicine. The following is the list of some important high altitude medicinal plants used by the Jad tribe along with their local names, Sanskrit names or names as mentioned in the Ayurvedic system of medicine, locality of collection, habit, part/s used, source of collection and period of collection.

| Sr. No. | Scientific/ Botanical name | Vernacular name /Bhotiya Name | Locality | Habit | Part/s used | Source of collection | Period of collection |
|---|---|---|---|---|---|---|---|
| 1 | *Aconitum balfourii Stapf* (Ranunculaceae) | Mithavish, Mitha jahar /Tuk | Alpine forest | H | Rz | Wild | September-October |
| 2 | *Aconitum heterophyllum Wall. ex Royle* (Ranunculaceae) | Atis | Sub-alpine | H | Rz | Wild | September-October |
| 3 | *Aconitum violaceum* ( Ranunculaceae) | Kadwa/Kodai | Alpine | H | Rz | Wild | September-October |
| 4 | *Allium carolinianum* (Liliaceae) | Rukba | Sub-Alpine | H | Lf, B | Wild | August-October |
| 5 | *Allium humile Kunth* (Liliaceae) | Jimbu/ tudka | Alpine | H | Lf | Wild | August-October |
| 6 | *Angelica glauca* (Apiaceae) | Chora | Subalpine | H | Rt | Wild & Cultivated | August-September |
| 7 | *Arnebia euchroma* (Boraginaceae) | Balchhadi | Subalpine | H | Rt, Lf | Wild | September-October |
| 8 | *Bergenia ciliata Sternb.* (Saxifragaceae) | Pattarchatta /silpadu Taksha | Subalpine | H | Rz | Wild | August-September |
| 9 | *Bibersteinia odora* (Biebersteiniaceae) | | Sub-alpine | H | Wp | Wild | August-September |
| 10 | *Carum carvi L.* (Apiaceae) | Chongsa Jeera/ chadang | Sub-alpine | H | Sd | Wild | September-October |
| 11 | *Cedrus deodara* (Pinaceae) | Deodar /diyarpa | Sub-alpine | T | Sd | Wild | October |
| 12 | *Dactylorhiza hatagirea* (Ranunculaceae) | Hathajadi | Alpine | H | Rt | Wild | August-September |
| 13 | *Delphinium denudatum* | Nirvishi | Sub-alpine | H | Sd | Wild | September |
| 14 | *Hippophae salicifolia* (Elaeagnaceae) | Amil /Imli | Sub-alpine | T | Fr | Wild | October |
| 15 | *Hyssopus officinalis* (Lamiaceae) | Chhabra /lavender | Sub-alpine | S | L | Wild | September-October |

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|---|---|---|---|---|---|---|---|
| 16 | *Nardostachys grandiflora* (Valerianaceae) | Jatamansi /mnasi | Alpine | H | Rz | Wild | October |
| 17 | *Papaver somniferum* (Ranunculaceae) | Posth /postupa | | H | | Wild and | |
| 18 | *Picrorhiza kurrooa Royle ex Benth.* (Scrophulariaceae) | Kutki /koda | Alpine | H | Rt | Wild and cultivate cultivated | September-October |
| 19 | *Pinus wallichiana* (Pinaceae) | Chir/kulain | Subalpine | T | Sd | Wild | |
| 20 | *Podophyllum hexandrum Royle* (Podophyllaceae) | Bankakri | Subalpine | H | Rt | Wild | September-October |
| 21 | *Prunus Armeniaca* (Rosaceae) | Plum | Subalpine | T | Sd | Wild and | |
| 22 | *Pyrus malus* (Rosaceae) | Seb | Subalpine | T | Fr | Wild and cultivate | August-September |
| 23 | *Rheum webbianum Royle* (Polygonaceae) | Archa /archu | Alpine | H | Fr | Wild cultivate | September-October |
| 24 | *Saussurea costus (Falc.) Lipsch.* (Asteraceae) | Kut/ Kuth | Alpine | H | Rt | Cultivated | September-October |
| 25 | *Saussurea obvallata (DC.) Edgew.* (Asteraceae) | /Rudha al/ Bramhakam Brahmkolya | Alpine | H | Rt, wp | Wild | August-October |
| 26 | *Selinum vaginatum* (Apiaceae) | Bhutkesh | Subalpine | H | Rt | Wild and Cultivated | August-September |
| 27 | *Taxus baccata L.* (Taxaceae) | Thuner | Subalpine | T | Lf, St. bk | Wild | April-June |

**Abbreviation used: H- Herb, T- Tree, S-Shrubs, Ft- Fruit, St-Stem, Lf- Leaf, Bk- Bark, Wp- Whole plant, Rt- Root, Rz-Rhizome, T-Tuber, Sd- Seed**

**Conclusion**: The present study indicated that the tribal community of Bagori Uttarkashi is a rich reservoir of important high altitude cold desert medicinal plants in regards to Indigenous System of Medicine and Ayurveda. The Bhotiya tribe, inhabiting the area, has a good knowledge on the beneficial use of medicinal plant resources with regards to medicines. The Knowledge on ethno medicine of this tribe is eroding gradually due to modernization, and so documentation of it will benefit the younger generation of this community and will provide a platform for researchers to tap the medicinal potentialities of the available medicinal plants. Introducing techniques of ex-situ cultivation of commercially viable species would present a strong option for income generation and prevention of migration of the local people. Kitchen gardening presently in every household greatly benefits the tribe, and should be encouraged to venture into large scale production through promotion of nursery practices.

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