**Herbal Based Traditional Practices in a Van Panchayat of Garhwal, Uttarakhand Himalaya**

Toseef Riaz and B.S. Bhandari

Department of Botany and Microbiology HNB Garhwal University, Srinagar (Garhwal), Uttarakhand 246174, India

bhandaribs11@gmail.com, Phone no-9412961154

**Abstract:** Garhwal Himalaya is one of the rich repositories of medicinal plants with sound traditional knowledge of ethnomedicinal plants. The present study was, therefore, aimed to explore the traditional knowledge of herbal medicines prevailing among the inhabitants of Navasu Van Panchayat of Garhwal Himalaya. A total of 50 ethnomedicinal plants belonging to 33 families were identified which are being used to cure various diseases by the Van Panchayat inhabitants. The study reports that herbs are in maximum use (26 species) followed by shrubs (13 species) and trees (11 species). Underground parts and leaves are frequently used in the treatment of diseases. Other parts such as petals, rhizomes, fruits, flower and resins were also found as remedial measures for the treatment of general fever, cough, stomach ache, skin diseases, joint pains, jaundice, gonorrhoea, dysentery, etc. Rosaceae and Asteraceae are the two dominant families contributing in herbal medicines followed by Lamiaceae and Rubiaceae.

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**Keywords:** Ethno-medicines; Traditional Knowledge; Diseases; Treatment; Van Panchayat; Garhwal, Uttarakhand Himalaya.

1. **Introduction**

The biodiversity of Garhwal Himalaya has been an important source of traditional medicines since million of years and has been explored by the people from across the country (Joshi, 1992). Traditional medicine system has been defined as sum of the knowledge, skills and practices based on the theories, beliefs and experience in different communities which are used in the maintenance of health as well as in the diagnostic, prevention and improvement of physical or mental illness. The herbal medicines are considered to be of a great importance among rural or indigenous communities in different parts of the in many developing counties and most of the people in the whole world prefer herbal medicines rather than conventional medicine. According to World Health Organization, about 80% of the world population are depends on herbal medicines and in India about 60% of the people are depend on herbal medicines. During the last few years, the use herbal medicines increased from 2.5% to 12% (Gosh, 2003; WHO, 2002; Strickel & Schuppan, 2007). In India, traditional medicine is based on various systems such as Ayurveda, Unani, Sindda etc., which are used by various part of the India, particularly used by rural folk. A large number of wild or cultivated plants are used by the local people for the treatment of various ailments. People depend on herbal remedies to treat abdominal pain, dysentery, dyspepsia, indigestion, diarrhoea, etc. Medicinal plants are widely used in all section of the community, weather directly as folk remedies or modern refined practices (Rashid, 2012; Riaz and Bhandari, 2015).

Medicinal plants used by various health care systems among different societies. About 80% of traditional medicines used for people for primary health care are derived from plants (Fransworth, 1988). The harvesting method and non- sustainable collection causes many valuable medicinal plants are become rare due to their continuous utilization and to conservation the medicinal plants it has also become essential to protect the traditional knowledge (Swe and Win, 2005; Raghupathy, 2001). The main aim of the present study gives the status of ethno-medicinal plants in Van Panchayat and its importance as medicine by local people in Garhwal region.

India has one of the oldest traditional cultures called ‘folk tradition associated with the use of medicinal plants based on traditional knowledge and skill. The old Indian literature such as Rig-Veda, Atherveda, Charka-Sanhita, included various use of plants in Himalaya region (Samant *et al.,* 1998; Sharma *et al.,* 2011). The Indian Himalayan Region (IHR) is also the habitat of major tribal communities such as Bhotias, Boaxas, Jaunsaries, Tharus, Shaukas, Kharvar and Mahigiri, which use medicinal plants for curing the diseases and ailments through the use of natural medicine. Himalayan region, approximately 1748 plant species which are used as medicine (Singh *et al.,* 2007; Samant *et al.,* 1998). In Uttarakhand, 15% forest area is under Van Panchayat which is the second largest vegetational area after reserve forests. The present study gives the status of ethno-medicinal plant in Navasu Van Panchayat and its importance as medicine by local people in Garhwal region.

1. **Methodology**

The study site was located in Navasu Van Panchayat of Rudraparyag district in Garhwal of Uttarakhand. The study sites was located at 300 12.073’N Latitude to 780 54.825’ E Longitudes and altitude range from 1400 to 1900m asl. The ethnobotanical surveys were carried out during 2014-­2015 in different seasons for the collection of plants and ethnomedicinal information from the village of the study area. Mostly *Quercus oblongata* (syn *Q. Leucotrichophora*), *Rhododendron arboreum, Lyonia ovalifolia and Myrica esculenta* are dominant species in the Van Panchayat Forest.

Besides questionnaires, the documentation was done based on interview, informal discussion and observations following standard methods (Bargali *et al.,* 2013). The collected plant specimens were brought to laboratory, pressed, dried and preserved by conventional methods. The specimens were identified with the help of relevant flora (Naithani, 1984; Gaur, 1999). Plants have been properly labelled with botanical name (s), vernacular name (s), locality, family, date of collection and deposited in the Herbarium of Garhwal University, Srinagar (GUH) obtaining collection number. Plant specimen were arranged alphabetically with their botanical name with citation, local name, family, habit, part used are given in (Table 1).

1. **Result and Discussion**

A total of 50 ethnomedicinal plants belonging to 33 families were collected, identified which are being used in the treatment of various diseases by the local inhabitant. Out of the 50 species, Rosaceae was the dominant family (5 species) followed by Asteraceae with four species each. Lamiaceae and Rubiaceae have three species each. Fabaceae, Ericaceae, Lauraceae, Ranunculaceae, Scrophulariaceae and Urticaceae each having two species used to cure various ailments. All the remaining 23 families were represented by one species each.

There are reports from other parts of Uttarakhand Himalaya pertaining to ethnobotanical uses of plants under a large geographical area (Dangwal *et al.,* 2010; Kapkoti *et al.,* 2014). However, comparatively larger number of species being used in the treatment and cure of various diseases in the present study support the view that Van Panchayats in Uttarakhand. Himalaya is much more sensitive and aware regarding utilization pattern and conservation of natural resources.

Herbs are in maximum use (26 species) followed by shrubs (13 species) and trees (11 species) to cure for various diseases (Figure 1). The plant parts most frequently used for the treatment of various ailments in the study area include as roots (26%) followed by leaves (24%), whole plant (18%), barks (16%), stems (4%) (Figure 2). Also, many other parts like petals, rhizomes, fruits, flower and resins were found in use to cure various remedial measures for the treatment of fever, stomach ache, skin diseases, joint pain, jaundice, ear ache, syphilis, cough, gonorrhoea, dysentery, etc.

Based on present study it has been found that in the Navasu Van Panchayat, a large number of respondents were educated and they were keen to provide the information about indigenous knowledge of medicinal plants and knowledge which passes through generation to generation. It was also found that the young generation has less acquainter with traditional indigenous knowledge but is more sensitive to conserve the biodiversity of Van Panchayat. This has been witnessed during forest fires outbreaks as they indulge themselves with full of passion to control as forest fires and save biodiversity in a participatory manner.

Similar information related to human-plant interactions of many communities have been reported by various workers in different parts of India (Sharma and Singh, 1989; Maikhuri *et al.,* 1998, 2000; Nautiyal *et al.,* 2001a; Kiranjot *et al.,* 2007; Shah *et al.,* 2009, Bhellum and Singh, 2012; Rashid, 2013; Riaz and Bhandari, 2015).

Uttarakhand has a tremendous potential for the cultivation of medicinal plants and it can become a potential income generating resource in a sustainable manner. About 300 medicinal plant species have been reported from Uttarakhand, indicating its a herbal State for strengthening herbal-based industry in this region (Kala *et al.,* 2004). These medicinal plants have been introduced in markets for exploring traditional medicines and in ethno-pharmacology (Balick, 1996; Bussmann, 2002). Unfortunately, this traditional knowledge is become declining due to various logical and illogical reasons. New approaches like some incentive programmes are now being introduced for the conservation of indigenous traditional knowledge existing among different communities in different parts of India.

1. **Conclusion**

The study reveals that the villagers still depend on the number of plants for their daily needs especially for medicines. Traditional knowledge of herbal medicinal plants requires more research to check the properties of the plant and analysis the discovery of new drugs. A large number of medicinal plants are used to care various ailments. Increase in the demands of the herbal medicines at global level has exerted heavy pressure on medicinal plants. As a result, there is a serious threat in the degradation of the medicinal plants diversity. Need to conserve the traditional heritage and natural resources linking local inhabitants through the implementation of some incentive programmes alongwith side-effect free medicinal awareness.

Figure1: Habit of the plants in traditional use

Figure 2: Plant parts used in various ailments

**Table 1: Description of ethno-medicinal plants used by local people of Navasu Van Panchayat**

| **Botanical name** | **Local name** | **Family** | **Habit** | **Part used** | **Used for** |
| --- | --- | --- | --- | --- | --- |
| *Achyranthes aspera*  | Latjiri | Amaranthaceae | Herb | R & LE |  Malarial fever  |
| *Agrimonia pilosa* | Lesu-kuria | Rosaceae | Herb | R | cough and diarrhoea |
| *Ainsliaea apetra* | Kauru | Asteraceae | Herb | R | Root extract with sugar syrup are used in intermitted fever |
| *Anaphalis busua*  | Bugla | Asteraceae | Herb | LE | Cut and wounds |
| *Arachne cordifolia*  | Bhatia | Euphorbiaceae | Shrub | LE & ST | Wounds and antidote to snake bite |
| *Begonia picta*  | Pathar chatta | Begoniaceae | Herb | WP | Colic and Dyspepsia |
| *Berberis asiatica*  | Kilmora | Berberidaceae | Shrub | R | Ophthalmia |
| *Boenninghausenia albiflora* | Pishumar | Rutaceae | Herb | R & LE | Antiseptic and root powdered juice used for check vomiting and dysentery. |
| *Bombax ceiba* | Semal | Bombacaceae | Tree | ST | Gum exuded from stem as aphrodisiac and digestive disorder |
| *Bupleurum hamiltonii* | Jangli-jeera | Apiaceae | Herb | R | Stomach and liver disorder |
| *Cinnamomum tamala* | Dalchini | Lauraceae | Tree | BA | Dyspepsia and throat irritation |
| *Colebrookia oppositifolia*  | Binda | Lamiaceae | Shrub | LE | Paste applied on wounds |
| *Commelina benghalensis*  | Kanjula | Commelinaceae | Herb | WP | Dysentery and applies on body swelling and ache |
| *Flemingia macrophylla*  |  | Fabaceae | Shrub | R | Applied for swelling and Ulcers |
| *Debregeasia salicifolia*  | Syanru | Urticaceae | Shrub | BA | Bone fracture |
| *Delphinium denudatum*  | Nirbishi | Ranunculaceae | Herb | R | Root simulate given in tooth ache, paste of root also used for snake bites |
| *Deutzia staminea*  | Bhat-kukri | Hydrangeaceae | Shrub | LE | As diuretic |
| *Engelhardtia spicata*  | Mahwa | Juglandaceae | Tree | BA | Bark extract used in diarrhoea |
| *Eupatorium adenophorum*  | Kharna | Asteraceae | Shrub | L | Wounds |
| *Ficus palmata* | Bedu | Moraceae | Tree | FR | Digestive disorder |
| *Fragaria nubicola*  | Gand-Kaphal | Rosaceae | Herb | LE | Leaf juice dropped for relieving earache |
| *Galium aparine*  | Kuri | Rubiaceae | Herb | WP | Plant paste applied on skin disease |
| *Galium asperifolium*  | Leswakuri | Rubiaceae | Herb | WP | Paste is useful in skin ailments |
| *Geranium ocellatum* | Kaphlya | Geraniaceae | Herb | R | Antiseptic, liver troubles and fever |
| *Girardinia diversifolia*  | Bhainsya-Kandali | Urticaceae | Herb | LE | Leaf juice given in gonorrhoea |
| *Hedychium spicatum*  | Ban -Haldi | Zingiberaceae | Herb | RH | Asthma, decoction of rhizomes with saw dust of deodara taken in Tuberculosis |
| *Holoptelea integrifolia* | Papri | Ulmaceae | Tree | BA | Decoction of bark applied on rheumatic pain |
| *Hypericum oblongifolium*  | Chitroi | Hypericaceae | Shrub | LE & ST | Leaves and stem given to facilitate delivery |
| *Indigofera heterantha*  | Sakina | Fabaceae | Shrub | LE | Juice of leaves used for Diarrhoea, dysentery and cough |
| *Inula cappa*  | Athhu | Asteraceae | Herb | R | Roots given in suppressed urination |
| *Leptodermis lanceolata* | Padera | Rubiaceae | Shrub | BA | Bark paste used externally applied in migrains |
| *Litsea glutinosa*  | Singrau | Lauraceae | Tree | BA | Plaster made from the bark applied on fractured bones |
| *Lyonia ovalifolia*  | Aiyaar | Ericaceae | Tree | SE |  Seed paste applied on wounds. |
| *Micromeria biflora*  | Gorakhopan | Lamiaceae | Herb | LE | Leaves extract with milk given in gastroenteritis |
| *Myrica esculenta*  | Kaphal | Myricaceae |  |  |  |
| *Oxalis corniculata*  | Bhilmori | Oxalidaceae | Herb | LE | Leaf juice dropped in cataract and conjunctivitis |
| *Pinus roxburghii*  | Chir | Pinaceae | Tree | RE | Asthma and bronchitis |
| *Polygonum plebeium*  | Dondya | Polygonaceae | Herb | R | Root extract applied on head to avoid baldness |
| *Potentilla fulgens* | Bajradanti | Rosaceae | Herb | WP | Plant juice applied on mouth in stomatitis and aphthae |
| *Potentilla gerardiana*  | Bajradanti | Rosaceae | Herb | R | Root paste applied on wounds |
| *Ranunculus arvensis*  | Chambul | Ranunculaceae | Herb | WP | Intermittent fever, asthma and also applied in skin ailments |
| *Reinwardtia indica* | Phiunli | Linaceae | Shrub | PE | Used as tongue wash |
| *Rhododendron arboreum*  | Burans | Ericaceae | Tree | FL & BA | Flower and bark medicinal for digestive and respiratory disorders |
| *Rubus ellipticus* | Hinssar | Rosaceae | Shrub | R | Root extract is used as intoxicating ingredients |
| *Scutellaria scandens*  | Kutlaphul | Lamiaceae | Herb | LE & FL | Dysentery and vomiting |
| *Symplocos paniculata* | Lodhra | Symplocaceae | Tree | BA | Bark used in folk medicines to check abortion |
| *Vervascum thapsus*  | Akulbir  | Scrophulariaceae | Herb | WP | In bronchitis and asthma |
| *Veronica anagallis-aquatica*  | Sada | Scrophulariaceae | Herb | WP | Plant juice applied on cuts, burns and sores |
| *Viola canescens* | Vanfsa | Violaceae | Herb | WP | Malarial fever, bronchitis and asthma.  |
| *Woodfordia fruticosa*  | Dhaula | Lythraceae | Shrub | LE & BA | As febrifuge, dried flowers used as tonic particularly in haemorrhoids |

\*R (Roots), ST (Stem), LE (Leaf), FL (Flower), SE (Seed), BA (Bark), WP (Whole Plant), RE (Resin), PE (Petals), RH (Rhizome)

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