SOME IMPORTANT LESSER KNOWN ETHNOMEDICINAL PLANTS IN KEDAR VALLEY OF WESTERN HIMALAYA DISTRICT RUDRAPRAYAG (UTTARAKHAND)

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Abstract: Unique assemblage of flora and fauna in Himalayan region make it one of the most biodiversity hotspot on the Indian subcontinent. This area is a storehouse of numerous medicinal plants. Garhwal Himalayan region is a rich source of medicinal plants, some of which have been explored and some are still underutilized. The present study concern with exploration of some important lesser known plants which have been traditionally used by indigenous people in Kedar valley, but they have until recently been neglected by research institutions, policy planners and food and medicine processing industries. The study deals with the some important lesser known ethnomedicinal plants used in traditional healthcare in Kedar valley of western Himalaya district Rudraprayag (Uttarakhand).

Key words: Kedar valley of Western Himalaya, Ethnomedicine, Traditional healthcare, Indigenous plants, Lesser known.

INTRODUCTION

The Himalayas have a great wealth of medicinal plants and traditional medicinal knowledge. The Central Himalayan Region covers the state of Uttarakhand, which includes the major divisions of Kumaun and Garhwal. This region has played a significant role in medicinal wealth. Garhwal Himalaya represents one of the richest zones of vegetational wealth in India. Pteridophytic flora is also interesting in its diversity and distribution.

In present study deals with important lesser known ethnomedicinal plants used in traditional healthcare in Kedar valley of western Himalaya district Rudraprayag (Uttarakhand). A total 130 plant species belonging to 94 genera and 62 families have been identified. Of these, 21 species are trees, 19 species are shrubs and 90 species are herbs. These species diversity are described for their distribution, utilisation pattern, and indigenous uses. The roots, rhizomes, bulbs, stems, tubers, leaves, barks, fruits and seeds are used for treatment of different ailments. The plants are rare (30 sp), endangered (15 sp), and vulnerable (3 sp) and common (82). As per their population structure, several anthropogenic and natural causes are analyzed for their threatened status (Bhatt, 2007). Of these plants we selected only some important lesser known ethno-medicinal plants used in traditional healthcare in Kedar valley. The study is a first attempt to explore and proper utilized of indigenous lesser known ethnomedicinal medicinal plants of the Kedar valley area.

MATERIALS AND METHODS

Description of study site: Present study carried out in Kedar valley of western Himalaya district Rudraprayag (Uttarakhand), Rudraprayag was a part of district Chamoli and Tehri in 1997, the Kedarnath Valley and parts of district Tehri & Pauri were conjoined to form Rudraprayag as new district. Rudraprayag District was established on 16th September1997. The district was carved out from the following areas of three adjoining districts i.e Whole of Augustmuni & Ukhimath block and part of Pokhri & Karnprayag block from Chamoli District, part of Jakholi and Kirtinagar block from Tehri District and part of Khirsu block from Pauri District. The presence of two separate routes for Badrinath and Kedarnath Dham from Rudraprayag render great importance to the place. The entire region is blessed with immense natural beauty, places of religious importance, lakes & glaciers. The geographical area of the District is around 2328 sq. km.

Kedar valley generally present in between the altitude of 1500-2800 masl. The climatic year consists of three distinct seasons–summer (April-June), rainy season (July-September) and winter season (October-February). Average annual rainfall is 92.8 mm. Monthly maximum temperature ranges between 24ºC-14ºC and 7.5ºC-3ºC, respectively.

Methods: The entire program of research for some important lesser known ethnomedicinal plants is based on extensive survey of research site and available literature was carried out for compilation of indigenous important lesser known ethnomedicinal plants in traditional health care system in Kedar valley. A questionary survey was made with different people of those villages of Kedar valley where local people use these medicinal plants for heath cure purpose. The observations were documented in a specially designed Performa. The socio economic status of the people was also studied. Several, elder persons, Pujari, Ojhas (physicians practicing witchcraft.) etc., and by traditional herbalists, Vaidya and Doctors of the region were also consulted and the information received was proved very helpful in the present study.

Table: Some important lesser known ethnomedicinal plants in Kedar Valley of Western Himalaya District Rudraprayag (Uttarakhand).

Sr. No.	Taxa	Vernacular name	Life form	Distributi-on (m)	Habitat	Plant part used	Uses	Status
1.	*Abies spectabilis* D.Don	Talispatra/ Himalayan silver fir	Ever-green Tree	2800-4000	Himalayan regions	Leaves, Needles	The leaves and needles are useful in treatment of antispasmodic, antiflatulaent, apperlizer, diuretic, expectorant, febrifuge, stomachic and tonic.	Endan-gered
2.	*Aconitum atrox* Brul.	Mitha bish	Herb	3000-4500	Himalayan regions	Roots	To relieve colds and cough, diuretic, diaphoretic and antiperiodic.	Endan-gered
3.	*Aconitum heterophyllu-m* Wall.	Atees	Herb	3200-5000	Higher Himalayan regions	Roots	The tuberous roots of this plant are considered tonic, astringent, stomachic and aphrodisiac. It is a valuable febrifuge and antiperiodic, and for combating debility after fevers it is an excellent tonic, and very efficacious in diarrhoea and dysentery.	Threat -ened
4.	*Aconitum ferox* Wall.	Bish	Herb	2800-3500	Temperate and sub-Alpine regions of the Himalaya	Roots	In the form of liniment it is useful in case of neuralgia and muscular rheumatism. It is a narcotic and powerful sedative.	Endan-gered
5.	*Aconitum Violaceum* Jacq. Ex stapf.	Kauri, (Mithi Patish)	Herb	3000-4200	Temperate, Alpine zones	Tuberous roots	Ingredient of aconite Used in renal pain, rheumatism and high fever.Decoction of it eaten by Hill men as pleasant tonic.	Vulne-rable
6.	*Acorus calamus* Linn.	Buch	Herb	Up to 2000	Himalayan regions	Rhizome	The rhizome is useful in treatment of bronchial asthma, indigestion diarrhoea, dysentery, abdominal obstruction and colic, hysteria, insanity. It is also said to be useful in improving intellect and memory power.	Threat -ened
7.	*Alnus nepalensis* - D.Don.	Uttis	Tree	900- 2700	Himlayan regions	Bark	A useful diuretic for reducing swelling of the leg. The juice of the bark is boiled and the gelatinous liquid applied to burns.	

8.	*Angelica glauca* Edgew.	Choru	Herb	2700-3000	Western Himalayas	Dried roots and rootstock	Roots contain lactones; Furocumarins Root is pungent, aromatic, stimulant, Diuretic, diaphoretic.	Endan-gered
9.	*Allium govanianum* Linn.	Faran	Herb	3200-3800	Himalayan regions	Leaves	The leaves are used in wounds and cuts.	Vulne-rable
10.	*Arnebia benthami* Wall.	Ratanjot	Herb	1800-3800	Himalayan regions	Roots	It has been used for cutaneous eruption, rheumatism, cystitis, gout and specifically for eczema and psoriasis.	Threat -ened
11.	*Astragalus candolleanu-s* Royal ex Benth.	Rudravanti/ milk vetch	Shrub	2000-3600	Inner dry Himalayan regions	Roots	Roots are used as blood purifier and in skin diseases; plant infusion is used as tonic.	
12.	*Bauhinia purpurea* Linn.	Guriyal	Tree	1000-2200	Himalayan regions	Stem, bark	Stem bark is credited with astringent properties and used in treatment of diarrhea and ulcer.	
13.	*Benthamidia capitata* Wall.	Bhamor	Tree	1200-2100	Himalayan regions	Bark	The bark source of tannin which used as an astringent.	
14.	*Berberis asiatica* Roxb.	Kingore	Shrub	2000-3000	Himalayan regions	Root bark	The root bark is used as a local application in affections of the eyelids as in chronic ophthalmia in which it, is painted over the eyelids occasionally combined with opium and alum. It is greatly used in cases of remittent fever.	Near Threat -ened
15.	*Berberis lycicum* Royal.	Daruhaldi	Evergree n Shrub	800-2500	North-Western Himalayas	Roots	The roots are used in spellenic troubles, tonic, febrifuge, intestinal astringent: good for cough, chest and throat troubles, eye sore, piles, and menorrhagia, useful in chronic diarrhoea.	Enden-gered
16.	*Bergenia ciliata* (How.) Sternb.	Pashan-bheda	Perenni-al Herb	2700-3000	Temperate Himalayan regions	Rhizome	Rhizome act as astringent, diuretic, tonic and also used in fever and applied to boils and ophtamia. It is an important drug for dissolving kidney and bladder stone.	
17.	*Betula utilis* Linn.	Bhojpatra	Tree	2800-4000	Moist locations in alpine	Bark and leaves	Bark and leaves are used for jaundice, burns and wounds.	Endan-gered

18.	*Bistorta macrophyta* Sojak.	Kukdi	Herb		Himalayan regions	Roots	Roots are used to treat Breathing and Heart troubles	
19.	*Bunium persicum* (Boiss.) Kuntz.	Kala jeera (Black cumin)	Herb	2000-3500	Himalayan regions	Fruits and Seeds	Essential oil contains carvone. Seeds used as spice, fruits are stimulants, carminative and used in curing fever, stomach-ache etc.	Endan-gered
20.	*Cannabis sativa* L.	Marjuana/ Indian Hemp	Annual plant	2500-3500	Himalayan regions	Mature leaves and flowering tops of the female plants	The tincture of this plants plant and hemp extract is used for pharmaceutical preparations. This tincture is a poison for the brain. Indian Hemp mixed with tobacco is used treat asthma, haemorrhages and tetanus. This is also used to treat depression, bladder inflammation, gonorrhoea and nervous disorders.	
21.	*Cleome viscosa* Linn.	Jakhiya	Herb	500-1500	Garhwal Himalaya	Leaves and seeds	The leaves are rubefacient and vesicant. The leaves are also used in external applications for wounds and ulcers. Seeds are used to treat round worm infections. The decoction of roots is administered as febrifuge.	
22.	*Codonopsis ovata* Benth.	Sardandi, Khiri	Herb	2600-3800	Himalayan regions	Roots	The milky roots are sweet in taste, eaten raw and are considered as a good physical and sexual tonic.	
23.	*Codonopsis rotundifolia* Benth.	Khirawlo	Hardy perennia l plants	3500-3800	Western Himalayas	Roots	The roots are considered as aphrodisiac and stimulant.	
24.	*Crataegus oxicantha* Linn.	Ghingaru	Shrub	3500-3800	Himalayan regions	Whole plant	Used to treat heart problems.	
25.	*Cornus capitata* Wall. ex Roxb.	Bhimor	Shrub	1000 - 3200	Himalayan regions	Bark	The bark is a source of tannin which is used as an astringent.	
26.	*Desmodium tilliaefolium* G. Don.	Chamlai	Shrub	2600-3800	Himalayan region	Roots	Used as carminative, tonic, diuretic and in bilious complaints.	
27.	*Diplazium polypodies* G.Don.	Lingra	Medium size plant	1500-2500	Tropical Himalayas	Rhizomes	Rhizome is considered useful for the patient suffering from cough, asthma, fever, dyspepsia,	

							stomachache, dysenteric and diarrhea. It is also used as insect and pest repellent.	
28.	*Dioscorea deltoidea* Wall. Ex Kunth.	Kildar, Singrimingli	Climber	800-1800	North-western Himalaya	Tubers	Diosgenin (extracted from Dioscorea) is used for synthesis of cortisone, which is useful in the treatment of rheumatic arthritis and in the preparation of sex hormones. These are also used against asthma, nephritis, skin diseased and contact dermatitis.	Vulne-rable
29.	*Elaeagnus latifolia* Linn.	Gweain	Plant	1200-3000	Temperate regions of Himalayas	Fruits	Fruits are believed to be good in cough and bronchitis.	
30.	*Ephedra geradiana* Wall.	Asmania	Shrub	2300-5300	Temperate Himalayas	Leaves	Used as alterative, diuretic, stomachic and tonic. Decoction of it is used in rheumatism.	
31.	*Eriosema Chinese* Vog.	Soh-pen	Shrub	1300-1700	Himalayan regions	Roots	It is used in preparing medicine in combination with others.	
32.	*Ervatamia coronaria* Stapf.	Tagar	Shrub	1500-2500	Temperate regions of Himalayas	Leaves	It is chewed for relieving toothache, employed as a local anodyne, after being made into a paste with water used as a vermicide.	
33.	*Ficus palmata* Forssk.	Bedu	Bush or moderate-sized tree	500-1800	Outer Himalayas	Fruit, latex.	Fruit is used for making an effective medicine for digestive disorders and possess laxative property, boil, and dysentery.	
34.	*Ficus semicordata* Buch-Ham.ex Sm.	Khaina	Tree	900-1400	Margin of forest and rocky slope	Bark, Leaves and Seeds	Bark, leave and seeds are medicinal to cure dysentery and diarrhea, respiratory complaints.	
35.	*Geranium nepalense* Sweet.	Roel	Perennial Herb	1700-3000	Himalayan regions	Whole plant	It is used for coloring medicinal oils. Contains a red coloring matter known as Roel or Bhand in the market.	
36.	*Geranium wallichianu-m* D.Don.	Ninaii, Lal jari	Perenni-al Herb	2200-3400	Himalayas region	Roots	The root paste is given in stomach disorders of infants, and this is also applied on cuts and bruises.	
37.	*Grewia oppositifolia* Roxb.	Bhemal	Tree	1200-3000	Temperate regions of Himalayas	Roots, Bark	Bark is medicinally important the extraction of bark is given to pregnant women for	

							smooth delivery and also give in constipation. Roots are used in Bone fracture.	
38..	*Hippophae rhamnoides* L.	Ames	Shrub	2200-3500	Western Himalayan	Fruit and seeds	The juicy extracts of the fruits was sued by herbal doctors to cure several diseases like skin diseases, cutaneous eruptions, breathing and digestive disorders. Seed oil is used as medicine for treating burns, gastric, skin radiations, cervical erosion and duodenal ulcer. The role or seabuckthorn on anti-oxidation, immunity system and blood circulatory system was analyzed. These studies indicated that it has potential and have proved useful for treatment of AIDS.	Near Threat -ened
39.	*Juniparus ricurva* Ham.	Padambak	Small Tree	3800-4200	Himalayan regions	Wood	Smoke of green wood – emetic.	
40.	*Jurinea macrocephal a* Benth.	Dhup	Herb	3500-4500	Alpine pastures/ slopes	Roots	Used as stimulant and in fever after the child birth. A decoction of it is given in colic. Paste of it is applied externally on eruptions.	
41.	*Lyonia ovalifolia* Wall.	Aiyaar	Tree	1200-4000	Himalayan regions	Leaves, bulb	Scabies, itching, skin disease.	
42.	*Macotonia bathpai*	Rattanjoth, Ball-jadi	Herb	3000-5000	Himalayan regions	Roots	The roots are used to treat hair fall problems.	
43.	*Melia azedarch* Linn.	Bakain	Tree	Up to 1800	Sub Himalayan regions	Bark	Its bark is used as deobstruent, resolvent and alexipharmic Antiperiodic.	
44.	*Morus serrata* Roxb.	Kimu/Hima layan mulberry	Tree	1200-2700	Inner range of Himalayas	Roots	The juice of the root is used as an anthelmintic.	
45.	*Mucuna pruriens* (Linn).D.C	Cowitch/ko nch	Climber	600-1200	Temperate Himalayan regions	Seed and stem	Seeds and roots are effective nerve tonic. These are considered aphrodisiac and diuretic. These are also used to treat kidney trouble and dropsy.	

46.	*Myrica esculenta* Buch. Ham.	Kaphal	Tree	1300-2000	Moist oak and rhododendron forest	Bark	The bark of the plant is used as an astringent carminative, antiseptic and combined with ginger as a stimulant application in cholera. Bark also contains a yellow coloring dye and rich in tannin.	
47.	*Nardostachys jatamansi* DC.	Jatamansi/ Masi	Herb	Up to 6000	Alpine Himalayas	Dried Rhizomes	Jatamansi rhizomes are beneficial against heart and mental diseases. It improves memory and prevents burning sensation. It has antispasmodic and stimulant properties. It improves urination and menstruation and aid digestion.	Endan-gered
48.	*Neolitsea cassia* Linn.	Chirad	Tree	Up to 2100	Himalayan regions	Bark	It's applied externally to bruises and eruption.	Near Threat -ened
49.	*Onosma echioides* Linn.	Gaertn	Hairy Herb	3000-4000	Himalayan regions	Roots	The roots are locally applied on wounds and cuts.	
50.	*Onosma emodi* Wall.	Baljari	Herb	3200-4100	Higher Himalayan regions	Roots	Roots are used as medicine against skin disease.	
51.	*Phyllanthus emblica* Linn.	Dhartiphalla, Aunal	Small Tree	Up to 3000	Temperate Himalayan region	Bark, flower, fruit	It is one of the best and the old medicine used in diarrhea, jaundice, and anemia. It relives pain in urine trouble and brings sensation in vegina.	
52.	*Picrorhiza kurrooa* Royle.	Kutki, Karru	Herb	3000-5000	Himalayan regions	Rhizomes	*Picrorhiza* promotes bile secretion and is effective against liver disorders, urticaria, dyscrasia, anorexia dyspepsia and fever. It is also useful in dropsy as well.	Endan-gered
53.	*Podophyllu-m hexandrum* Royal.	Van kakri	Herb	4000-5000	Himalayan regions	Rhizomes and roots	Podophyllum hexaandurm is useful in many skin diseases and timorous growth. During recent years, podophyllin has acquired considerable importance, for its potential role in controlling cancer.	Endan-gered
54.	*Prinsepia utilis* Royle.	Bhankel	Shrub	1600-2500	Himalaya region	Seed oil	The seed oil used as a medicine to treat joint pains, rheumatism and pains resulting from over-fatigue. Mild heated oil is used also for massages specifically for newborn children.	

55.	*Prunus armeniaca* Linn.	Chuli, khubani ,apricot	Tree	800-1800	North-western Himalaya	Bark, Fruits	It is useful in stomach trouble, burning sensation of the body, cold, cough, seminal weakness and in pregnancy. Bark is mainly used for tannin.	Near Threat-ened
56.	*Pyracantha crenulata* D.Don.	Ghingaru	Shrub	1500-2500	Himalayan regions	Leaves and Bark	Infusion of leaves and bark used to cure cough and cold. Bark extract is given to the patient suffering from urinal problem.	
57.	*Pueraria tuberosa* (Roxb.) ex Benth.	Bindari-kand/Indian Kutz.	Climber	1000-1500	Temperate Himalayan reigons	Tuberour root	Tuberour root is an important constituent of aprodistic prepration; vidarikand churna and vidarkandadhi quath are given for Bronchial troubles.	
58.	*Pyrus persica* (L.) Batsch.	Maehal	Tree	600-1800	Himalayan regions	Seeds, stems, fruits, leaves	Eczema, tooth disease, wound, antiseptic, scabies.	
59.	*Quercus semicarpifolia* Smith.	Brown oak. (Banj.)	Tree	800-2000	Himalayan regions	Leaves	Leaf juice use intestinal problem.It is diuretic and used to treat gonorrhea and diarrhoea.	Vulne-rable
60.	*Ribes orientala* Des.	Lebcha/ lebcha and gooseberry	Shrub	Above 2700	Alpine Himalayan region	Fruits, leaves	Leaves decoction use as diuretic. The fruit is recommended for gastric trouble, spasmodic vomiting and dysentery.	
61.	*Rheum emodi* Wall ex mas	Rhubarb/ Hind-erevand-chini	Herb	3300-5200	Himalayan region	Roots	The roots used as remedies in stomach problems, cut, wound, and muscular swelling, tonsillitis and mumps.	
62.	*Rheum palmatum* Wall.	Revand-chini	Herb	3300-5200	Himalayan region	Roots	It is used as purgative.	Endan-gered
63.	*Rheum australe* D. Don.	Archa	Herb	Above 3,000	Himalayan region	Roots	The paste of the root is taken orally with Curcuma in internal injury. The past of the root is applied around the forehead to get rib of headache.	Endan-gered
64.	*Rododendro-n arboretum* S.m.	Buras	Tree	1200-4000	Himalayan region	Root and young shoots	Flowers and bark are medicinal and used for curing digestive and reparatory disorders. The decoction of the bark is stated to be given in gonorrhea and bark also used for remedy of muscular pain.	Vulne-rable

65.	*Rosa macrophylla* Lindly.	Jangali gubal	Shrub	1200-3600	Central Himalayan	Flower	Flowers are used is applied on skin ailments.	
66.	*Rubus ellipticus* Sim.	Hinsul, Hinsar	Shrub	500-2000	Temperate Himalayan region	Roots	Root and young shoots are used in colic pain.	
67.	*Saussurea costus* (falc.)Lipsch	Kuth	Herb	2100-3900	Himalayan region	Roots	Roots are used in treatment of cough asthma. It is also used as insect repellent.	Endan-gered
68.	*Saussurea lappa* C.B.Clarke.	Kurh, kutthu	Herb	2,500-4,000	Himalayan region	Roots	The dried root of this plant is antiseptic and disinfectant. Administered in bronchitis, asthma, flatulence and certain cardiac complaints.	Endan-gered
69.	*Saussurea obvallata* Wall.	Brahama kamal	Herb	3,200-6,000	Higher Himalayan region	Bracts	The bracts of these plants are boiled in water and used as hot fomentation to cure hydrocle. The roots are often applied as a paste in cuts, bruises.	Endan-gered
70.	*Satyrium nepalense* D.Don.	Hathjadi,	Herb	2500-6000	Higher Himalayan region	Roots	Roots of these plants are used to treat malaria, diabetes pith, blood clothing and dysentery. It is considered as tonic.	
71.	*Solanum surratense* Burnt.	Kantkari	Herb	1000-2000	Himalayan region	Whole plant	The fruit is tried as garland to relieve jaundice. In swelling of any part of the body, the garland from the fruits tied to the organ to reduce the swelling. The dried root is used in cough, asthma, pain in chest and fever.	
72.	*Spondias pinnata* Linn.	Amara	Tree	600-1500	Sub-tropical forest of the Himalaya	Whole plant	The fruit is good source of vitamin “C and effective in diabetes, heart ailment, urinary troubles etc. Gum exuded complaints. The fruit juice is considered very useful for the patient suffering from dysentery.	

73.	*Swertia chirayita* Ham.	Chirayata	Herb	1500-3000	Temperate Himalaya region	Whole plant	During flowering, the whole plant is collected and dried and it is used against stomachic, febriufuge and anthelmintic. It is also used to treat diarrhea, malarial fever, weakness.	Endan-gered
74.	*Thalictrum foliolosum* D.C.	Mumira/pili jad	Herb	2500-3000	Temperate and sub-Alpine regions of the Garhwal Himalayas	Roots	The root powder is used in jaundice. It is also used as blood purifier. The roots are considered tonic and opthalmintic, purgative, febrifuge, diuretic and also use to treat chronic dyspepsia.	Endan-gered
75.	*Taxus baccata* Linn.	Thuner	Tree	3500-4500	Himalayn region	Leaves	Asthma, bronchitis, lumbago, indigestion, cancer.	Near Threat -ened
76.	*Taraxacum officinale* Weber.	Dugdhfani	Herb	700-3200	Himalayan region	Leaves, flower and roots	This is an important plant is effective against liver diseases, chronic hepatitis, visceral congestion, intermittent fever and hypochondria. Roots are used to increase urine flow, as a laxative and tonic, to treat liver and spleen ailments to stimulate appetite. Tea made by boiling flowers is used to treat heart trouble. Cooked young leaves are eaten to purify blood.	
77.	*Tinospora cordifolia* Wild.	Amritu	Woody climber	Up to 300	Tropical india	Dry Stem with bark	Stem used against dyspepsia, fevers and urinary diseases	
78.	*Uritica dioica* Linn.	Kandali, Bichoo gass	Annual plant	400-3000	Western Himalaya	Whole plant	The decoction of the plant is administered in jaundice, nephritis and menorrhagia and haematurica. The root is also diuretic.	
79.	*Valeriana hardwichii* Wall.	Muskbala	Herb	2400-2700	Himalayan region	Roots	The roots preparation is also known as tonic and stimulant. The fresh juice is administered in cases of insomnia and in certain cardiac preparations.	

80.	*Valeriana jatamansi* Jones.	Sameva	Herb	Up to 6000	Alpine Himalayas	Roots, leaves	Roots of these plants are useful in diseases of eye, blood, liver and spleen enlargement. They are also useful for clearing voice. The crushed leaves are rubbed on the forehead in extreme headache.	Endan-gered
81.	*Verbascum thapsus* Linn.	Aakalveer	Perenni-al plant	800-2500	Himalayan regions	Mature leaves, Flower and roots	The leaves are smoked for asthma and sore throat. Leaves are smoked for asthma and sore throat.	
82.	*Vitex negundo* Linn.	Sambhalu, Nirgundi, shyavali	Shrub	Up to 4000	Himalayan regions	Leaves, flowers, bark	Leaves are used against liver diseases, chronic hepatitis, visceral congestion, intermittent fever and hypochondria. Roots are used to increase urine flow, as a laxative and tonic, to treat liver and spleen ailments to stimulate appetite. Tea made by boiling flowers is used to treat heart trouble. Cooked young leaves are eaten to purify.	
83.	*Withania somnifer* Dunal.	Asgand	Shrub	Up to 5500	Himalayan regions	Whole plant	It is used as alterative, aphrodisiac, tonic, deobstruant, diuretic narcotic aborrtifacient and in rheumatism; it is also used in Homoeopathy.	
84.	*Woodfordia fruticosa* (L.) Kurz.	Dhai-ki-phool	Shrub	Up to 1500	Himalayan regions	Flowers Stem	Its crushed form is applied externally in rheumatism.	
85.	*Xanthium strumarium* Linn.	Chotagokhr u	Herb	Up to 1500	Himalayan regions	Whole plant	It is used as bitter tonic and is useful in scrofula and cancer. Its extract is applied externally on ulcers, boils and abscesses. It also exhibits hypoglycemic activity.	
86.	*Zanthoxylu-m acanthopodi-um* D.C.	Timur, Timroo	Shrub	1000-2100	Warmer valley of Himalaya	Whole plant	Timur is used in curing various common ailments such as toothache, pyorrhea, leucoderma, eye, ear trouble common cold, cough and fever, as it is believed to give warmth to body.	Sacred tree

Table is demonstrated these 86 important lesser known ethnomedicinal plants and their parts (Roots, Rhizomes, Leaves, Bark, Stem, Seeds, Flower, Fruits etc.) in traditional health care system in Kedar Valley are used for treatment of cough, cold, fever, dysentery, skindiseses, malaria, kidney, stomach and intestinal even cancer and AIDS like dangerous disease.


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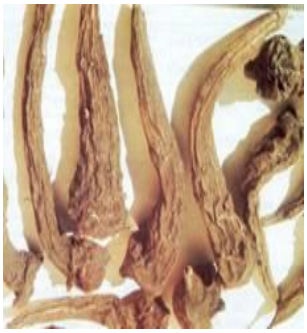
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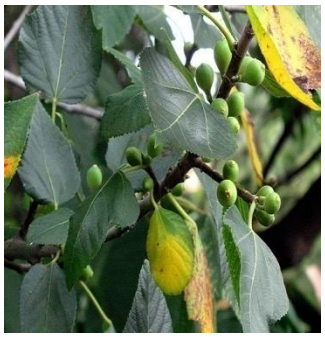
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(A) *Hippophae rhamnoides* L. (B) *Berberis asiatica* Roxb. (C) *Myrica esculenta* Buch. Ham. (D) *Aconitum Violaceum* Jacq. Ex stapf. (E) *Podophyllu-m hexandrum* Royal. (F) *Jurinea macrocephala* Benth. (G) *Aconitum atrox* Brul. (H) *Rododendro-n arboretum* S.m. (I) *Uritica dioica* Linn. (J) *Ficus palmata* Forssk. (K) *Picrorhiza kurrooa* Royle. (L) *Aconitum heterophyllu-m* Wall. (M) *Xanthium strumarium* Linn. (N) *Arnebia benthami* Wall. (O) *Bunium persicum* (Boiss.) Kuntz. (P) *Cleome viscosa* Linn.

RESULT AND DISCUSSION

The plants of Garhwal Himalayan region are well known for their medicinal properties. The vegetation of Uttarakhand can be divided in following zone according to their medicinal plants habitated (Trivedi, 1995).

1. Sub-Tropical zone of uttarakhand (mixed forest zone 250-1200m).
2. Temparte zone of uttarakhand (temperate forest zone 1700-3500m).
3. Alpin zone of uttarakhand (alpine vegetation zone above 3500m).

This area is the storehouse of numerous medicinal plants, which are exploited for utilizing in the pharmaceutical industries. The inhabitants of Garhwal Himalaya have traditionally been using many species of medicinal plants. Of these 121 plant species are used in the treatment of various disease/aliments is given in Table. These species have been distributed within different life forms i.e. Tree, Shrub/Under Shrub, Herb and climber. Various parts such as rhizome leaves, roots, stem, bark, seeds and whole plant are used for the treatment of various ailments.

As regards marketing of these medicinal items, few problems are envisaged for the local people involve themselves in this business. Fortunately, the Garhwal Himalaya occupies on of the important religious and tourist centers of the country, visited by millions of pilgrims and tourists every year. Therefore, if the use of marketing of medicinal plant products with the help pharmaceutical agencies for marketing and advertisement in proper way, they could be exploited their medicinal uses, their market demand will increase rapidly. Also, if needed, co-operatives could be started at the village level to undertake the sole marketing responsibilities of these medicinal plants.

CONCLUSION

Thus, the concept of some indigenous plants in traditional health care system in Kedar Valley of Western Himalaya District Rudraprayag (Uttarakhand). Could act as a catalyst for change in these mountainous regions-areas of the country that have hitherto been neglected or excluded from maintain healthcure, exploitation and economic development. This could help these areas support plants with economically promising potential and thus take on a completely novel and significant role in sustainable development of rural communities.

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