

# Ethno-medicinal Plants of the Garhwal Himalaya Used to Cure Various Diseases: A Case Study

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**Abstract:** Garhwal Himalaya has been the reservoir of enormous natural resource including vegetational wealth. Primitive communities and tribes who live in the vicinity of forest due to being close to the nature, possess a deep practical knowledge on indigenous flora, pertaining to curatives, culture, customs, ethos, cults, religion, belief, legends, myths as well as other miscellaneous uses. The people in remote villages and tribal areas depend upon the folk medicines and household remedies to a great extent. The prevalent practice of herbal remedies has descended down from generation to generation and includes the cure from simple ailments to the most complicated one. The present communication pertains to the ethnomedicinal plants used for the treatment of various diseases and ailments like dysentery, cough, asthma, inflammation, body-ache, wound healing, bronchitis, mouth ulcer, cold, smooth delivery, headache, throat sore, constipation, diarrhea, menstrual disorders, malaria, vomiting, jaundice, mental disorder, skin diseases etc. [New York Science Journal 2010;3(12):28-31]. (ISSN: 1554-0200).

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## Introduction

Garhwal Himalaya is the most spectacular in its natural assets, be its landform, water sedges, lush green forest and floristic diversity. The Large human populace with diverse life styles, beliefs, traditions and cultural heritage inhabiting Garhwal Himalaya has learnt to utilize natural resources and products in various ways. Garhwal Himalaya has been the reservoir of enormous natural resources including vegetational wealth and traditional medicinal knowledge. Garhwal Himalayan region covers the state of Uttarakhand, which includes the district Pauri and Tehri. The present study deals with the ethno-medicinal plants used by the peoples to cure various diseases and ailments.

## Study Area

The study was carried out in Tehri Garhwal which is located on the outer ranges of the mid Himalayas which comprise low line peaks rising contiguously with the planes of the northern India. It lies in between 30°10'-30°17'N latitude and 78°18' - 78° 30' E longitudes at an altitudinal range of 275-4258m a.s.l. It is surrounded by the district Rudraprayag in the east, Dehradun in the west, Uttarkashi in the north and Pauri in the south.

Several ethno-botanist have been work out the traditional uses of plants in the Uttarakhand Himalaya<sup>1-6</sup>. The study on ethno-medicinal plants used to cure different diseases by the peoples of Tehri district have not been adequately worked out by

earlier workers. Therefore, the present communication deals with attempt together information on some traditional uses of medicinal plants from different blocks of the district Tehri to document the medicinal uses of plants to cure the common diseases.

## Material and Method

Extensive and intensive field surveys of medicinal plants of Tehri were conducted in different months, season's months of the year from various elevations. Frequent interview with the local population, elderly folk, vaidhys, and person associated with handicraft etc. Standard method of collection, preservation and maintenance of specimens in the herbarium will be followed<sup>7-8</sup>. All the collected plant specimens will be identified with the help of recent and relevant floras and confirmed after matching with the authentic specimens, housed in the Herbaria of Botanical Survey of India, Northern Circle (BSD), and Forest Research Institute (DD), Dehradun and Garhwal University Herbarium (GUH), Srinagar Garhwal. All the collected plant specimens will be deposited in the Herbarium of HNB Garhwal University, SRT Campus Botany Department Badshahi Thaul, Tehri and HNBGU, Botany Department Herbarium (GUH), Srinagar Garhwal.

## Enumeration

In the following text, plant species are arranged alphabetically with their botanical names, citations,

local names, family, Herbarium number uses and mode of application.

***Aquilegia pubiflora*** Wall. ex Royle, Vern. *Gughuti ghass*. Eng. *Columbine*. (Aquilegiaceae) CSR- GUH 19217.

Root sap is given as emetic. Root chewed in toothache.

***Aesculus indica*** (Colebr. ex Cambess.) Hook. Vern. *Panger*, (Hippocastanaceae) CSR-GUH 19338.

Seed powder is given ½ teaspoon twice a day for a month to treat leucorrhoea. Paste of seeds applied on hairs and washed regularly for 7 to 14 days to remove dandruff. Seed oil is applied once a day for a month in the treatment of arthritis. Bark paste is applied on fractured bones. Leaf lopped for fodder and manure. Wood used for agricultural implements and house hold articles. Seed flour edible, as well as given to cattle.

***Begonia picta*** Smith, (Bigoniceae) CSR-GUH 19235.

Decoction of herb is given twice a day for a week in the treatment of dyspepsia. Young leaves cooked as vegetable.

***Bupleurum fulcatum*** L., Vern. *Jangli- jeera* Eng. *Sicle Hare's far*. (Apiaceae) CSR-GUH 19459.

Decoction of root is given ½ teaspoonfuls twice a day up to three months in the treatment of liver complaints, and in chronic fever. Fruits used as spice.

***Cuscuta europaea*** L., Vern. *Akash matri* H. *Amarbel* Sans. *Akash – bela* Eng. *Dodder*. (Cuscutaceae) CSR-GUH 19343.

Plant sap is given approximately half teaspoonful twice a day, for a week as carminative. Plant extract is applied externally on affected area, twice a day for 14 to 28 days to treat psoriasis. Plant used in rituals, and religious ceremonies.

***Cyathula tomentosa*** (Roth) Moq. Vern. *Kuroo*. (Amaranthaceae) CSR-GUH 19275.

Leaf extract is given as emetic. Whole plant extract is warmed, and given thrice a day for a week in the treatment of eye ailments. Extract of root is given approximately a tablespoonful thrice a day, for a month, in haematuria. Leaf and bark paste along

with cow's urine is applied on affected area, thrice a day for 30-45 days Harpeszoster. Leaves used as fodder, spikes used in religious ceremonies like Hastola (Kurjwegi).

***Cotoneaster bacillaris*** Wall. Vern. *Ruins*. (Rosaceae) CSR-GUH 19363.

Leaf paste with cow's urine is applied externally in arthritis. Wood used for walking sticks, and made into articles viz 'Bangluda', 'Zangkta'. Leaves lopped for fodder and manure, bark yields fibre.

***Centella asiatica*** (L.) Urban Vern. & H. *Brahmi-buti* Sans. *Manduk Parni* Eng. *Indian penny wort*. (Apiaceae) CSR-GUH 19583.

Aqueous extract of herb is given ½ teaspoonful twice a day, early in morning and at night after meals for 14 to 28 days to treat stomachache, as a blood purifier, tonic, in fever and in leucorrhoea. Leaves are dried in shade, ground and powdered, approximately ½ teaspoonful given thrice a day for a 30-90 days to treat mental disorders. Leaf paste applied on skin ailments.

***Clematis montana*** Buch.-Ham. ex. DC., Vern. *Lagilujhad*. H. *Churanbar*. (Ranunculaceae) CSR-GUH 19340.

Leaf extract is given half teaspoonful twice a day, early in the morning and at night after meals for three months in diabetes. Leaves lopped for fodder.

***Leptodermis lanceolata*** Wall. Vern. *Koo- basya*. (Rubiaceae) CSR-GUH 19468.

Bark paste applied externally on forehead twice a day to treat migraine. Leaves browsed by livestock, stem used for fuel.

***Lyonia ovalifolia*** (Wall.) Drude Vern. *Angyar* H. *Anyar*. (Ericaceae) CSR-GUH 19298.

Young shoots and leaves are made into paste, which is applied externally on affected area, twice a day (14 to 28 days) for the treatment eczema. Seed paste applied on wounds and boils. Wood used as fuel. Leaves lopped for manure.

***Lindernia crustacea*** (L.) F.V.Mueller, Vern. *Pitt Papadi*. (Scrophulariaceae) CSR-GUH 19444.

Decoction of herb is given ½ teaspoonful twice a day for 7 to 21 days for the treatment of abdominal ailments. Paste of herb with cow's urine is applied on cuts and wounds for early healings

***Marsdenia roylei*** Wight & Arn. (Asclepiadaceae) CSR-GUH 19193.

The aqueous extract of root with the black pepper is given thrice a day for a week as antidote to snake bite. The aqueous extract of whole plant is given approximate 10 ml. twice a day for a month in spermatorrhoea. Stem yields rough cordage fiber.

***Nicotiana plumbaginifolia*** Viviani, Vern. & H. *Ban-Tambakhu* Eng. *Wild Tobacco*. (Solanaceae) CSR-GUH 19279.

Leaf paste along with cow's urine is applied on cuts and wounds for early healing. Leaf paste applied on tongue to check excessive growth locally known as, 'Doadjeeb' and skin ailments "Herpes zoster". Dried leaves and seeds used as substitute of tobacco.

***Prinsepia utilis*** Royle, Vern. *Bhainkal* H. *Bekal, Datira*. (Rosaceae) CSR-GUH 19267.

Seed oil warmed and massaged twice a day in arthritic pain. The paste of root is applied for healing of cuts, wounds and boils. Seeds oil edible, Plant used in rituals and religious ceremonies.

***Sida cordata*** (Burm. f.) Borss.-Waalk. Vern. *Bhiyuli* Sans. *Bhumi-bala*. (Malvaceae) CSR-GUH 19517.

Leaves and root bark is given twice a day for two months in gonorrhoea and spermatorrhoea. Stem yields a coarse fibre.

***Solena amplexicaulis*** (Lam.) Gandhi, Vern. *Gwal kakri* H. *Ban kundru, Anantmoo*. (Cucurbitaceae) CSR- GUH 18939.

Extract of root is given approximately a tablespoonful thrice a day for a long time to the treatment of haematuria in livestock. Root and seed given for digestive disorders. Ripe fruits edible leaves and tender shoots used as fodder.

***Solidago virgaurea*** L., Eng. *Golden Rod*. (Asteraceae) CSR-GUH 19112.

Decoction of whole herb is used for the treatment of asthma, rheumatism and applied on wounds. Root chewed in throat irritation.

***Tagetes minuta*** L., Vern. *Koo-basya* Eng. *African marigold*. (Asteraceae) CSR-GUH 19413.

The paste of leaves applied twice a day for a week on burns. Leaves powder used as an insect repellent.

***Taraxacum officinale*** Weber in Wiggers. Vern. *Dudya ghas* H. & Sans. *Dugdhfeni, Barau* Eng. *Common Dandleon, Bitterwort*. (Asteraceae) CSR-GUH 19424.

Root and leaves dried in shade, powdered given 2.5 to 5 g. twice a day for 30-45 days in the treatment of migraine, cardiac complaints, Jaundice, abdominal complaints, and as blood purifier. Paste of root and leaves applied externally on wounds twice a day for a week as an antiseptic.

***Valeriana jatamansi*** Jones in Asiat. Vern. *Sumoya* H. *Mushkabala* Sans. *Heeverum* Eng. *Indian valerian*. (Valerianaceae) CSR-GUH 19290.

Root dried in shade, powdered and given approximately ½ teaspoonful twice a day, in morning and at night for 2-3 months in the treatment of hysteria and urinary disorders. The plant is used as substitute of *Nardostachys jatamansi* by the inhabitants of Tehri. Plant used in rituals and various religious ceremonies.

***Verbascum thapsus*** L., Vern. *Akulya-bir* H. *Akulbir* Eng. *Cow's Lungwort*. (Scrophulariaceae) CSR-GUH 19243.

Whole plant is rubbed thrice a day on tongue for the treatment of excessive growth locally known as 'Daudjeeb'. Leaf paste along with cow's urine is applied externally on affected area for the treatment of 'Chhwrraya' a kind of boils. Plant extract taken in bronchitis and asthma. Plant used in rituals ***Vicia bakeri*** Ali, Fabaceae CSR-GUH 18937.

Seeds are roasted, powdered and given in flatulence. Tender shoot and green pods edible, as well as used as fodder.

***Woodfordia fruticosa*** (L.) Kurz, Vern. *Dholu*, (Lythraceae) CSR- GUH 19521.

Flowers are chewed thrice a day for a month to improve semen quality. Dried flowers used as tonic particularly in hemorrhoids, and as febrifuge.

### Results and Discussion

The study provides information on 23 plant species belonging to 18 families. The plant parts used for medical preparation were roots, rhizomes, bark, leaves, flower, seeds, gum and whole plants. The most frequently utilized plants parts were root, followed by leaves, bark, seed and whole plants. During the course of field investigation the plants reported from the study area were highly valuable for medicinal uses like diarrhea, dysentery, fever, leucorrhoea, leprosy, piles, stomach complaints, ulcer, arthritis, wound, cholera, liver complaints, body swelling, tumor, malaria, rheumatic pain, skin ailments, swelling, tonic, eye diseases, urine complaints, bronchitis etc. The study provides sufficient ground to believe that the traditional medicinal practice using native medicinal plant is alive and well functioning in the study area.

### Conclusion

Today, though the modern civilization is at high pedestals in the field of medicine and treatment of various ailments, these facilities have not reached to aborigines or the people who live far away from the towns, thus these societies still completely depends on the traditional methods of treatment. It has been seen that in some cases our modern sciences is not able to treat some of the chronic ailments and still depend on traditional medicinal therapy as substitute. In the present investigation it has been observed that most of the vaidyas (traditional doctors) who possess this traditional knowledge have crossed more than 70-75 years. If something is not done urgently to retrieve this precious knowledge a day will come when this science will be lost irretrievably with the passing away of such people. Thus it is expected that this investigation will be helpful to conserve the heritable knowledge in the field of herbal treatment and general uses of plants in village ecosystem.

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