

Ethnobotanical Study of Plants Used By Ethnic People of Karbari Grant Village Dehradun, Uttarakhand

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Abstract: In the recent years, more attention is being given to sustainable use and integrated management of the economically important species due to an increasing recognition of their contribution to fulfil basic needs of the people, household economies, food security and disease cure. Medicinal plants play a vital role in the primary health care of the people. This paper gives the information about the ethnobotanical research conducted in Karbari Grant village of Dehradun, Uttarakhand. The survey was undertaken through frequent field visits, interviews and discussions with native tribal communities to collect information of the local plants. During the course of study, 50 ethnobotanically important plant species belonging to 33 different families were recorded. The aim of the study was to gather the valuable information from the tribal people regarding the plants.

Keywords : Ethnobotany, Tribal people, Karbari Grant village

1. INTRODUCTION

Ethnobotany is the study of the relationship between plants and people: From "ethno" - study of people and "botany" - study of plants. Ethnobotany is considered a branch of ethnobiology. The focus of ethnobotany is on how plants have been used, managed and perceived in human societies. In the recent years, more attention has been given to sustainable use and integrated management of the economically important species due to an increasing recognition of their contribution to fulfil basic needs of the people, household economies, food security and disease cure. Medicinal plants play a vital role in the primary health care of the people (Akhtar *et al.*, 2018). Keeping in view the high cost and various side effects of allopathic medicines, the use of the medicinal plants for the treatment of different ailments plays a significant role in meeting the primary health care of the rural communities (Mir *et al.*, 2018). The tribal people use the plants for various purposes mostly for the treatment of diseases (Kumar *et al.*, 2015). The plant parts used, preparation, and administration of drugs vary from one place to another (Verma *et al.*, 2007). There are considerable economic benefits stemming from the development of indigenous medicine and the use of medicinal plants for the treatment of various diseases (Azaizeh *et al.*, 2003). As per the record of WHO, about 80% of the population in developing countries are directly dependent on plants for medicines (Itoo *et al.*, 2011). The population of tribal people living in forests depends on the forests for their basic survival needs (Jan *et al.*, 2018). In India a large population known as tribal live in forests. The northern part of India harbours a great diversity of medicinal plants because of the majestic Himalayan range. Uttarakhand, which lies in the western Himalayan region is famous for its rich variety of herbs, medicinal and aromatic plant species. Garhwal Himalaya of Uttarakhand is one of the richest floristic zones of India and contains more than 300 species of medicinally important plants (Gaur 1999). Karbari Grant village where the present study has been carried out represents dense and diversified vegetation comprising large number of trees, annual or perennial herbs and grasses. The area has a rich diversity of medicinal, aromatic and timber yielding plants. The tract is inhabited by Gujjar tribes who live in close proximity of forests. A survey was carried out to report some of the plants having tremendous ethnobotanical use among

the tribal inhabitants of Karbari Grant village. Ethnobotanical information on medicinal plants is useful not only in conservation of traditional cultures, but also for community health care and drug development (Farooq *et al.*, 2014).

There is dense vegetation and rich varieties of plants in the Karbari Grant village region but absence of a proper record regarding the traditional medicinal knowledge of the tribal people have suggested, to conduct the present study with an objective to find out the various uses of the plant flora used by the inhabitants in this region.

2. MATERIALS AND METHODS

Study area: Dehradun is in the Doon valley on the foothills of the Himalayas nestled between the river Ganges on the east and the river Yamuna on the west. The study was carried out in Karbari grant village (Figure 1) Uttarakhand which is some 16 Km away from the capital city Dehradun near the border line of the state. The area is about 1-2sq.km and is having a dense vegetation cover and is mainly dominated by *Ardisia solanacea*. The area is located at 2250 ft. above the sea level which is in the latitude 30°2' to 30°26' (N) and Longitude 77°52' to 78°-19' (E). The mean maximum temperature is 19.2°C to 36.6°C and mean minimum temperature is about 6.3°C to 23.2°C.



Figure 1: Map of the study area (Karbari Grant village)

Methodology: The present study was conducted in the year 2017 in the Karbari Grant village region. Usual methods of collection, preservation and maintenance of specimens in herbarium were followed strictly. The freshly collected samples of plants were processed, preserved, and mounted on herbarium sheets. Then the plants were identified with the help of BSI (NRC) Dehradun and by the help of concerned

floras (Kanjilal and Gupta 1969; Babu 2003). The information regarding the traditional knowledge and local uses of plants within the study area, local names, plant parts used and modes of administration was recorded through intensive interviews and discussions with elderly people (men/women) and herbal healers of the area, using a well-structured questionnaire (Given below). The resultant information was recorded in the ethnobotanical field notebook along with important medicinal uses. Participants of all age groups were interviewed for the purpose of collecting the valuable information.

Questionnaire used to collect information on plant use.

Informant Details

- Name:
- Sex:
- Age:
- Village:
- Panchayat:
- Block:
- District:
- Occupation:
- Education:

Ethnobotanical uses of plants

1. Local/vernacular name of plant:
2. Scientific name of plant:
3. Part used of plant:
4. Name of ailment/other purposes in which plant part is used:
5. Availability in natural habitat:

3. RESULTS AND DISCUSSION

The advent of modernization and industrialization the traditional knowledge system in India is disappearing at an alarming rate. So there is an urgent need for inventorying and recording all ethnobotanical information among the diverse ethnic communities. Industrialization of cities is minimizing the area of forest and changing habitat of various plants. As a result many species of plants population is decreasing at alarming rate. This documentation on ethnobotanical uses of plants from Karbari Grant village has been documented for their ethnobotanical values and their interesting therapeutic properties for various ailments. Many of the plant species are used frequently (sometimes only occasionally) for curing various diseases. The local people believe in the healing power of these plants, but knowledge is restricted to very few elderly folks only. Moreover, the valuable information needs to be collected and documented, so that it can serve mankind for generations to come and may also conserve the valuable knowledge which is present only in oral forms.

During the course of study there were 50 plant species (ethnobotanically important) belonging to 33 families had documented herewith. Analysis of data based on their habit shows that herbs were dominating species. The complete list of the plant species along with their ethnobotanical values have been presented in the table. Fabaceae was found to be used abundantly with (7-species), followed by Malvaceae (4-species), Asteraceae, Cyperaceae and Moraceae 3 species younger generation does not seem much interested in keeping this traditional knowledge alive and spends most of the time growing commercial crops and fruits for survival

needs. But with the passage of time, knowledge about these valuable medicinal will get diminished. each (Figure2).

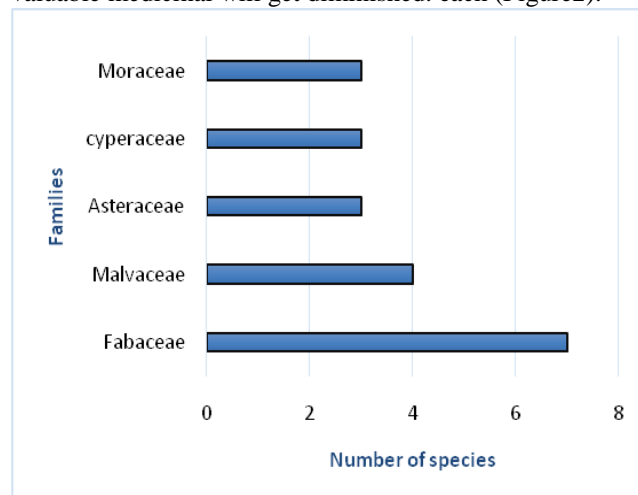


Figure 2: Dominant families with species no. and %age

It was found that various parts of the plants are being used differently for survival needs. Highest count of the plants were used completely besides leaves and other parts (Figure 3).

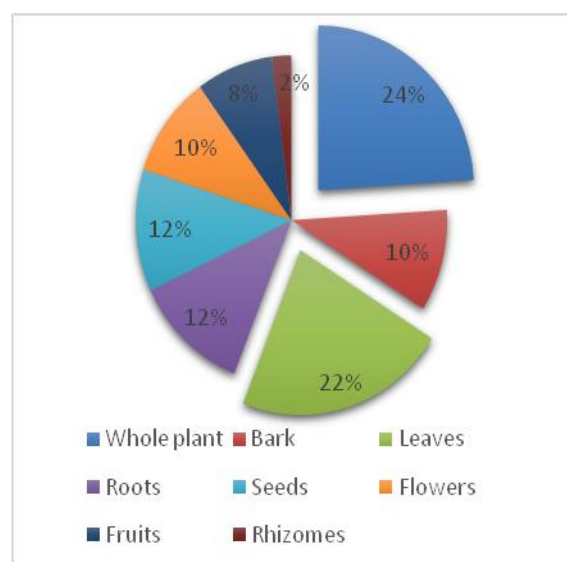


Figure 3: Parts of plants commonly used

Plants are used as decoction (e.g., *Achyranthes aspera*), Fire wood (e.g., *Albizia chinensis*), ornamental (e.g., *Lamium maculatum*) and also for making vegetable recipes (e.g., *Cassia mimosoides*). Present survey is based on a need of proper conservation method that is being highly required to save the valuable flora of the area. There is an appearance of dense vegetation in the region raise a false feeling among local people that it is long lasting and can be used without thinking about future. However, by the influences of commercialization of indigenous knowledge at global level, plant resource are used in huge amount. There is shrinking population of some plant species on account of extensive use by pharmaceutical industries based on our traditional medicinal system.

Table 1: List of Ethnobotanicals used by the local people of Karbari Grant village.

S. No	Botanical Name	Vernacular Name	Family	Part Used	Common Uses
1	<i>Achyranthes aspera</i> L.	Chirchita	Amaranthaceae	Whole plant	Diuretic, antispasmodic, laxative and stomachic.
2	<i>Albizia chinensis</i> (Osbeck) Merr.	Kala siris	Mimosaceae	Bark	Lotion for cuts, scabies, as low quality firewood and as shade tree.
3	<i>Albizia procera</i> (Roxb.) BENTH.	Safed-siris	Fabaceae	Leaves	Insecticidal properties, anti-cancer activity, also for furniture and carts.
4	<i>Ardisia solanacea</i> (Poir.) Roxb.	Bisi	Primulaceae	Roots	Edible, for indigestion, antispasmodic and as dye.
5	<i>Argemone maxicana</i> L.	Shialkanta	Papaveraceae	Seeds	As ornamental, for fever, cough and asthma.
6	<i>Azanza lampas</i> (Cav.) Alef.	Jangli bhendi	Malvaceae	Fruits	As clothing materials and jaundice.
7	<i>Barleria strigosa</i> (Willd.)	Saireya	Acanthaceae	Whole plant	Prevent greying of hair, whooping cough, urinary disorders.
8	<i>Bidens biternata</i> (Lour.)	Mangrinya	Asteraceae	Flowers	Leprosy, tumours, phthisis, coughs, bites and other wounds.
9	<i>Boehmeria platyphylla</i> Buch.-Ham. ex D. Don	Kaamle	Urticaceae	Leaves	Diarrhea, dysentery, vomiting, and urinary problems.
10	<i>Bombax ceiba</i> L.	Saalmali	Bombacaceae	Leaves	Leprosy and spider or snake bites, bandages.
11	<i>Butea monosperma</i> (Lam.) Taub.	Chhola	Fabaceae	Flowers	Diarrhea, liver disorders, as fuel.
12	<i>Cassia mimosoides</i> L.	Ikrar	Fabaceae	Roots	Vegetable, for fractures, cleaning of the uterus by pregnant women.
13	<i>Cassia occidentalis</i> L.	Chakundra	Fabaceae	Whole plant	Vegetable, diuretic, stomachic and ease menstruation.
14	<i>Cassia tora</i> L.	Chakavat	Fabaceae	Seeds	As tea, anthelmintic and laxative properties, dyspepsia, constipation.
15	<i>Centella asiatica</i> (L.) Urban	Brahmi-buti	Apiaceae	Whole plant	Preventing pregnancy, malaria, varicose veins and ulcers.
16	<i>Cirsium arvense</i> (L.) Scop	Kardra	Asteraceae	Roots	Eaten raw or cooked, for indigestion, diuretic, treat toothache.

17	<i>Clematis gouriana</i> Roxb.	Belkum	Ranunculaceae	Leaves	Wound healing, antimicrobial, and anti-inflammation.
18	<i>Cocculus hirsutus</i> (L.) Diels	Bajar-bel	Menispermaceae	Leaves	Eczema, gonorrhoea, rheumatism and for baskets chairs.
19	<i>Cynodon dactylon</i> (L.) Pers	Dhoboghas	Poaceae	Whole plant	Antiseptic, astringent, demulcent, for dropsy, dysentery and epilepsy.
20	<i>Cyperus iria</i> L.	Moth	Cyperaceae	Whole plant	Stimulant, stomachic and tonic, menstrual problems, weaving mats.
21	<i>Cyperus nutans</i> Vahl.	Arak-ghas	Cyperaceae	Whole plant	Fodder, ornamental and for the formation of mats.
22	<i>Desmodium gangeticum</i> (L.) DC	Chirpat	Fabaceae	Roots	For gall bladder stones and kidney stones.
23	<i>Desmodium hetrocarpon</i> L.	Chamlai	Fabaceae	Leaves	Cough strains, fainting and convulsion.
24	<i>Dioscorea deltoidea</i> (Wall.) Ex kunth	Kanis	Dioscoreaceae	Roots	Washing shawls and woollen cloths.
25	<i>Drymaria cordata</i> (L.) Willd. Ex R. & S.	Pithpapra	Caryophyllaceae	Whole plant	Diuretic, stomachic and vesicant properties.
26	<i>Emilia sonchifolia</i> (L.) DC	Hirankhuri	Asteraceae	Flower	Inflammations, night blindness, sore ears and wounds, diarrhea.
27	<i>Ficus auriculata</i> Lour.	Fagoora	Moraceae	Fruits	Preparation of jams, curries, salads and juice.
28	<i>Ficus virens</i> Aiton.	Padari	Moraceae	Bark	Leucorrhoea, ulcers, construction, tool making and as fuel.
29	<i>Fimbristylis bisumbellata</i> (Forsk.) Bubani.	–	Cyperaceae	Rhizomes	Soil binder, mattings and baskets, kidney problems.
30	<i>Duchesnea indica</i> (Andr.) Focke	Kaphlya	Rosaceae	Leaves	Anticoagulant, antiseptic, depurative and good ground cover plant.
31	<i>Hedyotis hispida</i> (Benth.) Retz.	Daman-papra	Rubiaceae	Flowers	Dysentery, stomach aches, headaches.
32	<i>Jasminum multiflorum</i> (Burm.f.) Andr.	Jangli-chambeli	Oleaceae	Flowers	Ornamental, antidote to snake bites, treat indolent ulcers.

33	<i>Lagerstroemia parviflora</i> Roxb.	Dhaura	Lythraceae	Bark	Rough rope, Dye and fire wood.
34	<i>Lamium maculatum</i> L.	Tilka	Lamiaceae	Leaves	Salad, stews or soups, and ornamental.
35	<i>Lepidium virginicum</i> L.	Chansar	Brassicaceae	Seeds	Diuretic, easing rheumatic pain, anti-asthmatic, antitussive and cardio tonic.
36	<i>Lindernia ciliata</i> (Colsm.) Penell	Puspam	Linderniaceae	Leaves	Liver problems, spleen diseases, constipation, loss of appetite, asthma.
37	<i>Morus nigra</i> L.	Shahtut	Moraceae	Bark	Antibacterial, diuretic, hypoglycaemic, ophthalmic.
38	<i>Phoebe lanceolata</i> Nees.	–	Lauraceae	Whole plant	Wounds and sores, fuel and for seed dispersal.
39	<i>Poa annua</i> L.	Kusha	Poaceae	Whole Plant	Fodder, used in lawns, sports fields.
40	<i>Populus ciliata</i> Wall.	Chalun	Salicaceae	Bark	Blood purifier, tonic, stimulant, constructing material.
41	<i>Ranunculus sceleratus</i> L.	Jal-dhania	Ranunculaceae	whole plant	Anti-rheumatic, colds, spermatorrhoea.
42	<i>Reinwardtia indica</i> Dumort.	Basanthi	Linaceae	Leaves	Paralysis, applied to wounds infected with maggots.
43	<i>Sapium sebiferum</i> Roxb.	Pahari shisham	Euphorbiaceae	Seeds	Skin ulcers, skin bites carving and furniture making, fuel wood.
44	<i>Sida cordata</i> (Burm.f.) Boiss.	Andiobal	Malvaceae	Roots	Pimples, gonorrhoea, For making ropes and cords.
45	<i>Sida cordifolia</i> L.	Kharenti	Malvaceae	Whole plant	Analgesic, diuretic, emollient, febrifuge, nervine and stimulant.
46	<i>Solanum torvum</i> Sw.	Makoya	Solanaceae	Leaves	Cooked or eaten raw, for fever, cough, asthma.
47	<i>Syzygium cumini</i> (L.) Skeels	Jamun	Myrtaceae	Whole plant	Sore throat, bronchitis, biliousness, dysentery and ulcers.
48	<i>Terminalia chebula</i> Retz. & willd.	Harrar	Combretaceae	Seeds	Eaten as a snack, constipation and digestive complaints.
49	<i>Urena lobata</i> L.	Dudh-khal	Malvaceae	Seeds	Goitre, indigestion, leucorrhoea, malaria and rheumatism.

50	<i>Ziziphus mauritiana</i> Lam.	Baer	Rhamnaceae	Fruits	Treatment of indigestion, fever, construction, furniture.
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4. CONCLUSION

Plants are utilized in our traditional medicinal system and a large population still depending on these traditional medicines. Thus an urgent need is felt for proper documentation of the valuable information of ethnobotany and to take steps for conservation of these plants as well as their natural habitats. The present study has underlined the potential requirement of ethnobotanical survey and documentation of traditional knowledge regarding the use of plants parts for the benefit of mankind

5. ACKNOWLEDGEMENT

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6. CONFLICT OF INTEREST

Authors do not have any conflict of interest to declare

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