



Research Article

**ETHNO-BOTANICAL IDENTIFICATION OF SOME WILD HERB SPECIES OF SURKANDA DEVI HILL, UTTARAKHAND**

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**ABSTRACT**

Medicinal plants play important role in healthcare practices among the tribal's and rural people. These Tribal's and rural people have wonderful knowledge about the effective treatment of many health problems only by using the plant parts. This knowledge acquired by the tribal's and rural peoples usually passed from generation to generation only in verbal form. So an effort was carried out to assess ethno botanical information of some wild herb species used by the local dwellers of Surkanda Devi Hill in District Tehri Garhwal of Uttarakhand. The information presented in this paper was gathered by frequent field visit in the forest and adjoining villages, participatory observations, group discussion, interviews with local knowledgeable people residing nearby Surkanda Devi Temple from September 2014 to March 2016. A total of 60 plant species were collected during the field visit out of which 48 plant species under 41 genera and 30 families were reported ethno-medicinal by the local dwellers and used by them for their primary health care. The plants used for different purposes are listed with scientific name, family, local name, ethno-medicinal importance. It can be concluded from this study that local dwellers of Surkanda Devi Hill inherit a rich traditional knowledge about the medicinal use of plants and documentation of this knowledge will open the door for new pharmacological research.

**KEYWORDS:** Ethno botany, Medicinal plants, Local Dwellers, Rural peoples.

**INTRODUCTION**

India has an ancient heritage of traditional medicine. It is greatly to the acknowledgement of the people of India that they were acquainted with a far large number of medicinal plants that the native of any other country on the face of the earth<sup>1</sup>. Traditional use of herbal medicine refers to the long historical use of medicines; their use is well established and widely acknowledged being safe and effective and may be accepted by national authorities. It is obvious from the *Rigveda* and other *Vedic* works, that the Aryans were vigilant spectator of plants. They started studying the flora whole heartily with the purpose of finding out the proper utility of plants<sup>2</sup>. With the emerging worldwide attention, in adopting and studying traditional system and exploiting their potential based on different healthcare systems, the appraisal of the rich heritage of traditional medicine is essential.

Ethno-botany is the scientific relationships that exist between people and plants<sup>3</sup>. It is an integral part of the rural people of the country. But, its importance is least known among the people because, many people are not aware of herbal medicines. Globally, about 85% of the traditional medicines used for primary healthcare are derived from plants<sup>4</sup>. Ethno-botanical information play vital role in scientific research, especially when the literature and field work has not been properly evaluated<sup>5</sup>. Herbal medicines have good values for treating many

diseases like skin diseases, liver and spleen problems, respiratory problems, kidney ailments, diabetes, cough & cold, toothache etc. and also play great role to save lives of many people, particularly in the developing countries. Rural peoples of Surkanda Devi Hill in District Garhwal of Uttarakhand not only depend on the plant resources for food, fodder, fuel, household items, construction of house fiber, dye, tea, essence but also for medicinal purposes.

**Aims & Objective**

1. Survey, collection and identification of some important medicinal plants found on Surkanda Devi Hill of Tehri Garhwal, Uttarakhand.
2. Preparation of herbarium specimen.
3. Authentication of herbarium specimen by relevant authorities.
4. Collection of recent ethno-medicinal information and documentation of this traditional knowledge about ethno-medicinal uses of medicinal plants.

**Study Site**

The area selected for study comes under the Surkanda Beat, Saklana Range and Forest Division Narendra Nagar in district Tehri Garhwal of Uttarakhand, India. It lies in between 78.2887°E and 30.411383°N. It is situated at an altitude of about 2,757 meters or 9976 feet lies close to nearby hill station of Dhanaulti (8 km.),

Chamba (22 km.), Mussoorie (33.9 km.) It is surrounded by a dense forest, affords a scenic view of the surrounding region including Himalayas to the north and certain cities to the south (e.g. Dehradun and Rishikesh)<sup>6</sup>. The forest of this region has mixed type of vegetation with dominancy of *Pinus walichiana* A.B. Jacks., *Abies pindrow* (Royle ex D. Don) Royle., *Cedrus deodara* (Roxb.) G. Don. and *Quercus leucotrichophora* A. Camus. It is also one of the sacred grooves of Uttarakhand due to the temple of Goddess Surkanda Devi.

### Material and Methods

The study was conducted during the period of September 2014 to March 2016 with a view to ethno-medicinal importance of wild herb species of study area and to record the folk wisdom of the natives. Frequent field trips in and around the study area were undertaken in order to survey the inhabiting area of the local people and to collect plant specimens together with pertinent information in context to ethno-medicinal practice. The traditional healers were identified and interviewed extensively during the study.

Two basic approaches were carried out to study the traditional knowledge. The first approach, which was called 'Inventory' include surveying of study area, collection of plant specimens and the second approach which is called 'Interview' involves asking questionnaire about the local name and medicinal uses of plants used by the local dwellers of Surkanda Devi Hill. The collected specimens of plant were shown to the local peoples and asked for their knowledge about the plants. The local healers, elders and women were consulted for the medicinal uses of the plants and this was checked with different people having knowledge of traditional healthcare. Both the approaches were repeated with knowledgeable persons, elders, and traditional healers etc.

The plants specimens were collected, numbered, photographed, documented and prepared herbarium following usual methods of herbarium preparation and preserved. Collected plant specimens were preliminarily identified with the help of Supervisor, Co-supervisor and Regional Flora and verified by Botanical Survey of India Scientist, Uttarakhand Space Application Centre.

**Table 1: Enumeration of herb used as medicine by the local dwellers of Surkanda Devi Hill, District Tehri Garhwal, Uttarakhand**

S.No	Scientific Name	Family	Local Name	Habit	Medicinal Value
1	<i>Abies pindrow</i> (Royle ex D. Don) Royle.	Pinaceae	Jhilla, Dodima	Tree	ETM
2	<i>Anaphalis margaritacea</i> (L.) Benth.	Asteraceae	Bugla, Bugalya	Herb	ETM
3	<i>Anemone vitifolia</i> Buch.-Ham. ex DC.	Ranunculaceae	Mudeela, Agali	Herb	ETM
4	<i>Artimisia nilagirica</i> C.B. Clarke.	Asteraceae	Pati, Titpati	Herb	ETM
5	<i>Artemisia roxburghiana</i> Wall.	Asteraceae	Pati, Titpati	Herb	ETM
6	<i>Aster peduncularis</i> Wall.	Asteraceae	Phulyan	Herb	ETM
7	<i>Aster thomsonii</i> C.B. Clarke.	Asteraceae	Phulari	Herb	ETM
8	<i>Berberis asiatica</i> Roxb. ex DC.	Berberidaceae	Kilmodu	Shrub	ETM
9	<i>Berberis chitria</i> Buch.-Ham. ex Lindl.	Berberidaceae	Kingora	Shrub	ETM
10	<i>Bergenia ciliata</i> (Haworth) Sternberg.	Saxifragaceae	Silphara	Herb	ETM

Questionnaire was planned to collect information on the local name of the plants, medicinal importance and collection for personal use or for selling. As most of the traditional healers were illiterate, structural interviews were conducted using a series of predetermined questions. The data collected was based on first hand information. The information regarding the medicinal value of plants was solely gathered from local dwellers living nearby the Surkanda Devi Hill.

The methods employed during the study were designed with the sole purpose of eliciting the precious wealth of information on the ethno-medicinal uses of the plants practiced by the people residing near to Surkanda Devi Hill. The plants have been enumerated alphabetically according to their scientific name, family, local name, habit, and medicinal value.

### RESULTS

In the present study total 60 plant species were collected from the forest but the native have ethno-medicinal uses for 48 plants belonging 30 families were reported by the local dwellers. These 48 wild herb species used by local dwellers of study area for their primary health care documented in Table No 1. Out of 48 plant species 07 species belongs Asteraceae, 04 species belongs to Pinaceae, 03 species belongs to Lamiaceae, Polygonaceae, Ranunculaceae and Rosaceae each, 02 species belongs to Berberidaceae, Caprifoliaceae, Celastraceae, Ericaceae and Gentanaceae each and 01 species belongs to Amaranthaceae, Apiaceae, Araliaceae, Betulaceae, Crassulaceae, Geraniaceae, Myrsinaceae, Orchidaceae, Plantagenaceae, Rubiaceae, Salicaceae, Saxifragaceae, Thymaliaceae, Urticaceae, Valerianaceae and Violaceae each. Among the reported ethno-medicinal plant species 28 species were Herbs, 08 species were Shrubs and Trees each, 04 species were Climbers.

Table No 2. documented those wild herb species that are founded on the Surkanda devi Hill but not used as medicine by the local healers/dwellers of study area. These plant species mainly used as fodder, fuel and household items etc.

11	<i>Betula alnoides</i> Buch.-Ham.ex D.Don.	Betulaceae	Kath-Bujh	Tree	ETM
12	<i>Cedrus deodara</i> Roxb. ex D.Don.	Pinaceae	Deodara	Tree	ETM
13	<i>Clematis montana</i> Buch.-Ham. ex DC.	Ranunculaceae	Kaunia	Climber	ETM
14	<i>Cotoneaster bacillaris</i> Wall.	Rosaceae	Ruins	Shrub	ETM
15	<i>Cotoneaster microphyllus</i> Wall.	Rosaceae	Bugarchilla	Shrub	ETM
16	<i>Cyathula tomentosa</i> (Roth) Moq. in DC.	Amaranthaceae	Lichkhura	Herb	ETM
17	<i>Daphne papyracea</i> Wall. ex G.Don.	Thymeleaceae	Bhanchoi	Shrub	ETM
18	<i>Elsholtzia flava</i> (Benth.) Benth.	Lamiaceae	Phatakva	Herb	ETM
19	<i>Euonymus tingens</i> Wall.	Celastraceae	Bhambeli	Tree	ETM
20	<i>Geranium wallichianum</i> D.Don.	Geraniaceae	Kaphalya	Herb	ETM
21	<i>Hedra nepalensis</i> K. Koch.	Araliaceae	Laguli	Climber	ETM
22	<i>Lyonia ovalifolia</i> wall.	Ericaceae	Anyar	Tree	ETM
23	<i>Micromaria biflora</i> Benth.	Lamiaceae	Garur-Buti	Herb	ETM
24	<i>Myrsine Africana</i> Clarke in Hook.	Myrsinaceae	Chupra	Shrub	ETM
25	<i>Origanum vulgare</i> L.	Lamiaceae	Jonkjari	Herb	ETM
26	<i>Parnessia nubicola</i> Wall ex Royle.	Celastraceae	Phutkya	Herb	ETM
27	<i>Pesicaria amplexicaulis</i> D.Don.	Polygonaceae	Kutrya	Herb	ETM
28	<i>Pimpinella diversifolia</i> DC.	Apiaceae	Teroi, Phoree	Herb	ETM
29	<i>Pinus roxburghii</i> Sargent.	Pinaceae	Chira, Kulain	Tree	ETM
30	<i>Pinus wallichiana</i> A.B. Jackson.	Pinaceae	Chira, Kail	Tree	ETM
31	<i>Plantago major</i> L.	Plantaginaceae	Lahurya	Herb	ETM
32	<i>Rhododendron arboreum</i> Sm.	Ericaceae	Buransha	Tree	ETM
33	<i>Rosa brunonii</i> Lindl.	Rosaceae	Kujju, Kuji	Climber	ETM
34	<i>Rubia cordifolia</i> L.	Rubiaceae	Manjeettha	Climber	ETM
35	<i>Rumex hastatus</i> D.Don. Prodr.	Polygonaceae	Amera	Herb	ETM
36	<i>Rumex nepalensis</i> Sprengel.	Polygonaceae	Amlyya	Herb	ETM
37	<i>Satyrium nepalense</i> D.Don.	Orchidaceae	Salang-Mishri	Herb	ETM
38	<i>Sedum adenotrichum</i> Wall. ex Edgew.	Crassulaceae	Looniya	Herb	ETM
39	<i>Senecio chrysanthemoides</i> DC.	Asteraceae	Zerjum	Herb	ETM
40	<i>Swertia ciliata</i> (D.Don ex G.Don) Burt.	Genteniaceae	Chirtotu	Herb	ETM
41	<i>Swertia cordata</i> Wall. C.B. Clarke.	Genteniaceae	Chirtotu	Herb	ETM
42	<i>Taraxcum officinale</i> Weber.	Asteraceae	Kanphool	Herb	ETM
43	<i>Thalictrum foliolosum</i> DC.	Ranunculaceae	Kirmuli	Herb	ETM
44	<i>Urtica parviflora</i> Roxb.	Urticaceae	Kandali	Herb	ETM
45	<i>Valeriana wallichii</i> DC.	Valerianaceae	Sumaya	Herb	ETM
46	<i>Vibenum cotonifolium</i> D.Don.	Caprifoliaceae	Titmulya	Shrub	ETM
47	<i>Vibenum mullaha</i> Buch.-Ham.	Caprifoliaceae	Jhidsi	Shrub	ETM
48	<i>Viola pilosa</i> Blume.	Voilaceae	Kauru	Herb	ETM

**Table 2: Enumeration of Herbs not used as medicine by Local Dwellers Surkanda Devi Hill, District Tehri Garhwal, Uttarakhand**

S.No	Scientific Name	Family	Habit	Medicinal Value
1	<i>Campanula benthamii</i> Wall. ex Kitam.	Campanulaceae	Herb	NETM
2	<i>Cornus capitata</i> Wall.	Cornaceae	Tree	NETM
3	<i>Cupressus torulosa</i> D.Don.	Cupressaceae	Tree	NETM

4	<i>Lindenbergia grandiflora</i> Buch.-Ham ex DC.	Scrophulariaceae	Herb	NETM
5	<i>Loranthus falcatus</i> L.F.	Loranthaceae	Herb	NETM
6	<i>Oenothera rosea</i> L Herit ex Aiton in Hort.	Melastomataceae	Herb	NETM
7	<i>Pedicularis punctata</i> Decne.	Scrophulariaceae	Herb	NETM
8	<i>Pyrus malus</i> L.	Rosaceae	Tree	NETM
9	<i>Pyrus pashia</i> Buch.-Ham ex D.Don. Prodr.	Rosaceae	Tree	NETM
10	<i>Quercus floribunda</i> Lindl.	Fagaceae	Tree	NETM
11	<i>Quercus lecotrichophora</i> A. Camus.	Fagaceae	Tree	NETM
12	<i>Salix denticulata</i> Ander.	Salicaceae	Shrub	NETM

ETM = Ethno-medicinal, NETM = Non Ethno-medicinal

## DISCUSSION

The use of wild herb species as medicine by the local dwellers of Surkanda Devi Hill, District Tehri Garhwal, Uttarakhand had chosen practice in this region throughout history, the knowledge of which was gathered through experience of many generations. It was found during the study that traditional healer of more age having good traditional knowledge about the uses of medicinal plant of study area. Among all the local dwellers, young generation didn't show any interest in traditional system of medicine but the consensus among users indicates these wild herb species have curative effect.

## CONCLUSION

The ethno-botanical survey of the village of Surkanda Devi Hill, District Tehri Garhwal, Uttarakhand revealed that the people of this area are possessing good knowledge of herbal drugs but as these local dwellers are in progressive exposure to modernization, their knowledge of traditional uses of plants may be lost in due course. The knowledge needs more invention and research related to isolation and purification of active compounds from these plants should be carried out to provide leads in future drug therapy.

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