

Ethnobotanical plant diversity of Betalghat region, Kumaun Himalaya

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ABSTRACT

The magnificent Himalaya is well recognized for its bio-physical diversity and socio-cultural heritage, traditional systems and an ample quantity of indigenous knowledge. The study was conducted for the documentation of ethnobotanical use of plants from Beatalghat region, Kumaun Himalaya. Total 186 ethnobotanical plants species belonging to 76 families, 160 genera (Angiosperms- 184, Gymnosperms- 2), different habitats such as tress (36%), herbs (31%), shrubs (25%), climbers (8%), were records. Top ten dominant families were Fabaceae (13 species), Euphorbiaceae (8 species), Rosaceae (8 species), Solanaceae (8 species), Moraceae (7 species), Caesalpinaceae (6 species), Mimosaceae (5 species), Lamiaceae (5 species), Rubiaceae (5 species), Anacardiaceae (5 species). The majority of plant species were used for medicinal purposes (32%), followed by fuel (23%), fodder (22%), wild edibles (11%), timber (5%), agriculture implements (3%), religious (3%) and fibre (1%) which were further classify according to plants parts used such as: leafs (33%), wood (26%), root (9%), fruit (9%), bark (7%), whole plant (5%), seed (4%), flower (2%), stem, rhizomes, tuber, resin, latex, twig (1%). It was found that 127 medicinal plant species were used by local people for curing 64 diseases such as fever, diarrhea, cough, cuts and wounds, skin diseases, arthritis, asthma, jaundice, etc.

Key Words: : Ethnobotanical plant, Diversity, Betalghat region, use pattern, ailments

INTRODUCTION

The Indian Himalaya is the home of cultural and biological diversity and a paradise of important plants. In Himalaya, most of the people live in villages and use plants for medicine, food, fodder, fuel, timber, agricultural implements and various other purposes (Samant & Dhar, 1997). In the Indian Himalayan region,

about 1748 species of medicinal plants 675 species of wild edibles, 279 species of fodder, 118 species of essential oil yielding medicinal and aromatic plants and 155 species of sacred plants have been recorded (Samant & Pant, 2003, Samant et al.,1998, Samant & Palni, 2000). Uttarakhand is a part of Indian Himalayan

Region (IHR) situated between the latitudes of 28°43'.45"-31°8'10" N and the longitudes of 77°35'5"-81°2'25" E (Uniyal et al., 2007) at the trijunction of Nepal, Tibet and India. It covers an area of 53,485 Km² with total forest area of about 65% of the total geographical area which is consisting 1.68% of the land area of the country (Shrivastava & Singh, 2005). Ethnobotany has emerged as an important branch of study which focused on the utility of different plant species and their properties as food, medicines and other uses (Nautiyal et al., 1997, Kumari et al., 2011, 2012). Ethnobotanical information on important plants and their use by local inhabitants is useful not only in conservation of traditional knowledge and biodiversity, but also to improve community health care (Farooq et al., 2014).

The aim of the present study is to document the various ethno botanical plant species of Betalghat region of Kumaun Himalaya with authentic scientific

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name, vernacular name, and family and accession number for further research. The main objectives of the study are:

- To Document the ethnobotanical plants of the area and to collect information regarding uses and availability of ethnobotanical plants.
- To make a platform for further research with sustainable utilization of the resources.

Materials and Methods

Geographical description of study area:

The Present study was made in Betalghat region of Nainital district (Year 2016) lies between 29°38'925" North latitude and 79°49'465" East longitude, covering an area of 256.33 Km² with an altitudinal range varies from 700 to 1800 m asl (Figure-1). The region is bounded by Tarikhet and Bhikyasain block of district Almora on the north, Kotabag block of district Nainital on the south, Salt block of district Almora on west and Ramgarh block of district Nainital on the east. The nearest town is Ramnagar, Haldwani, Ranikhet, and Bhikyasen. The vegetation of the region mainly comprises of tropical, sub-tropical and temperate forest.

Data Collection and Sample identification:

Study was conducted in five sites of Betalghat region viz. Betalhat, kherna, Ratighat, Bhawali, Bhatrojkhana. As the empirical research involved the use of Participatory Rural Appraisal (PRA) tools (Silverman, 2005) thus the study is based on ethno-botanical survey, identification of ethno-botanical plants and documentation of ethno-botanical uses with the help and participation of local/

rural peoples, farmers, traditional knowledge holders/ local *vidyas* to know the local names and medicinal importance of the mentioned plants. The information was collected with the help of questionnaire from the rural people, farmers, traditional knowledge holders/ local *vidyas* to know the local names and ethnobotanical importance of the mentioned plants.

In study area 10 percent of total households (People of different genders and age groups) were interviewed. The collected plants specimens were indentified with the help of different floras and manuscripts, standard literature (Osmaston 1927, Gupta 1968, Naithani 1984–1985, Gaur 1999) and matched with the herbarium specimen of Regional Research Institute of Himalayan Flora, CCRAS, Ranikhet. The well preserved plant specimens were deposited in the Herbarium of RARI, CCRAS, Ranikhet with acronym (RKT). * Accession no. of collected plants is given below in the table.

RESULTS

The present study compiles 186 ethnobotanical plant species belonging to 76 families, 160 genera (Angiosperms- 184, Gymnosperms- 2), used by local people for their various ethnobotanical purposes (Table-1). Out of 76 families recorded ten dominant families were Fabaceae (13 species), Euphorbiaceae(8 species), Rosaceae(8 species), Solanaceae(8 species), Moraceae(7 species), Caesalpinaceae(6 species), Mimosaceae(5 species), Lamiaceae(5 species), Rubiaceae(5 species), Anacardiaceae(5 species) (Figure-2). Within the documented species,

Table 1: Diversity and utilization of ethnobotanical plants of Betalghat region, Kumaun Himalaya

Figure 1: Map of the study area (Source- <http://www.uttaranchal.org.uk>)



S. No.	Local Name	Botanical Name	Family	Habit	Part use	Ethnobotanical Uses	Accession Number (RARI)
1.	Basing	<i>Adhatoda vasica</i> Nees.	Acanthaceae	Sh	Lf	Medicinal (Leafs are boiled with Jiggery and decoction is given to cure asthma and chronic cough.)	RKT 15375
2.	Jhinti	<i>Barleria cristata</i> L.	Acanthaceae	H	Lf	Medicinal (Leaf paste is applied externally on cuts and wounds for healing purpose. Decoction of leafs in given once a day to alleviate headache.)	RKT 26327
3.	Kawgori	<i>Dicliptera bupleuroides</i> Nees.	Acanthaceae	H	Lf	Medicinal (Decoction of leafs is given to cure cough, dysentery), Fodder	RKT 26954
4.	Putli	<i>Acer oblongum</i> Wall. ex DC.	Aceraceae	T	Lf, Wd	Fodder, Fuel	RKT 5376
5.	Rambans	<i>Agave cantala</i> Roxb.	Agavaceae	Sh	Lf, Rt	Medicinal (Leaf and root extract used as diuretic and purgative and also used in syphilis, scrofula, menstrual disorders, jaundice, insect and scorpion sting.)	RKT 940
6.	Apamarg	<i>Achyranthus aspera</i> L.	Amaranthaceae	H	Rt	Medicinal (Decoction of roots is used in stomach-ache and an aqueous extract for stones in the bladder.)	RKT 26313
7.	Apamarg	<i>Achyranthus bidentata</i> Blume.	Amaranthaceae	H	Rt, Sd	Medicinal (Decoction of root and seed is used in conjunctivitis, cough, asthma, fever, bronchitis, headache, pneumonia, piles.)	RKT 26251
8.	Jhingan	<i>Lannea coromandelica</i> (Houtt) Merr.	Anacardiaceae	T	Br, Wd	Medicinal (Decoction of the bark is given in diarrhoea, dysentery and stomach-ache.), Fuel	RKT 2765
9.	Kakar	<i>Pistacia integerrima</i> Sw.	Anacardiaceae	T	Lf, Wd	Fodder, Timber, Fuel	RKT 27215
10.	Tang	<i>Rhus parviflora</i> Roxb. ex DC.	Anacardiaceae	Sh	Lf, Br, Wd, Fr	Medicinal (Decoction of bark and leafs given at intervals during cholera and stomach-ache.), Fodder, Fuel, Wild edible	RKT 25151
11.	Akoria	<i>Rhus wallichii</i> Hk. f.	Anacardiaceae	T	Wd	Fuel, Agricultural implements	RKT 24716
12.	Bhilwa	<i>Semecarpus anacrdium</i> L.f.	Anacardiaceae	T	Wd, Fr	Fuel, Wild edible	RKT 25065
13.	Brahmi	<i>Centella asiatica</i> (L.) Urban.	Apiaceae	H	Lf	Medicinal (Leaf juice is administrated orally in mental disorders, fever.)	RKT 26220
14.	Bazeer	<i>Pimpinella diversifolia</i> DC.	Apiaceae	H	Lf, Rt, Fl	Medicinal (Leaf, root and flower paste is taken with water to relieve form gastric disorder.)	RKT 27459
15.	Karounda	<i>Carissa opaca</i> Stapf ex Haines	Apocynaceae	Sh	Fr, Lf, Wd	Medicinal (Roots of <i>Raphanus sativus</i> L. and <i>Carissa opaca</i> Stapf ex Haines are taken in raw form, taken orally to cure fever and jaundice.), Fodder, Fuel, Wild edible	RKT 25490
16.	Kali Dudhi	<i>Ichnocarpus frutescens</i> (L.) Br.	Apocynaceae	Cl	Lf	Medicinal (Decoction of leafs is given in fever.), Fodder	RKT 27500

17.	Dudhi bel	<i>Vallis solanacea</i> Roth O. Kuntze	Apocynaceae	Cl	Lt, Lf	Medicinal (Milky latex is applied on cut and wounds.), Fodder	RKT 36004
18.	Vacha	<i>Acorus calamus</i> L.	Araceae	H	Lf, Fl, Rt	Medicinal (Leaves and flower decoction juice is given in cough, fever. Root powder is used to cure Worm infestation among children. Root powder is given with milk in general debility.)	RKT 26329
19.	Thakal	<i>Phoenix humilis</i> Royle	Arecaceae	T	Lf	Fodder	RKT 3487
20.	Aak	<i>Calotropis procera</i> (Aiton) R. Br.	Asclepiadaceae	Sh	Lf, Br	Medicinal (Powder of dried leafs mixed with gur given to cure headache. Bark powder is used to cure leprosy and skin diseases.)	RKT 27527
21.	Dudhi-Bel	<i>Cryptolepis buchanani</i> Roem. & Schult.	Asclepiadaceae	Cl	Br, Lf	Medicinal (Extract of bark and leaf used in cough, cold and fever.), Fodder	RKT 25160
22.	Jhirni, Kariu	<i>Asparagus racemosus</i> Willd.	Asparagaceae	Sh	Rt	Medicinal (Root pounded in water and administered orally in allergy. Root decoction is given to cure blood disease, diarrhoea, dysentery, arthritis.) Wild edible	RKT 25155
23.	Kariu, Shatavar	<i>Asparagus curillus</i> Buch.-Ham.ex Roxb.	Asparagaceae	Sh	Lf	Medicinal (Leaf decoction is given to cure diarrhoea and gastric disorder.)	RKT 24658
24.	Pati	<i>Artemisia nilagirica</i> (Cl.) Pamp.	Asteraceae	Sh	Rt, Lf	Medicinal (Fresh and washed root/leaf are dipped overnight in cold water and drunk for 5-6 days before meal to cure intestinal worm.), Fuel, Religious	RKT 24767
25.	Arka-Jhar	<i>Bidens bipinnata</i> L.	Asteraceae	H	Lf	Fodder	RKT 25663
26.	Kantela	<i>Echinops cornigerus</i> DC.	Asteraceae	H	Rt	Medicinal (Root juice is taken in urinary trouble and fever.)	RKT 26874
27.	Pushkar- mool	<i>Inula cappa</i> (Buch.-Ham. ex D.Don) DC.	Asteraceae	H	Rt, Lf, Wd	Medicinal (Decoction of root is taken orally to cure boils.), Fodder, Fuel	RKT 24729
28.	Kilmora	<i>Berberis asiatica</i> Roxb.	Berberidaceae	Sh	Rt, Lf, Br, Fr, Wd	Medicinal (Paste of root bark is applied over eyelids to cure conjunctivitis. Root powder mixed with honey is given orally to cure jaundice and diabetes.), Fodder, Fuel, Wild edible	RKT 25242
29.	Utis	<i>Alnus nepalensis</i> D. Don	Betulaceae	T	Lf, Wd	Fodder, Fuel, Agricultural implements	RKT 26362
30.	Semal	<i>Bombax ceiba</i> L.	Bombacaceae	T	Fl, Fr, Wd	Timber, Fibre, Wild edible	RKT 25408
31.	Bairala	<i>Cordia obliqua</i> Willd.	Boraginaceae	T	Fr, Wd	Fuel, Wild edible	RKT 25381
32.	Kwieyal	<i>Bauhinia purpurea</i> L.	Caesalpinaceae	T	Lf, Wd	Fodder, Fuel	RKT 39229
33.	Kandela	<i>Bauhinia retusa</i> Buch.-Ham. ex Roxb.	Caesalpinaceae	T	Lf, Wd	Fodder, Fuel	RKT 27434

34.	Malujhan	<i>Bauhinia vahlii</i> (Wt. & Arn.) Benth.	Caesalpinaceae	Cl	Lf, St, Wd	Medicinal (Stem bark is pasted and applied on skin diseases.) Fodder, Fuel	RKT 25573
35.	Kanchnar	<i>Bauhinia variegata</i> L.	Caesalpinaceae	T	Lf, Br, Wd	Medicinal (Fresh stem bark is warmed on fire and the juice extracted is given in Stomach-ache due to worms.), Fodder, Fuel, Agricultural implements, Wild edible	RKT 24056
36.	Amaltas	<i>Cassia fistula</i> L.	Caesalpinaceae	T	Fr, Lf, Wd	Medicinal (The fruit pulp is used to cure dysentery and diarrhoea. Leaf paste is applied externally cure on eczema, swelling, arthritis and skin diseases.), Fuel, Wild edible	RKT 24812
37.	Banar	<i>Cassia tora</i> L.	Caesalpinaceae	Sh	Lf, Br, Rt	Medicinal (Leaves, barks and roots are applied externally on skin diseases and leprosy. Leaves are eaten raw to expel intestinal worms.)	RKT 24638
38.	Bhang	<i>Cannabis sativa</i> L.	Cannabinaceae	H	Sd, Br, Rs	Medicinal (Oil extracted from dry seeds is applied to cure paralysis and joint pain. It is also applied to cure fever caused by severe cold.), Fibre, Wild edible	RKT 25601
39.	Kiari	<i>Capparis spinosa</i> L.	Capparidiaceae	H	Rt, Br	Medicinal (Root and bark paste is applied on arthritis and paralysis.)	RKT 15968
40.	Bheida Kukri	<i>Lonicera quiquelocularis</i> Hardw.	Caprifoliaceae	Sh	Lf, Wd	Fodder, Fuel	RKT 24952
41.	Tirmuya	<i>Viburnum continifolium</i> D.Don	Caprifoliaceae	Sh	Lf, Wd	Fodder, Fuel	RKT 24691
42.	Tirmu	<i>Viburnum coriaceum</i> Blume.	Caprifoliaceae	Sh	Lf, Wd	Fodder, Fuel	RKT 22604
43.	Tirmu	<i>Viburnum mullaha</i> Buch.-Ham ex D. Don	Caprifoliaceae	Sh	Lf, Fr, Wd	Fodder, Fuel, Wild edible	RKT 25306
44.	Badyau	<i>Stellaria media</i> (L.) Vill.	Caryophyllaceae	H	WP	Medicinal (Plant paste is externally applied on burns, wounds and boils.), Fodder, Wild edible	RKT 22823
45.	Bakla	<i>Anogeissus latifolia</i> Wall.	Combretaceae	T	St, Br, Lf, Wd	Medicinal (The decoction of stem bark is given in dysentery and diarrhoea), Fodder, Fuel, Timber	RKT 38685
46.	Saij	<i>Terminalia alata</i> Roxb.	Combretaceae	T	Lf, Wd	Fodder, Timber, Fuel	RKT 22446
47.	Bahera	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	T	Fr, Lf, Wd	Medicinal (Powdered fruits of Bahera and Harar are mixed in equal amount and taken with Ghee in cough. Dry fruit powder is given in dysentery and diarrhoea, stomach-ache.), Fodder, Fuel, Wild edible	RKT 25575

48.	Harar	<i>Terminalia chebula</i> Retz.	Combretaceae	T	Fr, Lf, Wd	Medicinal (Fruits, <i>Piper nigrum</i> L. and <i>Zingiber officinale</i> Rosc. are taken in equal quantity, powdered and given with honey in asthma. Dried fruit powder is given in cough problems. Powder boiled with cow-urine is applied on piles), Fodder, Fuel, Wild edible	RKT 20030
49.	Shankh phuli	<i>Evolvulus alsinoides</i> L.	Convolvulaceae	H	WP	Medicinal (Decoction of whole plant used for cough, cold, asthma, bronchitis.)	RKT 23435
50.	Makhol	<i>Coriaria nepalensis</i> Wall.	Coriariaceae	Sh	Lf, Wd	Fodder, Fuel	RKT 25964
51.	Khagsi	<i>Cornus macrophylla</i> Wall.	Cornaceae	T	Lf, Wd	Fodder, Fuel	RKT 15548
52.	Indrayan-Bel	<i>Trichosanthes bracteata</i> (Lam.) V oigt.	Cucurbitaceae	H	Lf	Fodder	RKT 26219
53.	Aakashibel	<i>Cuscuta reflexa</i> Roxb.	Cuscutaceae	Cl	WP	Medicinal (Paste of the plant applied to painful joints and eczema.)	RKT 26140
54.	Gethi	<i>Dioscorea bulbifera</i> L.	Dioscoreaceae	Cl	Tb, Lf	Medicinal (Tuber are roasted in hot ash and given with salt to cure old cough.)	RKT 24963
55.	Gethi	<i>Dioscorea deltoidea</i> Wall. ex Griseb.	Dioscoreaceae	Cl	Tb, Lf	Medicinal (Powder of tuber used in dysentery, fever. Dry tuber paste is applied on skin diseases), Fodder	RKT 20617
56.	Sal	<i>Shorea robusta</i> Gaertn. f.	Dipterocarpaceae	T	Rs, Lf, Wd	Medicinal (Powdered Resin of plant with cow milk is given twice a daily during chest pain and Indigestion), Fodder, Timber, Fuel	RKT 20754
57.	Gewai	<i>Elaeagnus parvifolia</i> Wall. ex Royle	Elaeagnaceae	Sh	Lf, Fr, Wd	Fodder, Fuel, Wild edible	RKT 27724
58.	Anyar	<i>Lyonia ovalifolia</i> (Wall) Drude.	Ericaceae	T	Wd	Fuel	RKT 21160
59.	Burans	<i>Rhododendron arboreum</i> Sm.	Ericaceae	T	Fl, Lf, Wd	Medicinal (Decoction of corolla mixed with 1 table spun sugar is used to cure cardio-vascular diseases. Dried flower powder is given in dysentery. Leaf paste is applied on forehead in headache.), Fuel, Religious	RKT 26108
60.	Amla	<i>Emblica officinalis</i> Gaertn.	Euphorbiaceae	T	Fr, Lf, Wd	Medicinal (Fruit juice is given to increase the flow of urine, act as diuretic, also given in diarrhoea, dysentery and to cure Jaundice.), Fodder, Fuel, Religious	RKT 21022
61.	Dudhi	<i>Euphorbia hirta</i> L.	Euphorbiaceae	H	Lt	Medicinal (Latex of plant is dropped on the root of tooth during toothache.)	RKT 26907
62.	Choti Dudhi	<i>Euphorbia thymifolia</i> L.	Euphorbiaceae	H	WP	Medicinal (Whole plant is crushed with water and taken in diarrhoea and cholera.)	RKT 24286

63.	Gobar Mau	<i>Glochidion velutinum</i> Wight.	Euphorbiaceae	T	Wd	Fuel	RKT 24610
64.	Safed Arand	<i>Jatropha curcas</i> L.	Euphorbiaceae	Sh	Lt, Sd	Medicinal (Milky latex of plant is applied on affected part to check bleeding.)	RKT 26903
65.	Kmbhal	<i>Mallotus philippinensis</i> (Lamk) Muell.-Arg.	Euphorbiaceae	T	Fr, Lf, Wd	Fodder, Fuel, Timber	RKT 26752
66.	Bhuiamla	<i>Phyllanthus urinaria</i> L.	Euphorbiaceae	H	WP	Medicinal (Whole plant powder is given to cure abdominal disorders and jaundice.)	RKT 23026
67.	Arandi	<i>Ricinus communis</i> L.	Euphorbiaceae	Sh	Lf	Medicinal (Few drops of oil mixed with milk relieves from constipation. To cure arthritis, leaves are heated over utensil and fastened around affected joints.)	RKT 24626
68.	Ratti	<i>Abrus precatorius</i> L.	Fabaceae	Sh	Rt, Sd	Medicinal (Decoction of roots used for fever and cough. Seed powder is given in diarrhoea. Seed paste is applied as plaster for bone fracture.)	RKT 24910
69.	Chun-chuni	<i>Crotalaria spectabilis</i> Roth	Fabaceae	H	Lf	Medicinal (Juice extracted is given orally to check dysentery.)	RKT 25344
70.	Sisham	<i>Dalbergia sissoo</i> Roxb.	Fabaceae	T	Lf, Fl, Wd	Medicinal (Leaves and flower extract is given in Jaundice and liver disorders. The paste of leaves is mixed with curd and given orally to treat dysentery and diarrhoea.), Fodder, Fuel, Timber, Agriculture implements	RKT 25664
71.	Chamlai	<i>Desmodium elegans</i> DC.	Fabaceae	Sh	Lf, Wd	Fodder, Fuel	RKT 24105
72.	Mandir	<i>Erythrina arborescens</i> Roxb.	Fabaceae	T	Wd	Fuel	RKT 24202
73.	Rungar	<i>Erythrina superba</i> Roxb.	Fabaceae	T	Lf, Br, Wd	Medicinal (Leaf juice is used in dysentery, ulcers, gonorrhoea, and intestinal worms. Decoction of bark is given in fever.), Fuel	RKT 3409
74.	Salprani	<i>Flemingia bracteata</i> (Roxb) ex Aiton	Fabaceae	H	Lf	Fodder	RKT 25113
75.	Sakena	<i>Indigofera gerardiana</i> Wall. ex Baker	Fabaceae	Sh	Lf, Wd	Medicinal (Leaf juice is used in diarrhoea, dysentery and cough.), Fodder, Fuel	RKT 27502
76.	Gaunji	<i>Millettia extensa</i> (Benth.)Bakers.	Fabaceae	Cl	Lf	Fodder	RKT 27022
77.	Bilaikand	<i>Pueraria tuberosa</i> (Roxb. ex Willd.) DC.	Fabaceae	Sh	Lf, Rt	Medicinal (Decoction of leaf and root is given in fever, arthritis, stomach-ache, headache and skin diseases.), Fodder, Wild edible	RKT 27737
78.	Sandan	<i>Ougeinia oojeinensis</i> (Roxb.) Hochr.	Fabaceae	T	Br, Lf, Wd	Medicinal (Bark used in diarrhoea and dysentery. Leaf paste is applied on cuts and wounds.), Fodder, Fuel, Timber, Agriculture implements	RKT 26370

79.	Tipatiya	<i>Trifolium repens</i> L.	Fabaceae	H	WP	Medicinal (Plant paste is applied as poultice on cuts and wounds.), Fodder	RKT 24589
80.	Machali	<i>Vigna vexillata</i> (L.) Rich.	Fabaceae	H	Lf, Rt, WP	Medicinal (Juice extracted from the leaves is applied on the affected places to cure skin diseases. rheumatism, ulcer, cholera, general debility.), Wild edible	RKT 27162
81.	Chesnut	<i>Castanea sativa</i> Mill.	Fagaceae	T	Fr, Wd	Wild edible, Fuel	RKT 21323
82.	Banj	<i>Quercus leucotrichophora</i> A. Camus	Fagaceae	T	Lf, Wd	Fodder, Fuel, Agricultural implements	RKT 27416
83.	Jangli Pangar	<i>Aesulus indica</i> Colebr. ex Comb.	Hippocastanaceae	T	Fr, Wd	Fuel	RKT 22221
84.	Kali Musali	<i>Curculigo orchioides</i> Gaertn.	Hypoxidaceae	H	Rh, Lf	Medicinal (Powder of rhizome used in urinary disorder, diarrhoea, jaundice, aphrodisiac tonic and piles. Paste of leaf is applied on cuts and wounds.)	RKT 25350
85.	Garmahwa	<i>Engelhardtia spicata</i> Blume.	Juglandaceae	T	Wd	Fuel	RKT 25563
86.	Akhrot	<i>Juglans regia</i> L.	Juglandaceae	T	Br, Fr, Lf, Tw, Wd	Medicinal (Bark paste is applied on itching, scrofula and bone fracture. After filtration it is used as mouthwash, very useful in toothache. Twigs are used for teeth cleaning), Timber, Fuel	RKT 26532
87.	Ratpati	<i>Ajuga parviflora</i> Benth.	Lamiaceae	H	Rt	Medicinal (Root decoction is given orally to cure headache, fever. Root infusion is given orally in stomach ache.)	RKT 26408
88.	Bursong	<i>Colebrookia oppositifolia</i> J. E. Sm.	Lamiaceae	Sh	Rt, Lf	Medicinal (Root paste mixed with cow's urine is applied over boils to squeeze out pus.), Fodder	RKT 26358
89.	Pathar Choor	<i>Coleus forskohlii</i> (Willd.) Briq.	Lamiaceae	H	Rt	Medicinal (Root juice is administered orally in constipation.)	RKT 24499
90.	Ban Tulsi	<i>Origanum vulgare</i> L.	Lamiaceae	H	WP	Medicinal (Leaf used as tea to cure cold and cough. Decoction of whole plant is given orally in urinary disorders.), Wild edible.	RKT 25103
91.	Podina	<i>Mentha arevensis</i> L.	Lamiaceae	H	Lf	Medicinal (Leaf juice is given to cure indigestion, gastric disorder, headaches, vomiting, common cold and fever.)	RKT 4353
92.	Kaula	<i>Persea gamblei</i> (King ex Hook.f.) Kosterm.	Lauraceae	T	Lf, Wd	Fodder, Fuel	RKT 4124
93.	Kalihari	<i>Gloriosa superba</i> L.	Liliaceae	H	Rt	Medicinal (Paste of root is applied externally on joints to cure rheumatoid arthritis.)	RKT 23912
94.	Ban Pyaj	<i>Urginea indica</i> (Roxb.) Kunth.	Liliaceae	H	Lf	Medicinal (Paste of leaf with mustard oil is applied over joints pains/ arthritis.)	RKT 7657

95.	Piuli	<i>Reinwardtia indica</i> Dumort.	Linaceae	H	WP	Medicinal (Poultice made through bark is plastered on fractured bones. Flower and leaf paste is applied on cuts and wounds.), Fodder	RKT 26412
96.	Kurz	<i>Woodfordia</i> <i>fruticosa</i> (L.) Kurz.	Lythraceae	Sh	Rt, Lf, Fl, Wd	Medicinal (Root paste is applied over burn scars. Infusion of flowers is given to cure urinary tract infection.), Fodder, Fuel	RKT 26377
97.	Madhu- malti	<i>Hiptage</i> <i>benghalensis</i> (L.) Kurz	Malpighiaceae	Cl	Lf	Medicinal (Leaf paste is applied on arthritis and skin diseases. Decoction of leaf is used to cure cough and asthma.)	RKT 27198
98.	Pula	<i>Kydia calycina</i> Roxb.	Malvaceae	T	Lf, Wd	Fodder, Fuel, Agricultural implements	RKT 23846
99.	Denusha	<i>Sida cordifolia</i> L.	Malvaceae	Sh	St, Br, Rt	Medicinal (Stem bark or root powder is given in general debility.)	RKT 24954
100.	Chatkura	<i>Urena lobata</i> L.	Malvaceae	Sh	WP	Medicinal (Paste of whole plant is administrated orally with milk as tonic and to cure body ache.)	RKT 24947
101.	Neem	<i>Azadirachta indica</i> A.Juss.	Meliaceae	T	Br, Lf, Sd, Tw	Medicinal (Decoction of bark and leaf is used in fever, blood purification. Paste of seed is used in arthritis and skin diseases. Twigs are used as datun for teeth's brushing.)	RKT 24117
102.	Batain	<i>Melia azedarach</i> L.	Meliaceae	T	Br, Lf, Sd, Wd	Medicinal (Bark and leaf powder is used as blood purifier. Decoction of leaf and bark is used to cure dermatitis.), Fodder, Fuel, Timber, Agriculture implements	RKT 26343
103.	Toon	<i>Toona ciliata</i> M. Roem.	Meliaceae	T	Wd	Fuel, Timber, Agricultural implements	RKT 20738
104.	Pari	<i>Cissampelos</i> <i>pareira</i> L.	Menispermaceae	Cl	Lf, Rt	Medicinal (Leaf paste is applied over eyelids to cure conjunctivitis. Root juice is given to the infants to cure diarrhoea.), Fodder	RKT 23068
105.	Ganjaroo	<i>Stephania glabra</i> (Roxb) Mierr.	Menispermaceae	Cl	Rt	Medicinal (Crushed roots are dipped in water and the filtrate is given orally to cure diabetes.)	RKT 22998
106.	Giloe	<i>Tinospora</i> <i>cordifolia</i> (Willd.) Miers	Menispermaceae	Cl	Br, Lf	Medicinal (Bark decoction is used to cure various diseases such as fever, malarial fever, arthritis, jaundice and diabetes.), Fodder	RKT 23915
107.	Khair	<i>Acacia catechu</i> (L. f.) Willd.	Mimosaceae	T	Br, Wd	Medicinal (Bark decoction is given in diarrhoea.), Timber, Fuel	RKT 20742
108.	Siris	<i>Albizzia chinensis</i> (Osbeck) Merrill in Amer.	Mimosaceae	T	Lf, Wd	Fodder, Timber, Fuel	RKT 24454
109.	Siris	<i>Albizia</i> <i>lebbeck</i> (L.) Benth.	Mimosaceae	T	Br, Lf, Wd	Medicinal (Fresh Bark decoction is used three times daily in stomach-ache and dysentery.) Fodder, Timber, Fuel	RKT 20579

110.	Vilaiti baval	<i>Leucaena leucocephala</i> (Lam.) De Wit.	Mimosaceae	T	Lf, Wd	Fodder, Fuel	RKT 25331
111.	Aal	<i>Mimosa himalayana</i> Gamble	Mimosaceae	Sh	Lf, Wd	Medicinal (Paste of leaves is applied on skin diseases.), Fuel	RKT 23010
112.	Timil	<i>Ficus auriculata</i> Lour.	Moraceae	T	Lf, Fr, Wd	Fodder, Fuel, Religious, Wild edible	RKT 7524
113.	Khunia	<i>Ficus cunia</i> Buch.-Ham. ex Roxb.	Moraceae	T	Lf, Fr, Wd	Fodder, Fuel, Wild edible	RKT 24496
114.	Totmila	<i>Ficus hispida</i> L.f.	Moraceae	T	Lf, Fr, Wd	Fodder, Fuel, Wild edible	RKT 22635
115.	Bedu	<i>Ficus palmata</i> Forsk.	Moraceae	T	Lt, Lf, Fr, Wd	Medicinal (Milky latex is applied on boils, cuts and wounds.), Fodder, Fuel, Wild edible	RKT 26372
116.	Gular	<i>Ficus racemosa</i> L.	Moraceae	T	Lf, Fr, Wd	Fodder, Fuel, Wild edible	RKT 22574
117.	Peepal	<i>Ficus religiosa</i> L.	Moraceae	T	Br	Medicinal (Bark grounded with turmeric powder is applied externally on cuts, wounds and skin diseases.), Religious	RKT 26372
118.	Shatoot	<i>Morus alba</i> L.	Moraceae	T	Fr, Lf, Wd	Fodder, Fuel, Wild edible	RKT 26345
119.	Sehjan	<i>Moringa oleifera</i> L.	Moringaceae	T	Fr, Wd	Fodder, Fuel, Wild edible	RKT 26890
120.	Kaphal	<i>Myrica esculenta</i> Buch.-Ham. ex D. Don	Myricaceae	T	Br, Fr, Lf, Wd	Medicinal (Bark paste is inhale to cure cold and headache. Bark decoction is used as mouth freshener and to cure toothache.), Fodder, Fuel, Wild edible	RKT 24288
121.	Jamun	<i>Syzygium cumini</i> (L.) Skeel.	Myrtaceae	T	Lf, Sd, Fr, Wd	Medicinal (Tender leaves are chewed to cure bleeding piles. Seed powder/decoction is given in diarrhoea, dysentery and diabetes.), Fuel, Timber, Wild edible	RKT 26041
122.	Punarnava	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	H	Rt	Medicinal (Root juice is administered orally in asthma and urinary disorder. Watery extract of the root is given orally in jaundice.)	RKT 26895
123.	Harsingar	<i>Nyctanthes arbor-tristis</i> L.	Nyctaginaceae	Sh	Lf, Wd	Medicinal (Young leaves of <i>Nyctanthes arbor-tristis</i> and <i>Zingiber officinale</i> are taken together in equal quantities, boiled with water and taken twice a day for three days to cure cold and cough.), Fuel	RKT 22283
124.	Vridhi	<i>Habenaria intermedia</i> D. Don	Orchidaceae	H	Tb	Medicinal (Tuber extract used as health tonic and also used in fever, cough, asthma and skin diseases.)	RKT 24504

125.	Jivak	<i>Malaxis acuminata</i> D. Don	Orchidaceae	H	Tb	Medicinal (Powder of tuber is used as tonic in general debility and bronchitis. Used as an ingredient of Chyawanprash.)	RKT 25177
126.	Chalmori	<i>Oxalis corniculata</i> L.	Oxalidaceae	H	Lf	Medicinal (Leaf juice is instilled in eyes to cure cataract. Juice is also instilled to cure toothache and earache in respective organs. Leaf paste is applied on cuts and wounds.), Fodder, Wild edible	RKT 26387
127.	Deodar	<i>Cedrus deodara</i> Loud.	Pinaceae	T	Wd	Medicinal (Oil extracted from wood is massaged over joints pain and itching), Fuel, Timber	RKT 26285
128.	Chir	<i>Pinus roxburghii</i> Sarg.	Pinaceae	T	Rs, Lf , Wd, Sd	Medicinal (Resin is used in boils, heel cracks, skin disease, sprain, swelling, cuts and wounds.), Fuel, Timber, Agriculture implements, Wild edible, Religious	RKT 23528
129.	Chitrak	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Sh	Rt	Medicinal (Powdered root is given with milk in body ache. Decoction of root is given in dysentery and leucoderma.)	RKT 26414
130.	Doob	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	H	WP	Medicinal (The whole parts are crushed with water. Two to three drops of this extract are poured in the nostril to cure nasal bleeding.), Fodder, Religious	RKT 26038
131.	Bhilmora	<i>Rumex hastatus</i> D. Don	Polygonaceae	H	Lf	Medicinal (Leafs paste is applied on cuts and wounds, insect sting and to check bleeding. Root extract used in jaundice.), Fodder, Wild edible	RKT 26804
132.	Jangli Palak	<i>Rumex nepalensis</i> Spr.	Polygonaceae	H	Lf	Medicinal (Leafs are chewed during Indigestion. Leaf paste is applied on cuts, wounds, insect and scorpion sting, urinary disorder, swelling and itching.), Fodder, Wild edible	RKT 24084
133.	Mamiri	<i>Thalictrum foliolosum</i> DC.	Ranunculaceae	H	Rt	Medicinal (Root paste is used to cure boils. Two to three drops of root infusion is dropped in eyes to cure conjunctivitis.)	RKT 25101
134.	Malkaghni	<i>Celastrus paniculatus</i> Willd.	Rhamnaceae	Cl	Sd, Wd	Medicinal (Oil extracted from seeds is applied on itching and arthritis.), Fuel	RKT 22150
135.	Ghounta	<i>Rhamnus triqueter</i> (Wall.) Brandis	Rhamnaceae	Sh	Lf, Wd	Fodder, Fuel	RKT 22613
136.	Chedul	<i>Rhamnus virgatus</i> Roxb.	Rhamnaceae	Sh	Lf, Wd	Fodder, Fuel	RKT 25319
137.	Ber	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	Sh	Fr, Lf, Wd	Medicinal (Fruit juice is given in diarrhoea.), Fodder, Fuel, Wild edible	RKT 25317

138.	Bhikafal	<i>Fragaria indica</i> Wall.	Rosaceae	H	Lf	Medicinal (Leaf extract used in gastric disorder, ulcer, diabetes cuts and wounds.)	RKT 24958
139.	Ghingaru	<i>Pyracantha crenulata</i> (D. Don) M. Reom.	Rosaceae	Sh	Lf, Fr, Wd	Fodder, Fuel, Wild edible	RKT 27427
140.	Jangli Mehal	<i>Pyrus pashia</i> Buch-Ham. ex D. Don	Rosaceae	T	Lf, Fr, Wd	Fodder, Fuel, Wild edible, Agricultural implements	RKT 27425
141.	Bhekal	<i>Prinsepia utilis</i> Royle.	Rosaceae	Sh	Lf, Rt	Medicinal (Root extract is taken orally as an antidote to neutralize the effect of insect and scorpion sting. Root paste after heating at low temperature in an earthen pot is applied on cuts and wounds.), Fodder	RKT 26394
142.	Padam	<i>Prunus cerasoides</i> D. Don	Rosaceae	T	Br, Lf, Wd	Medicinal (Decoction of bark is given to decrease the muscular pain and swelling.), Fodder, Fuel, Religious	RKT 26886
143.	Kunja	<i>Rosa macrophylla</i> Lindl.	Rosaceae	Sh	Lf, Wd	Fodder, Fuel	RKT 20498
144.	Hisalu	<i>Rubus ellipticus</i> Sm.	Rosaceae	Sh	Fr, Lf, Wd	Medicinal (Juice of fruits is administered orally in cholera.) Fodder, Wild edible, Fuel	RKT 24623
145.	Jangli Garhmeha I	<i>Stranvaesia nussia</i> (D. Don) Decne.	Rosaceae	T	Lf, Wd	Fodder, Fuel	RKT 10619
146.	Haldu	<i>Adina cordifolia</i> Benth. & Hook.	Rubiaceae	T	Wd	Fuel, Timber	RKT 22157
147.	Padera	<i>Leptodermis lanceolata</i> Wall.	Rubiaceae	Sh	Lf, Fl	Medicinal (Leaves and Flowers are boiled with water and filtered water is drunk to cure fever. Leaf juice is also instilled in ear to cure earache.)	RKT 25116
148.	Ghari	<i>Randia tetrasperma</i> (Wall. ex Roxb.) Benth. & Hook. f. ex Brandis	Rubiaceae	Sh	Lf, Wd	Fodder, Fuel.	RKT 24157
149.	Majethi	<i>Rubia cordifolia</i> L.	Rubiaceae	Cl	WP	Medicinal (Root decoction is used as blood purifier. Whole plant paste is applied over boils.)	RKT 26308
150.	Tirchunia	<i>Wendlandia exserta</i> (Roxb.) DC.	Rubiaceae	T	Lf, Wd	Fodder, Fuel	RKT 22147
151.	Bel	<i>Aegle marmelos</i> (L.) Corrêa	Rutaceae	T	Fr, Lf, Rt, Wd	Medicinal (Leaf extract used in fever, asthma, skin diseases and intestinal worms. Fruit juice is given in diarrhoea, cough and high blood pressure. Root powder used in diabetes.), Religious, Wild edible	RKT 26308
152.	Pisumar	<i>Boennighausenia albiflora</i> (HK) Reichb. ex Meissn.	Rutaceae	H	Lf	Medicinal (Leaf paste is applied on cuts and wounds.)	RKT 25202

153.	Karipatta	<i>Murraya koenigii</i> (L.) Spr.	Rutaceae	Sh	Lf, Br, Wd	Medicinal (Extract of leaf, bark used as health tonic. Paste of leafs with honey is useful for dysentery and diarrhoea. Branches uses as tooth brush.), Fuel, Wild edible	RKT 25169
154.	Timur	<i>Zanthoxylum armatum</i> DC.	Rutaceae	Sh	Lf, Fr, Tw, Wd	Medicinal (Leafs and fruits chewed for mouth wash, toothache, head ache and asthma. Twigs are used for teeth cleaning.), Fuel, Religious, Wild edible	RKT 26396
155.	Kanphuti	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	H	Lf, Sd	Medicinal (Juice of leafs is dropped in ear during earache. Decoction of seed is used to cure arthritis and fever.)	RKT 26758
156.	Chiura	<i>Diploknema butyracea</i> Roxb.	Sapotaceae	T	Lf, Wd	Fodder, Fuel	RKT 27414
157.	Silphora	<i>Bergenia ligulata</i> Engl.	Saxifragaceae	H	Rh	Medicinal (Decoction of rhizome is given orally to cure kidney stone. Rhizome powder is mixed with honey is used cure chronic cough and asthma.)	RKT 26215
158.	Brahmi	<i>Bacopa monnieri</i> (L.) Pennel	Scrophulariaceae	H	WP	Medicinal (Juice of whole plant is given in mental illness. 2.-3 drops are dropped in eyes to cure conjunctivitis.)	RKT 24577
159.	Akulbir	<i>Verbascum thapsus</i> L.	Scrophulariaceae	H	Fl, Lf	Medicinal (Powder of flowers mixed with mustard oil is applied on boils. Leaf juice is dropped in eyes to cure cataract.)	RKT 26450
160.	Dhatuara	<i>Datura metel</i> L.	Solanaceae	H	WP	Medicinal (Decoction of whole plant is given to cure fever. Warm leafs are tied over affected part to cure boils.)	RKT 25186
161.	Kala Dhatuara	<i>Datura stramonium</i> L.	Solanaceae	H	Fl, Sd	Medicinal (Juice of flowers is dropped in ear during earache. The paste prepared from roasted seeds of drug in mustard oil is applied locally on ring worm.)	RKT 23384
162.	Rosbhari	<i>Nicandra physaloides</i> Gaertn.	Solanaceae	H	Lf	Medicinal (Leaf paste is applied on pains, body ache and swelling.)	RKT 24045
163.	Damriya	<i>Physalis minima</i> L.	Solanaceae	H	Lf	Medicinal (Juice of leaf mixed with mustard oil is used in earache.)	RKT 25466
164.	Makoi	<i>Solanum nigrum</i> L.	Solanaceae	H	WP	Medicinal (Juice of whole plant is administered orally during intermittent fever and to cure jaundice.), Wild edible	RKT 27452
165.	Barhanta	<i>Solanum indicum</i> L.	Solanaceae	H	Fr, Rt	Medicinal (Decoction of root and fruit is given in bronchitis, cough, asthma and fever.)	RKT 24309
166.	Kantkari	<i>Solanum xanthocarpum</i> Sch. & Wendl.	Solanaceae	H	Sd	Medicinal (Fumes of Seeds are inhaled to check attacks of asthma.)	RKT 24965

167.	Asgandha	<i>Withania somnifera</i> (L.) Dunal.	Solanaceae	H	Lf, Rt	Medicinal (Decoction of the leaf is taken as remedy for intestinal worms.) The Root powder mixed with black pepper used in rheumatic swelling.)	RKT 24970
168.	Lodh	<i>Symplocos crataegoides</i> Buch.-Ham.ex D. Don	Symplocaceae	T	Wd	Fuel	RKT 24596
169.	Bhimal	<i>Grewia optiva</i> J. R. Drumm. ex Burret.	Tiliaceae	T	Lf, Br, Wd	Fodder, Fibre, Fuel	RKT 25076
170.	Kharik	<i>Celtis australis</i> L.	Ulmaceae	T	Lf, Wd	Fodder, Fuel	RKT 25371
171.	Kanju	<i>Holoptelea integrifolia</i> (Roxb.) Planch.	Ulmaceae	T	Wd	Fuel	RKT 25564
172.	Koeli	<i>Trema politoria</i> Planch.	Ulmaceae	Sh	Lf, Wd	Fodder, Fuel	RKT 25038
173.	Gheti	<i>Boehmeria rugulosa</i> Wedd.	Urticaceae	T	Br, Lf, Wd	Medicinal (Bark paste is applied over boils. Bark paste is applied over fractured bone to set it.), Fodder, Fuel	RKT 27432
174.	Tusiara	<i>Debregeasia salicifolia</i> (D. Don) Rendle	Urticaceae	Sh	Lf, Wd	Fodder, Fuel	RKT 27432
175.	Kandeli	<i>Gerardinia heterophylla</i> Decne.	Urticaceae	Sh	Lf, Wd	Medicinal (Leaf juice given in gonorrhoea.), Fibre, Fuel	RKT 22919
176.	Bichhu-ghas	<i>Urtica parviflora</i> Roxb.	Urticaceae	Sh	Lf	Medicinal (Flogging of Leaf is done during bone fracture.), Fodder, Wild edible	RKT 25808
177.	Sameo	<i>Valeriana hardwichii</i> Wall. ex Roxb.	Valerianaceae	H	WP	Medicinal (Leaf juice is given to infants to cure diarrhoea. Whole plant decoction is used to cure old fever.)	RKT 24744
178.	Sameo	<i>Valeriana wallichii</i> DC.	Valerianaceae	H	Rt	Medicinal (Root decoction is given in mental disorders. Roots also act as insecticide.)	RKT 25138
179.	Bhanti	<i>Clerodendrum viscosum</i> Ventenat.	Verbenaceae	Sh	Lf, Rt	Medicinal (Leaf juice is given in fever. Root paste is applied externally on skin diseases.)	RKT 37525
180.	Daiya	<i>Callicarpa macrophylla</i> Vahl.	Verbenaceae	Sh	Sd, Lf, Fr	Medicinal (Seeds are chewed to cure stomach-ache. Leaf paste is applied on body ache and swelling. Fruits are eaten in urinary disorders. Fruit paste mixed with yoghurt is eaten to cure mouth blisters.), Fodder, Wild edible	RKT 25188
181.	Sagon	<i>Tectona grandis</i> L. f.	Verbenaceae	T	Lf, Wd	Fodder, Fuel, Timber	RKT 24964
182.	Siwain	<i>Vitex negundo</i> L.	Verbenaceae	Sh	Lf, Wd	Medicinal (Leaf juice is instilled in nostril to cure headache. Leaf decoction is used to cure arthritis.), Fuel, Religious	RKT 25171

183.	Banafsa	<i>Viola serpens</i> Wall.	Violaceae	H	WP	Medicinal (Whole plant decoction is used to cure high blood pressure.), Wild edible	RKT 25120
184.	Kevkand	<i>Costus speciosus</i> (Koenig) J. E. Sm.	Zingiberaceae	H	Rh	Medicinal (Roasted roots are grounded and mixed with <i>Piper nigrum</i> L., made into tablets and taken orally to cure arthritis., Fried rhizome is administrated orally with gur, said to work as abortifacient. Rhizome is made into paste and eaten in anorexia due to intestinal worm.)	RKT 25180
185.	Ban Haldi	<i>Hedychium spicatum</i> Ham. ex Sm.	Zingiberaceae	H	Rh	Medicinal (Powder of rhizome is used orally in neuromuscular disorders.), Wild edible	RKT 25881
186.	Kakoli	<i>Roscoea procera</i> Wall.	Zingiberaceae	H	Rt	Medicinal (Decoction of root used in jaundice.)	RKT 25112

Abbreviation Used- H- Herb; Sh- Shrub; T- Tree; Cl- Climber; Lf- Leaf; Rt- Root; Wd- Wood; Br- Bark; WP- Whole plant; Fl- Flower; Fr- Fruit; Sd- Seed, St- Stem; Tb- Tuber; Rh- Rhizome, Lt- Latex; Rs- Resin; Tw-Twig.

Figure 2: Top ten families belonging to Ethnobotanical plant species

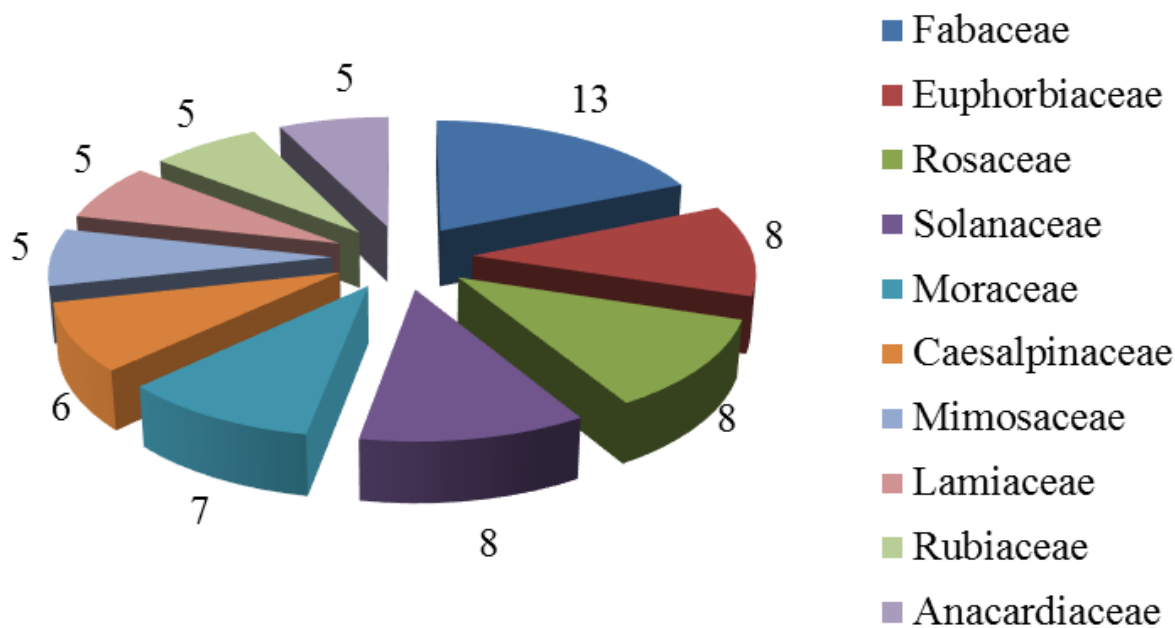


Figure 3: Habit of Ethnobotanical plant species

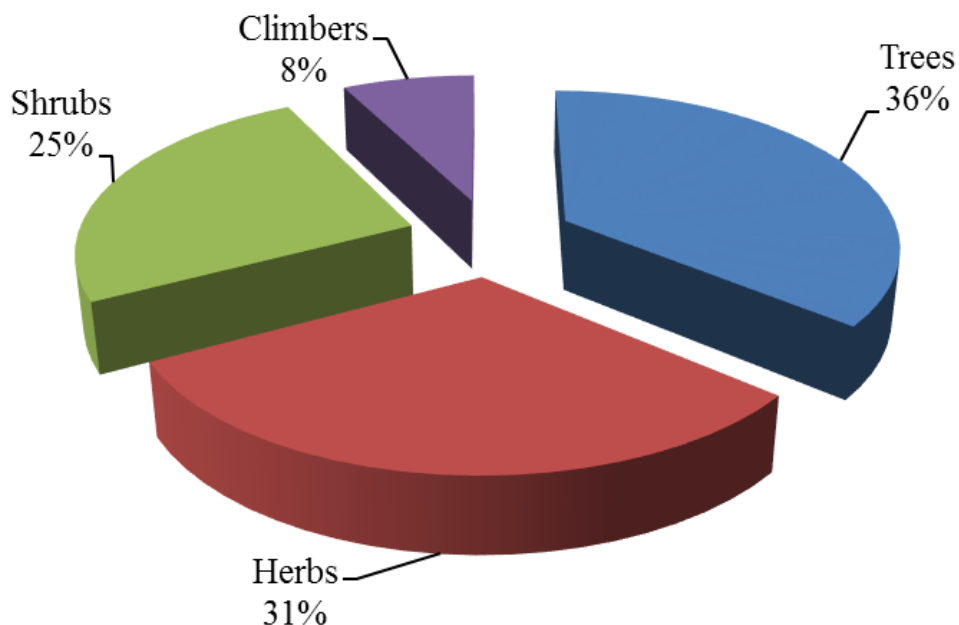
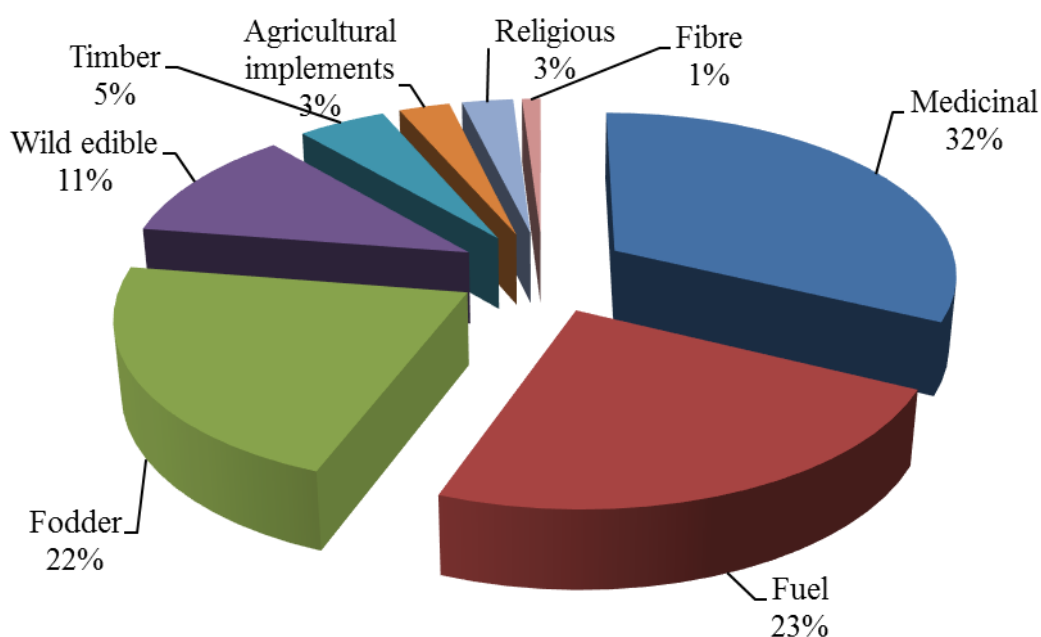
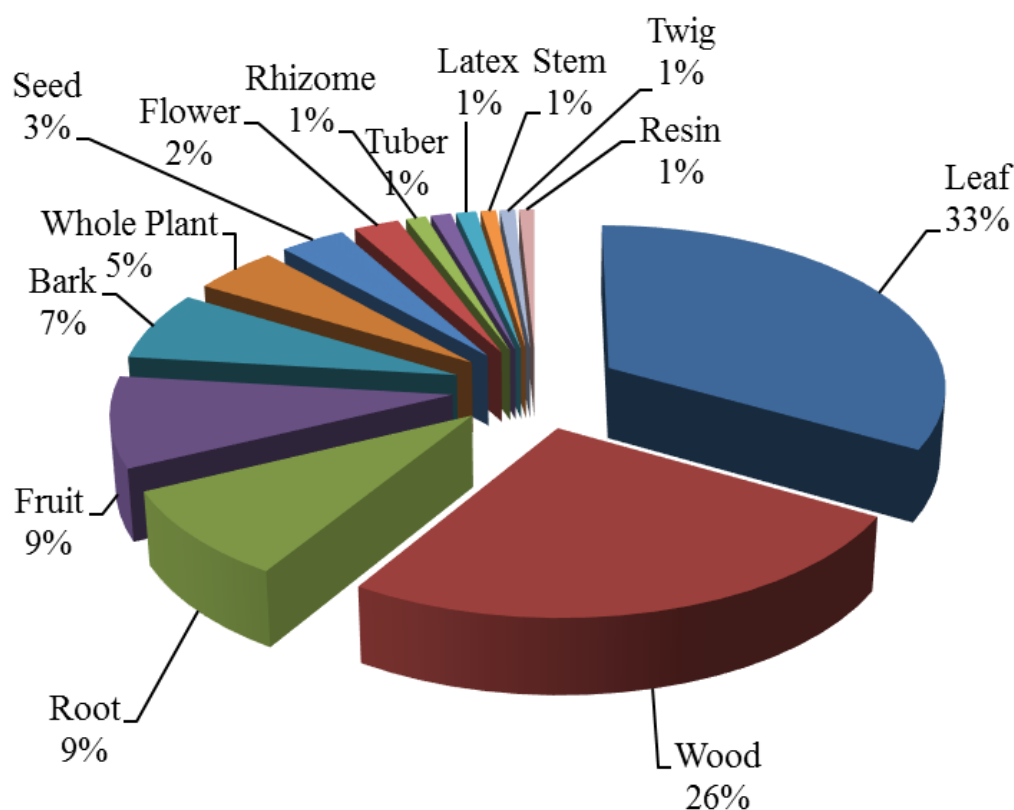


Figure 4: Ethnobotanical values of plant species



trees (36%), cover the maximum number of species and climbers (8%) covers the minimum number of species (Figure-3). The majority of plant species were used medicinal purposes (32%), followed by fuel (23%),

fodder (22%), wild edibles (11%), timber (5%), agriculture implements (3%), religious (3%) and fibre (1%) (Figure-4). In the various plant parts leaves (33%), wood (26%), root (9%), fruit (9%), bark (7%), whole plant (5%), seed (4%), flower (2%), stem, rhizomes, tuber, resin, latex, twig (1%) (Figure-5).

Figure 5: Percent distribution of plant part used

There were total 64 diseases recorded which are cured by 127 plant species. The highest numbers of medicinal plant species were documented to cure fever (25 species, 13%), diarrhea (20 species, 11%), cough (18 species, 10%), cuts and wounds (16 species, 8%), arthritis, skin diseases (14 species, 7%), asthma, jaundice (12 species, 6%), dysentery (11 species, 6%), boils (10 species, 5%), headache, stomach-ache (9 species, 5%), urinary disorder (8 species, 4%), cold, intestinal worms, swelling (7 species, 4%), body ache, diabetes (6 species, 3%), bone fracture, conjunctivitis, earache, toothache (5 species, 3%), bronchitis, cholera, gastric disorder, general debility, insect and scorpion sting, itching, piles, (4 species, 2%), bleeding, blood purifier, indigestion, joints pain, mental disorders, teeth cleaning, ulcer (3 species, 2%), burns, cataract, constipation, paralysis, scrofula, gonorrhoea, high blood pressure, eczema, leprosy, mouth wash (2 species, 1%), allergy, blood diseases, cardio-vascular diseases, cracks, dermatitis, leucoderma, liver disorders, menstrual disorders, mouth blisters, muscular pain, neuromuscular disorders, pneumonia, ring worm, sprain, syphilis, utensil, vomiting (1 species, 1%).

DISCUSSION

The geographical peculiarities make the Himalaya region a very diverse system subtending a wide range of

vegetation types. The biodiversity of this region is severely threatened by natural and anthropogenic disturbances. The local inhabitants of the study area have a long tradition of using the plant resource for their various daily basic needs such as medicine, fodder, fuel, timber, agriculture implements, wild edible, religious and other uses. Present study showed there are 186 ethnobotanical plant species are documented with the help of local healers and Vaidyas. Among these species some are recorded under various threat categories by (IUCN, 2008) viz. *Zanthoxylum armatum* DC., *Bergenia ligulata* Engl., *Malaxis acuminata* D. Don, *Costus speciosus* (Koenig) J. E. Sm., *Curculigo orchoides* Gaertn., *Gloriosa superba* Linn., *Acorus calamus* L., All the species used to treat health problems, are extracted and exploited unscientifically from the natural habitat by the local traders and healers, which causes remarkable destruction in the natural population of the flora. Habitat degradation, unscientific harvesting and over exploitation to meet the demands of illegal trade in important plants have led to the extinction of more than 150 plant species in the wild (Singh & Rawat 2011, Bhatt, 2012). The present study is step forward to document the ethno-botanical importance along with the conservation of local flora by creating the awareness among farmers and local inhabitants with their participation in cultivation of important plants at least on their barren and fallow land. Picture of some important ethnobotanical plants is given in [Photo plate: 1, 2](#).

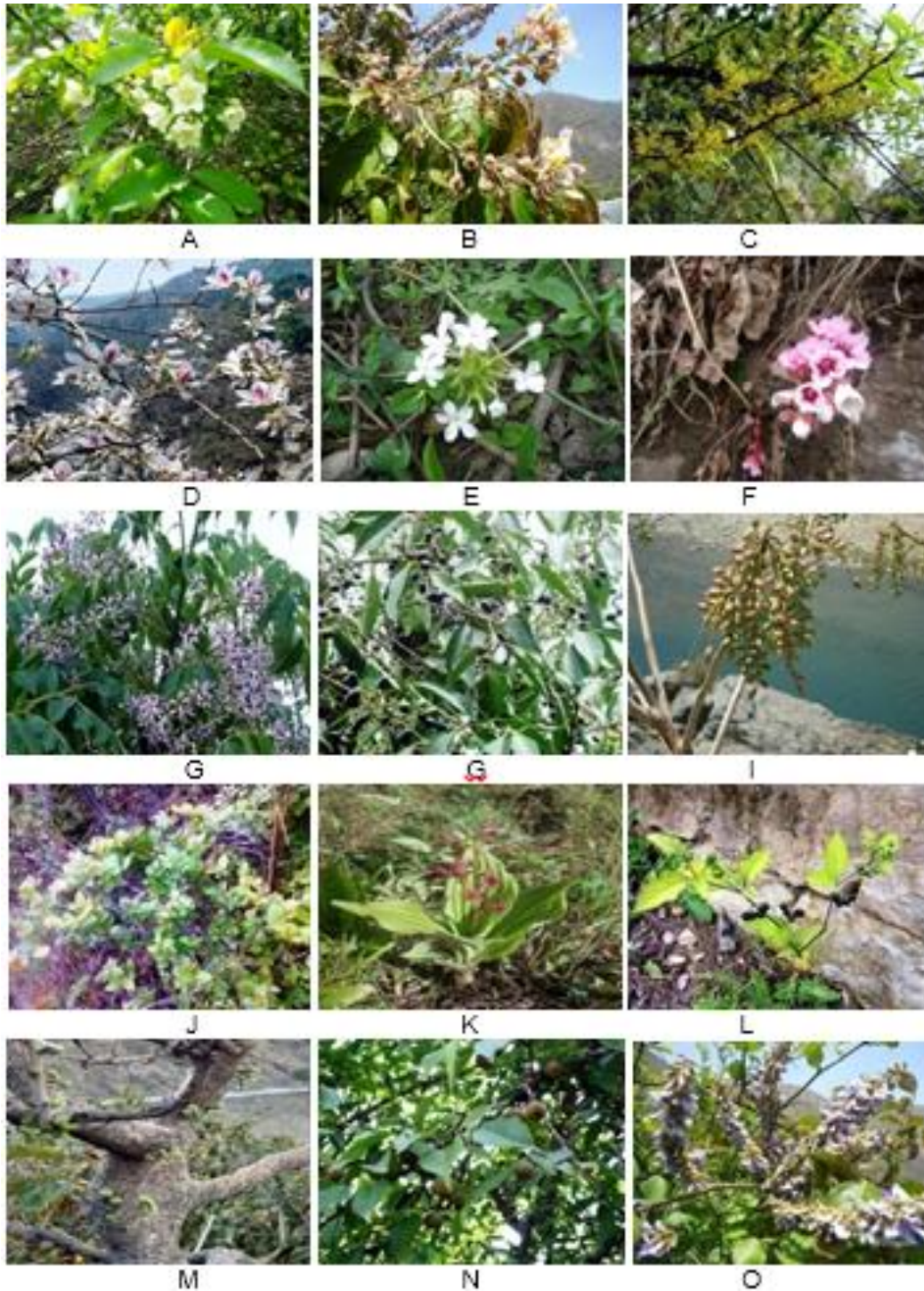
Photo Plate: 01

(A) *Cassia fistula*, (B) *Ougeinia oojeinensis*, (C) *Shorea robusta*,
 (D) *Terminalia Chebula*, (E) *Aegle marmelos*, (F) *Emblica officinalis*,
 (G) *Bombax ceiba*, (H) *Woodfordia fruticosa*, (I) *Gloriosa superba*,
 (J) *Berberis asiatica*, (K) *Rhus parviflora*, (L) *Rhododendron arboreum*
 (M) *Dalbergia sissoo*, (N) *Evolvulus alsinoides*, (O) *Mallotus philippinensis*



Photo Plate: 02

(A) *Vallisneria spiralis*, (B) *Hiptage benghalensis*, (C) *Zanthoxylum armatum*,
 (D) *Bauhinia variegata*, (E) *Plumbago zeylanica*, (F) *Bergenia ligulata*,
 (G) *Melia azedarach*, (H) *Syzygium cumini*, (I) *Lannea coromandelica*,
 (J) *Carissa opaca*, (K) *Malaxis acuminata*, (L) *Solanum nigrum*,
 (M) *Ficus auriculata*, (N) *Pyrus pashia*, (O) *Pueraria tuberosa*



CONCLUSION

Uses of ethnobotanical plants are well known by villagers to many Indian communities. At present herbal medicines are highly demandable at global level. The conservation and cultivation of natural resources is required because of heavy pressure on these resources. The study would support use of ethnobotanical plants and their conservation in the region. Therefore, the listing of these plants and their existing knowledge as a tool will be beneficial in future understanding, research and sustainable management occurring particularly in the region. Moreover conservation and cultivation of important ethnobotanical plants can help the inhabitants to earn their livelihood to some extent.

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Conflict of Interests

Authors declare that there is no conflict of interests regarding the publication of this paper.

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