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

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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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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.

2. Methodology

The study site was located in Navasu Van Panchayat of Rudraparyag district in Garhwal of Uttarakhand. The study sites was located at 30^0 12.073'N Latitude to 78^0 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).

3. 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.

4. 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.

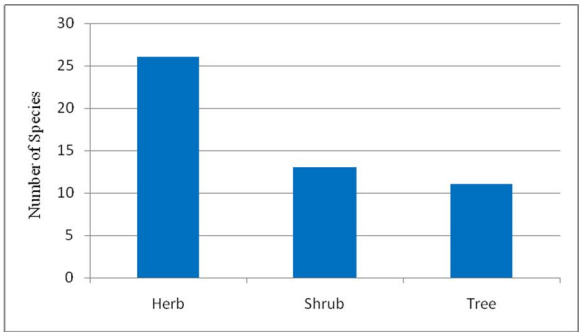

Figure1: Habit of the plants in traditional use

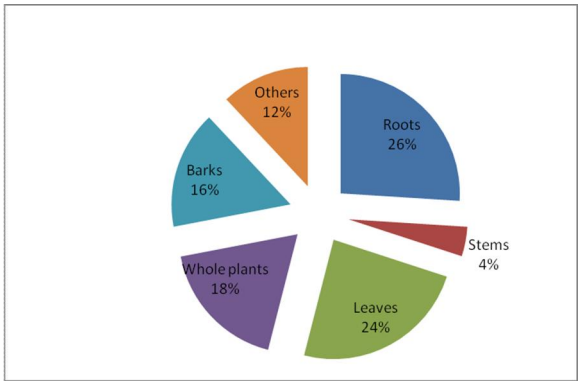

Figure 2: Plant parts used in various ailments

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			

Botanical name	Local name	Family	Habit	Part used	Used for
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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