



Diversity, Distribution and Indigenous uses of medicinal plants in Parbati Valley of Kullu district in Himachal Pradesh, Northwestern Himalaya

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ABSTRACT: In the remote areas of the Indian Himalayan Region, the inhabitants largely depend on medicinal plants for curing diseases and income generation. But, proper documentation of the medicinal plants has been poorly attempted. The value of medicinal plants in traditional healthcare practices provides clues to latest areas of research in biodiversity conservation. Keeping this in view, the present study has been conducted to study the diversity, distribution and indigenous uses of medicinal plants of Parbati valley in Kullu district of the Himachal Pradesh. A total of 402 species of medicinal plants belonging to 98 families and 266 genera were recorded and used by the inhabitants of the area for curing various ailments. These medicinal plants comprise of 34 trees, 301 herbs, 61 shrubs, and climbers and ferns, 03 species, each. Maximum medicinal plants were reported in the altitudinal zone, 1100-1800m and decreased with increasing altitudes in the study area. Of the total medicinal plants, 207 were natives, 04 endemic and 44 near endemic. The continued over-exploitation, habitat degradation and changing environmental conditions may lead to the extinction of these species within a few years. Therefore, regular monitoring of population and habitats using standard ecological methods, development of conventional and *in-vitro* propagation protocols, establishment of species in *in-situ* and *ex-situ* conditions have been suggested.

Keywords: Parbati Valley, diversity, indigenous uses, native, endemic and utilization patterns.

INTRODUCTION

In worldwide, millions of people rely on medicinal plants for primary health care, income generation and livelihood options. The medicinal properties of plants cover a marvelous involvement in the origin and advancement of many conventional herbal therapies. The Indian Himalayan Region (IHR) comprises of five biogeographic provinces, covers approximately an area of 591 thousand kilometer square²⁷ and extends from Jammu & Kashmir in the North-West to the Arunachal Pradesh in the East. The IHR one of the mega hot spot of biological diversity²¹ is a source of great diversity of food, fuel, fodder, timber, dye and medicinal plants. It comprises about 18% of India and is more than 2,800 km long and 220 to 300 km wide, with altitudinal range from 200–8000 m¹. The IHR alone supports about 8,000 species of angiosperms, 44 species of gymnosperms, 600 species of pteridophytes, 1,737 species of bryophytes, 1,159 species of lichens and 6,900 species of fungi^{39, 34}. There are over 816 tree species, 675 edibles³¹ and 1,748 species of medicinal value with various traditional and modern therapeutic uses³⁴, 118 species of medicinal plants yielding essential oils²⁸, 279 species of fodder³⁴, 155 sacred plants³⁰ and 121 rare-endangered plants³³ found in the IHR. The over exploitation and habitat degradation have adversely affected the very existence of a number of plants of high commercial value^{14, 33}. Further, with the

increasing world demand and renewed global interest in traditional ethnopharmacy coupled with the increasing preference for natural substances in the health care system, the natural stock of medicinal plants of the IHR is under tremendous pressure^{34, 38, 26}.

A large number of studies have been carried out on medicinal plants of the IHR^{15, 16, 29, 34}. However, in Himachal Pradesh studies on medicinal plants are fragmentary and mainly focused on inventory^{4,5,6,7,8,17,18,35,41,42,36,37}. A few studies have addressed on diversity, distribution patterns and conservation prioritization of medicinal plants^{32, 33}. The Kullu district of the State is rich in medicinal plant diversity. There is plenty scope for the promotion of medicinal plant cultivation and conservation and as such an integrated study on diverse parameters of the medicinal plants has not been carried out so far.

Medicinal plants are worn in the Ayurvedic, Unani and other traditional systems of medicine and in plant based pharmaceutical industries. The Tibetan system of medicine also depends on Himalayan species³⁴. Estimates indicate that at least 90% of medicinal plant species are extracted from the wild²; and that 69% of the material is collected through destructive harvesting, which suggests that medicinal plants are significantly threatened¹³. Huge anthropogenic pressures have been identified as the main causes of decline in the population and accessibility of the medicinal plants in the Himalayan region³⁴. With the increasing demand and renewed global interest in the healthcare system, the natural stock of medicinal plants of Himachal Pradesh is under tremendous pressure³⁴. Therefore, the present study has been conducted on diversity, distribution and indigenous uses of medicinal plants of Parbati Valley in Kullu district of Himachal Pradesh, North western Himalaya.

MATERIAL AND METHODS

Study Area: The Parbati Valley (31°58'41" N- 32° 05' 51"N Latitude and 77° 14' 23" E -77°27' 08"E Longitude, 1,100-4,800m altitude) is exceptionally beautiful and just a little sinister. It is a very narrow valley with the mountains rising steeply on both sides, allowing a couple less hours of light than in erstwhile areas. The Parbati River is a main drainage of the watershed and supported by its tributaries such as Malana nallah, Tosh nallah, Garahan nallah, etc. The village *Malana* nestled between Jari and Khiksa thatches is the oldest democracy in the world. The area receives heavy snowfall during winter and rainfall in summer. The inhabitants of the area are largely relying on biodiversity for their subsistence. The soil of the Parbati valley comprises of mainly five types i.e., lateritic, red, sandy, loamy and alluvial soils, depends upon the underlying rocks and effect of various agencies from time to time. The vegetation generally comprises of temperate, sub-alpine and alpine types. Temperate and sub-alpine forests are generally dominant by broad leaved and coniferous species, and alpine meadows are conquered by alpine scrubs and herbs.

Surveys, data collection and analysis: The twelve villages namely Malana, Kasol, Rasol, Kasol, Jari, Manikaran, Barsaini, Shila, Pulga, Tulga, Kalga, Tosh and surroundings areas of the Parbati valley (1,100-4,800m) were surveyed in different seasons, i.e. winter, summer and rainy for three years (2007-2010) to assess the medicinal plant diversity and generate information on utilization of medicinal plants by the inhabitants of the area. Participatory Rural Appraisal (PRA) followed for information generation on medicinal plants. Also, local knowledgeable persons including *Vaidhyas* were interviewed and information generated on the indigenous uses and commercial values. Among the knowledgeable persons, one person was hired to collect medicinal plants from the natural habitat(s). The specimens of each species were collected and identified with the help of floras, and research papers^{3, 9, 10, 11, 19, 20, 23, 24, 40}. Nativity and endemism has been identified^{12, 34}. Information on locality, altitudinal range, life form, habitat and other morphological characters was collected for each species. The data were compiled and analyzed for diversity and distribution pattern of the species³⁴.

RESULTS AND DISCUSSION

Diversity and distribution patterns: In total, 402 species of medicinal plants belonging to 266 genera and 98 families were recorded. The taxonomic description of medicinal plants is presented in Figure 1. The families, Asteraceae (47 spp.), Lamiaceae (23 spp.), Ranunculaceae (19 spp.), Rosaceae and

Apiaceae (17 spp., each), Polygonaceae (15 spp.), Fabaceae (12 spp.), Gentianaceae (11 spp.), Scrophulariaceae (10 spp.), Boraginaceae, Brassicaceae and Orchidaceae (8 spp., each), Ericaceae and Poaceae (7 spp., each), Caryophyllaceae, Campanulaceae, Liliaceae (6 spp., each) and Amaranthaceae, Berberidaceae, Oleaceae, Plantaginaceae and Urticaceae (5 spp., each), were rich in medicinal plants. Among the genera, *Swertia* (6 spp.); *Berberis*, *Nepeta*, *Plantago* and *Polygonum* (5 spp., each); *Anaphalis*, *Chenopodium*, *Erigeron*, *Impatiens*, *Rhododendron* and *Thalictrum* (4 spp., each) and *Allium*, *Amaranthus*, *Anemone*, *Artemisia*, *Arisaema*, *Astragalus*, *Bupleurum*, *Corydalis*, *Codonopsis*, *Delphinium*, *Euphorbia*, *Geranium*, *Hypericum*, *Juniperus*, *Rheum*, *Rhamnus*, *Rumex*, *Potentilla*, *Galium*, *Pedicularis*, *Scrophularia*, *Polygonatum*, *Pleurospermum*, *Senecio*, *Saussurea*, *Trifolium*, *Viola*, *Urtica* (3 spp., each) were dominant. A total of 38 families were monotypic, represented by one species only.

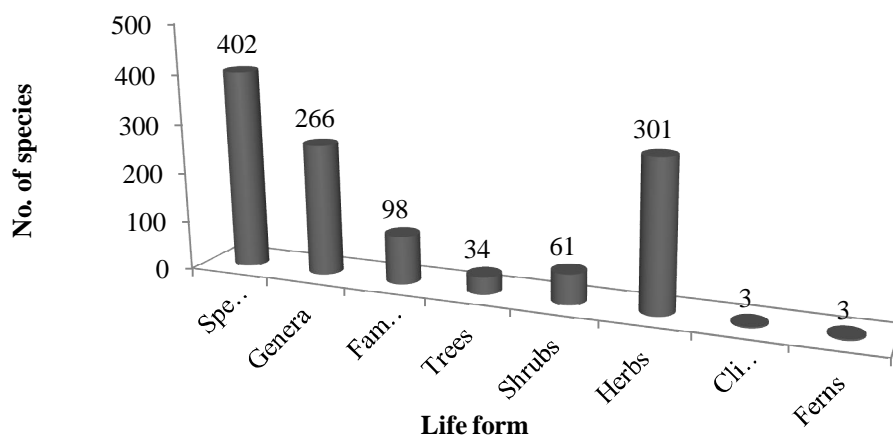


Figure 1: Taxonomic description of medicinal plants in Parbati Valley

Highest richness of medicinal plants (187 spp.) as reported in the altitudinal zone, 1100-1800m. The diversity of medicinal plants decreased with increasing altitude in the area (Figure 2). Of the total medicinal plants, 207 were natives, 04 endemic and 44 near endemic.

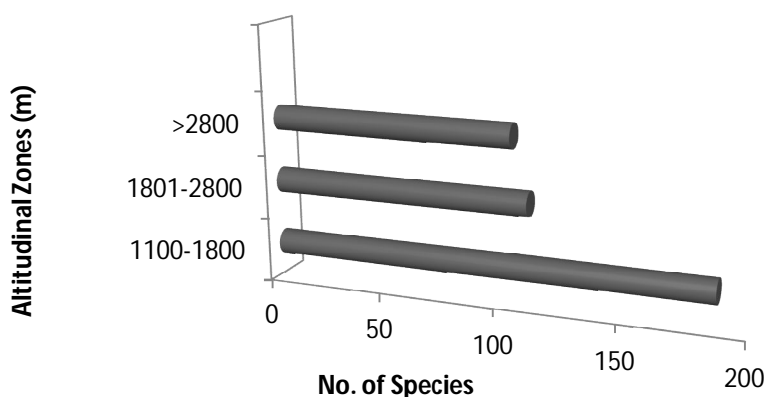


Figure 2: Altitudinal distribution of medicinal plants in Parbati Valley

Utilization pattern: Various parts namely, roots, rhizomes, tubers, leaves, flowers, whole plants, stems, fruits, seeds, aerial parts, oil, fronds, inflorescences and ashes of twigs were used for the treatments of diseases/ailments such as skin, bones, bronchitis, ears, eyes, headache, kidney, intestine, liver, lungs,

muscles, teeth, throat, etc. Maximum species were used for cold & cough (60 spp.), followed by stomachache (56 spp.), skin disease (48 spp.), piles (19 spp.), rheumatism (35 spp.), headache (31 spp.), diarrhoea (30 spp.), blood purifier (27 spp.) and asthma (19 spp.).

Among the parts used of medicinal plants, roots (107 spp.), leaves (148 spp.), flowers (38 spp.), seeds (38 spp.), stems (34 spp.), whole plants (99 spp.), bark (27 spp.), fruits (44 spp.), aerial parts (78 spp.) were mostly used by the inhabitants of Parbati valley for their own use or trade (Figure 3).

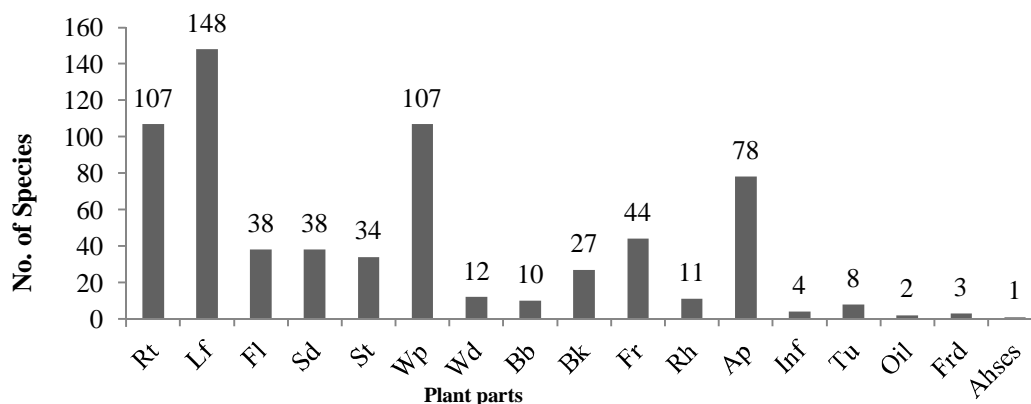


Figure 3: Use frequency (No. of species) of different parts of medicinal plants in Parbati Valley

Abbreviations used: Rt=Root; Lf= Leaf; Fl= Flower; Sd= Seed; St= Stem; Wp= Whole Plant, Wd= Wood; Bb= Bulb; Bk= Bark; Fr= Fruit; Rh= Rhizome; Ap=Aerial part; Inf=Inflorescence; Tu=Tuber; Frd=Frond; Ashes=Ashes of twig.

Indigenous Uses: Traditional/Indigenous practices of the plant resources for medicine and various other purposes are very well known among the inhabitants of the area. For example, roots of *Aconitum heterophyllum* were used in diarrhoea, digestive complaints, dysentery, fever and gastric; *Arnebia benthamii* in boils, ulcer, heart ailments, fever, headache and tonic for hair; *Podophyllum hexandrum* in cancer, cough, ulcer, hepatic diseases, fever and diarrhoea; *Angelica glauca* in dysentery, gastric, amenorrhoea, stomachache and vomiting; whole plant of *Origanum vulgare* in bronchitis, colic, diarrhoea, fever, hysteria and as tonic; *Malva verticillata* in cough, emollient pectoral complaints, piles, ulcer, and urine complaints and roots and leaves of *Saussurea heteromala* in leucoderma, fever, wounds and colic; *Rheum australe* in abdominal pain, asthma, bronchitis, eye disease, sprain and dysentery; tubers of *Dactylorhiza hatagirea* used as astringent, expectorant, tonic and in bone fracture; rhizome of *Acorus calamus* in abdominal pain, bodyache, asthma, skin diseases, cold and cough; rhizome of *Hedychium spicatum* in asthma, blood purification, bronchitis, nausea; fruits and seeds of *Zanthoxylum armatum* in cough, cholera, fever, eczema, itching, leucoderma, piles, rheumatism, tonic, tooth complaints; leaves and flower petals of *Rhododendron arboreum* in headache, fever, Dysentery, wounds and nose bleeding and leaves of *Rhododendron anthopogon* used in bronchitis, cold and cough. The remaining species are used for the treatment of various diseases/ailments (Appendix).

CONCLUSION

The IHR is well known for its diversity of Medicinal plants^{15, 22, 26, 33, 34, 35, 38}. However, studies on medicinal plants at catchment, watershed and valley specific are not available. Therefore, the present study provides comprehensive baseline information on diversity, distribution pattern, nativity, endemism, indigenous uses and part/s used of medicinal plants in Parbati valley of Himachal Pradesh, North western Himalaya.

The occurrence of 402 species of medicinal plants in the area indicates the presence of diverse habitats and large altitudinal range and favourable environmental conditions. The altitudinal range, 1100-1800m identified the richest zone for the medicinal plants. This zone is inhabited by a large number of villages and villagers utilize them for curing various diseases/ailments. Habitat degradation and over exploitation of these species may lead to their early extinction in the area. The over exploitation of medicinal plants parts such as roots, rhizomes, tubers, inflorescences, fruits, oils, seeds, etc. may lead to poor regeneration and extinction of these species in near future.

An area specific threat categorization of species is most important for short or long term management planning. Cultivation of threatened medicinal plants in the surrounding villages and other private lands may reduce the pressure on wild population. Identification of active ingredients would help identifying the potential species for marketing. Regular populations and habitats monitoring of native, endemic and threatened medicinal plants using ecological methods and notification of key areas as medicinal plants conservation areas (MPCAs) for *in situ* conservation, with the involvement of the State Forest Department and inhabitants of the area have been suggested. Besides these, mass reproduction using multiplication methods, establishment and maintenance of herbal gardens and medicinal plant nurseries for *ex situ* conservation and ensuring the availability of quality planting material for cultivation, together with education and awareness programmes for the conservation and sustainable utilization of medicinal plants are suggested.

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Appendix. Notable medicinal plants species of Parbati valley in Kullu district of Himachal Pradesh, Northwestern Himalaya

Family/Taxa	Local Name	Altitudinal range (m)	Life Form	Nativity	Part/s used	Chemical composition	Indigenous uses
Araceae							
<i>Acorus calamus</i> L.	Boj	1100-2000	H	Reg Bor Temp	Rt, Rh	Calamus oil, β -asarone, choline, calamenone, aroradin 2,4,5-tir Meo-benzaldehyde, 2,5-di Meo benzoquinone, galangin, sitosterol	Abdominal pain, asthma, bodyache, bronchitis, cold & cough, constipation, cuts, dysentery, epilepsy, headache, hysteria, indigestion, inflation, malaria, pain in neck, skin disease, snake bite, stomachache, tonic, insecticidal
Araliaceae							
<i>Aralia cachemiriana</i> Dcne.	Bailchora	2000-3300	H	Reg Himal	Lf, Rh	Sitosterol	Stomach disorders
Amaranthaceae							
<i>Amaranthus viridis</i> L.	Sariyara	1200-2300	H	Reg Trop	AP	Calcium, Phosphorus, Vitamin C, saponin, Carbohydrates, Protien fibre	Digestion, snake bite
<i>A. spinosus</i> L.	-	1200-1800	H	Reg Trop	WP	α -Spinaterol, hentriacontane	Abortifacient, antiemetic, blood purifier, cold, cough, colic, eczema, gonorrhoea, heat in body, laxative, piles, purgative, scorpion sting, snake bite
Apiaceae							
<i>Angelica glauca</i> Edgew.	Chora	2200-3800	H	Reg Himal	Rt,Sd	Lactones, d- α phellandrene, Selinene, d- α -cadinene, terpinene, nerolidol, bisabolene, germacrene	Dysentery, gastric complaints, menorrhea, stomach disorder, vomiting, bronchitis
<i>Heracleum candicans</i> Wall.	Padiyala	1800-3300	H	Reg Himal Ind Or As Trop	AP, St,Rt	-	Eczema, ring worm infection, leucoderma, menstrual disorder, piles
<i>Selinum tenuifolium</i> Wall. ex DC.	Bhutkesi	3000-4000	H	Reg Himal	WP	-	Incense, insecticidal, nervine, sedative
<i>S. vaginatum</i> (Edgew.) Cl.	Matoila	2700-3700	H	Reg Himal	Rh, AP	-	Nervine sedative, hysteria, dysmenorrheal, liquor preparation, skin disease
Asteraceae							
<i>Achillea millefolium</i> L.	Chabu, Shugumentog	3000-3600	H	Europe As Am	Fl,WP	Matricarin, diacetylmaticarin, lactones	Carminative, tonic, stimulant, toothache, cough & cold, insect repellent, aromatic, diaphoretic
<i>Artemisia absinthium</i> L.	Jaue	2000-3500	H	Europe	Lf	Cadinene, Phellandrene, pinene, Methyl chavicol, glycosides,	Dandruff, wounds, vermifuge

<i>Jurinella macrocephala</i> (Royle) Aswal ex Goel.	Dhoop	3000-4500	H	Reg Himal	Rt	quercetin, kalmptero, scopoletin	-	Antiseptic, colic, during child birth, laxative, skin eruption	
<i>Saussurea obvallata</i> (DC.) Edgew.	Kawal	3600-4500	H	Reg Himal	WP	-	-	Bruises, cuts	
<i>S. heteromalla</i> (D.Don) Hand.Maz.	Kooth	1500-3000	H	Reg Himal	Lf, Rt	-	-	Leucoderma, wounds, colic	
<i>Senecio graciliflorus</i> (L.) DC.	Zerjum	3200-4000	H	Reg Himal	WP	-	-	Antidote against insect bite, ring worm disease, pushed ear, poisonous to cattle	
<i>S. chrysanthemoides</i> DC.	-	2000-3600	H	Reg Himal	WP	Seneciophylline	-	Inflammation of mouth, sore throat	
<i>Solidago virga-aurea</i> L.	-	2500-3500	H	Reg Bor Temp	Lf	Rutin, quercitrin, vastragalin, sterols, carotnoides	-	Antiseptic, diuretic	
<i>Sonchus oleraceus</i> L.	-	1500-2000	H	Cosmop	Fl, AP, Lf, Latex	Taraxasterol, vitamin-C	-	Febrifuge, jaundice, galactagogue, liver complaints, tonic	
Anacardiaceae									
<i>Pistacia integerrima</i> Stew. ex Brandis	Kakar singhi	1100-1800	T	Reg Himal Aegypt Persia	Fr, Wd	α - pinene, camphene, d- llimonene, α - terpinol, lactonics, caprylic acid, pistacin	-	Cough, cold, antiscorpion, snake bite	
<i>Rhus javanica</i> L.	-	1200-2000	T	Reg Himal China Ins Sandvic	Fr, Wd	tannin, gallic acid, potassium, pistacin, tartaric acid, malic acid, citric acid	-	Cholera, gastric complaints, indigestion, purgative, skin disease, stomachache	
Asparagaceae									
<i>Asparagus racemosus</i> Willd.	-	1100-1600	Sh	Ind Or	Rt	Diosgenin, quercetin-3- glucuronide, quercetin, hyperoside, glycosides, rutin, cynidin-3- galactoside	-	Anodyne, aphrodisiac, infertility, decreased libido, miscarriage, menopause, leucorrhoea, sexual debility, impotence, spermatorrhea, inflammation of sexual organs, hyperacidity, stomach ulcers, dysentery, and bronchial infections, uterine tonic, galactagogue, general health tonic	
<i>A. filicinus</i> Buch.-Ham ex Roxb.	-	2000-3200	Sh	Reg Himal Burma	Fr, Rt	Aldobiouronic acid, polysaccharide, fructose, mannose	-	Antihelminthic, aphrodisiac, rheumatism, bleeding from nose, blood in urine, cough, diarrhoea, dysentery, febrifuge, gonorrhoea, headache, menstrual, gastric	
Balsaminaceae									
<i>Impatiens glandulifera</i> Royle	Mewa	2500-3600	H	Reg Himal	Fl, Sd	Oleic acid, linoleic acid, stearic acid, palmitic acid	-	Cooling, tonic, dye	
Berberidaceae									

<i>Berberis aristata</i> DC.	Kashmal	2000-2800	Sh	Ind or	Rt, Fr, Wd	Berberine, berberine, palmative and jatrorrhizine	Snake bite, boils, eye complaints
<i>B. asiatica</i> Roxb.	Kashmal	1200-2000	Sh	Ind or	WP	Berberine, palmatine	Antidote to snake bite complaints, malaria, piles
<i>B. chitria</i> Lindl.	Kashmal	2000-3000	Sh	Reg Himal	Rt, Fr, Wd	Berberine	Snake bite, boils, eye complaints
<i>B. jaeschkeana</i> L.	Kaymali	3000-3800	Sh	Reg Himal	Rt,Fr	Berberine	Eye trouble, ever, stomach disorders, skin diseases, blood purifier, astringent, diuretic, jaundice, menorrhea
<i>B. lyceum</i> Royle	-	1100-2600	Sh	Reg Himal	Rt, Fr, Lf, Wd	Berberine	Dysentery, eye complaints, malaria, stomach diseases
Betulaceae							
<i>Betula utilis</i> D. Don	Bhoj patra	3000-4000	T	Reg Himal	Br, Wd, Lf	Betulin, lupeol, Oleanolic acid, acetyloleanolic acid, betulic acid, sitosterol, lupeanone	Antiseptic, burns, cuts, contraceptive, ear complaints, hysteria, jaundice, wounds, veterinary ailments
<i>B. alnoides</i> Buch.-Ham.ex D.Don	Shoed	1500-2500	T	Reg Himal Japan	Br,Lf	-	Snake antidote
Boraginaceae							
<i>Arnebia benthamii</i> (Wall. ex G.Don.)Johnst.	-	3300-4300	H	Himal. occ	Rt	-	Cardiac, febrifuge, diseases of the tongue and throat
Chenopodiaceae							
<i>Chenopodium botrys</i> L.	Sokana	1500-2500	H	Reg Bor	Lf, Fl	Chyrosoriol, quercetin, flavinoids, hispidiulim, salvisgenin	Gastric disorder, headache due to gall bladder, liver disease, anthelmintic, diuretic, laxative
<i>C. album</i> L.	Bathua	1100-2500	H	Reg Temp et Trop	Lf, Br	Protein, fats, fibre, Carbohydrates, Calcium, Vitamin C, Niacin, Choline	Indigestion, Constipation
<i>C. ambrosioides</i> L.	Bithu	1100-1800	H	Ind Or	Lf	Tetradecaene, caproic, Caprylic acid	Anthelmintic, influenza, pneumonia, typhoid, vermifuge
Cannabaceae							
<i>Cannabis sativa</i> L.	Bhang	1100-2500	H	As Centr Himal Bor Occ	Sd, Br, St	Cannabidiol, tetrahydrocannabinol, cannabinoids	Anthelmintic, appetite, bowel complaints, bronchitis, cuts, dyspepsia, ear, eye complaints, gonorrhoea, narcotic, piles, skin disorder, cold, cough, convulsions, cramps, epilepsy, laxative, nervine stimulant, paralysis of tongue, sleeping pills, tetanus
Crassulaceae							

<i>Kalanchoe spathulata</i> DC.	-	1400-2200	H	As Trop	WP	-	Cholera, wounds
<i>Rosularia rosulata</i> (Edgew.) H. Ohba	-	1400-2500	H	Reg Himal	WP	-	For milk Production, skin disease
Cucurbitaceae							
<i>Melothria heterophylla</i> (Lour.) Cong.	Bankakri	1200-2000	H	As Trop	Rt, Lf, Fr	-	Antifertility, cuts, diabetes, stomachache
<i>Trichosanthes tricuspidata</i> Lour.		1500-2200	Cl	Ind China, As Trop	Rt, Fr	-	Constipation, migraine, carbuncle, otitis, rhinitis, inflammations, asthma, epilepsy and skin diseases
Cuscutaceae							
<i>Cuscuta reflexa</i> L.	Akash bel	1100-2500	H	Ind Or	WP	-	Bodyache, burns, cuts, nervine weakness, swell of legs, body parts, veterinary, kills lice swellings of testicles, headache, wart
Cyperaceae							
<i>Carex obscura</i> Nees	-	2000-3200	H	Reg Himal	AP	Proteins, carbohydrates, minerals, calcium	Insect bite
<i>C. nubigena</i> D. Don	Krash	3000-3700	H	Ind Or	AP, Rt	-	Insect bite
Dioscoreaceae							
<i>Dioscorea deltoidea</i> Wall.	Shingli mingli	1100-2600	Cl	Ind Or	Tu	Diosgenin, sapogenin	oral contraceptive pills
Ericaceae							
<i>Cassiope fastigiata</i> (Wall.) D. Don	Salu	3300-4000	Sh	Reg Himal	WP	-	Itching
<i>Rhododendron lepidotum</i> Wall.	-	2800-3800	Sh	Reg Himal	Lf	-	Bronchitis, cold, cough
<i>R. campanulatum</i> D. Don	Shargal	3000-4000	Sh	Reg Himal	Rt, Lf, Fl	-	Boils, cold, cough, headache, rheumatism, sciatica, skin disease, syphilis, tonic,
<i>R. arboreum</i> Sm.	Brass	1500-2700	T	Ind Or Reg Himal Zeylan	Fl, Lf	Ericolin, urosolic acid, friedelin	Dysentery, headache, rheumatism, wounds
<i>R. anthopogon</i> D. Don.	Tarjhipaan	3000-4000	Sh	As Bor Reg Himal	Lf	-	Aromatic, bronchitis, cold, cough, gonorrhoea, stomach ailment, tea preparation, reduce birth pains, delivery
Elaeagnaceae							
<i>Elaeagnus conferta</i> Roxb.	-	1500-2800	Sh	Japon	Fr, AP, Lf, Sd	-	Cough, bronchitis, febrifuge, expectorant
<i>Hippophae salicifolia</i> D. Don	-	2200-3500	T	Nepal	Fr, Br	-	Cuts, ulcer, wounds, cough, dandruff of hairs and skin disease
Euphorbiaceae							
<i>Euphorbia hirta</i> Lam.	Dudhi	1100-2200	H	Amphig Trop	WP	-	Abscess, antidote in snake bite, bronchitis infection, burns, colic, cough, cuts, diarrhoea, dysentery, eczema, excess lactation, eye

									complains, pain, ring worm, scabies, scorpion bite, toothache, vomiting
<i>Ricinus communis</i> L.	Arandi	1200-1800	H	Europe As Bor	Sd		Protein, globulin, phosphatidyl ethanol amine, uric acid, ricin, albumin, oleic acid, ricinoleic acid		Asthma, blood purifier, cough, chronic bronchitis, headache, hepatic disease, pneumonia, rheumatism, snuff
Fabaceae									
<i>Astragalus chlorostachys</i> Royle ex Benth.	-	2000-3500	H	Reg Himal	AP	-			Tonic, febrifuge, tuberculosis
<i>Cicer microphyllum</i> Benth.	-	3300-3800	H	Soongar Himal Bor Occ	Reg Fr,Lf,Sd,AP	-			Sore & mouth disease treatment in cattle, tongue infection, jaundice
<i>Indigofera heterantha</i> Wall. ex Brand.	-	2000-2800	Sh	Reg Himal	Lf,St,Br	-			Diarrhoea, dysentery, cough, wound
<i>Lotus corniculatus</i> L.	-	2000-3700	H	Europe	AP		α - carotene, β - carotene, xanthophylls, violaxanthin, protein, carbohydrates, fat, fibre		Anti-inflammatory
<i>Trifolium repens</i> L.	-	1100-3000	H	Europe Temp	As AP		Daidzein, daphnoretin, formonoretin, genistein, quercetin		Cough, bronchitis, venereal disease
<i>T. pratense</i> L.	-	2000-3500	H	Geront Temp	Bor AP		Trifolin, trifolihizin, coumaric acid, myricyl alcohol		Astringent, bronchitis, cough
Fagaceae									
<i>Quercus leucotrichophora</i> A.Camus	Ban	1400-2200	T	Reg Himal	Sd, Fr	-			Astringent and diuretic, gonorrhoea, indigestion, diarrhoea and asthma, haemorrhages, chronic diarrhoea, dysentery
Fumariaceae									
<i>Corydalis meifolia</i> Wall.	Tongzil	3500-4000	H	Reg Himal	WP	-			Headache, liver and rheumatoid problems, leprosy, stomach pain
<i>C. govaniiana</i> Wall.	Bhutkeshi	3300-4000	H	Reg Himal	WP		Protoine, choline, corlumine, biculline, & isocorydine		Antipyretic, diuretic, eye disease, gastric disease, liver, muscle pain, skin disease, syphilis, tonic, leprosy, rheumatism
Gentianaceae									
<i>Gentiana argentea</i> (D.Don) Griseb.	Pungen karmo	3000-3800	H	Reg Himal	China Lf,Fl	-			Sore throat
<i>Gentianella moorcroftiana</i> (Wall.ex G.Don) Airy Shaw	-	3400-3700	H	Reg Himal	AP	-			Febrifuge, blood purifier, cough, rheumatism, gastric

<i>Jaeschkea oligosperma</i> (Griseb.) Knobl.	-	3500-4000	H	Reg Himal	WP,AP	-	Febrifuge, blood purifier
Hippocastanaceae							
<i>Aesculus indica</i> Colebr.	Khanor	1600-2800	T	Reg Himal	Lf, St	-	Anthelmintic, dislocated joints, diuretic, leucorrhoea, skin fissures, cracks, veterinary medicine, wounds
Hypericaceae							
<i>Hypericum uralum</i> Buch.	Tumbhul	1100-2000	Sh	Reg Himal	Rt, Lf	-	Pimples, ringworm, urine complaints, sores
<i>H. perforatum</i> L.	Basant	1100-2200	H	Europe Pratis	WP	Tanins, hypericin, reciting, alkaloids	Cuts, imunity, malarial, antidepressant, antitumourous, anticancerous, antiviral
<i>H. oblongifolium</i> Choisy	Peol	1400-3000	Sh	Reg Himal	Rt, Fr	-	Boils, wounds
Iridaceae							
<i>Iris kumaonensis</i> D.Don	Lathum	2500-4000	H	Reg Himal	Rt, Lf	-	Pimples, ringworm, , urine complaints sores
Juglandaceae							
<i>Juglans regia</i> L.	Akhrot	1100-2500	T	As Occ Reg Himal	Br, Lf, Fr	Palmtic acids, potassium, calcium, phosphorus, chlorine, oleic acid	Frost bite, rheumatism, sores of toes, toothache
Lamiaceae							
<i>Ajuga bracteosa</i> Wall. ex Benth.	Neelkanthi	1100-2800	H	Afr Trop Ind Or As Or	Lf,WP	Ceryl alcohol, palmtic acid	Malarial, tonic, astringent, febrifuge
<i>A. parviflora</i> Benth.	Nilkanthi	1200-2600	H	Reg Himal	Lf, Sd	-	Ascariasis, blood purifier
<i>Elsholtzia flava</i> Benth.	-	2000-2800	Sh	Reg Himal	Fl	-	Skin disease, diarrhoea, stomachache
<i>E. fruticosa</i> D. Don	-	2000-2800	Sh	China	Lf, Fr, Sd	-	Relieve sciatica
<i>Origanum vulgare</i> L.	Ban tulsi	1200-3600	H	Europe As et Afr Bor	Lf,AP	-	Antiseptic, bronchitis, colic, diarrhoea, bath to ladies after child birth
<i>Mentha longifolia</i> L.	Jangli Pudina	1100-3500	H	Reg Bor Temp	WP	Piperitenone oxide, diosphenol, piperitenone	Antiseptic, carminative, digestive, on wound to kill maggots
<i>M. piperata</i> L.	Podina	1100-1600	H	Ind Or	WP	Acetic acid, isovaleric acid, acetaldehyde, lactone, pipertione, isomenthone, methone	Reduce excessive bile secretion, antiseptic, carminative, digestive
<i>Nepeta eriostachya</i> Benth.	-	3000-3900	H	Reg Himal	WP	-	Eyes, diuretic
<i>N. discolor</i> Royle ex Benth.	-	2700-3800	H	Reg Himal	WP	-	Eyes injury & infection, cold, cough
<i>Roylea cinerea</i> D.Don	Kadu	1100-1800	Sh	Reg Himal	Lf	-	Blood purifier, pimples, snuff in tonsils
<i>Prunella vulgaris</i> L.	Syangave	1500-3500	H	Reg Temp	WP	-	Breathing problem, cerebral complaints, cold, gastric complaints, headache, liver complaints

<i>Salvia moorcroftiana</i> Wall.	-	1500-2700	H	Reg Himal	Rt	-	Astringent, emetic, poultice
<i>S. lanata</i> Roxb.	Thooth	1500-2500	H	Reg Himal	Rt, Lf, Fl	-	Adulterant, colic, diarrhoea, cold, cough
<i>Stachys melissaefolia</i> Benth.	-	2000-3200	H	Reg Himal	Fl	-	Bee forage
<i>Thymus linearis</i> Benth.	Ban jawain	1800-3600	Sh	Pakistan	WP	-	Antifungal, antibacterial, pain reliever during childbirth to mother, whooping cough, epilepsy, skin eruption, reduce excessive bile secretion, juice, alopecia or hair loss, spices phlegm counter spasmodic pains, stomach complaint, cold, toothache, kill hookworms, liver compliant, heating effect
Liliaceae							
<i>Nomocharis oxypetalum</i> (Royle) E. H. Wils.	Sheerkakoli	3000-3400	H	Reg Himal	Bb	-	Asthma, antirheumatic, febrifuge, galactogogue, tuberculosis, haemostatic, ophthalmic, oxytocic
<i>Polygonatum verticillatum</i> L.	Salam misari	1500-3500	H	Europe As Bor	Rh, Tu	-	Appetite, nervine tonic, kidney trouble, wounds
<i>P. multiflorum</i> L.	-	3200-3800	H	Europe As Bor Afghan	Tu, AP	Glucoside, cholidonic acid	Tonic, urino-genital disorders
<i>P. cirrhifolium</i> Wall.	Salaam misari	1500-3500	H	Reg Himal As Bor	Tu, Rt, Lf	-	Aphrodisiac, appetite, blood purifier, nervine tonic, tonic
<i>Paris polyphylla</i> Sm.	Satwa, Kakoli	1700-2600	H	Reg Himal China	Tu	-	Diarrhoea, Febrifuge, analgesic, antiphlogistic, antispasmodic, antitussive, depurative, narcotic, snake bite, ulcer, antibacterial
Linaceae							
<i>Reinwardtia indica</i> Dum.	Piyan	1200-1600	H	Ind Or	AP	Pristimerin, alkloids	Tongue cleaning
Malvaceae							
<i>Malva verticillata</i> L.	Chiroti	1800-2800	H	Europ As et Afr Bor	WP	Malvalic acid	Cough, emollient pectoral complaints, piles, ulcer, urine complaints
<i>Sida cordata</i> Burm.	Pharendbuti	1100-1400	Sh	Amer Trop	WP	-	Asthma, boils, urine complaints, piles, bone fracture, cuts, wounds, debility, tonic, gonorrhoea, dysentery
Meliaceae							
<i>Toona ciliata</i> Roem.	Daral	1100-1300	T	Malaya Austr	Br, Fr, Lf	-	Antiseptic, dysentery, bronchitis, gastric trouble
<i>T. serrata</i> (Royle) M. Roem.	Daral	1100-2600	T		St, Br	-	Antiseptic, dysentery, bronchitis, gastric trouble
Moraceae							
<i>Ficus palmata</i> Forssk.	Fegra	1100-1800	T	Afr Trop Arab Ind Or	Fr, Lf	-	Dysentery, indigestion, laxative
Orchidaceae							

<i>Calanthe tricarinata</i> Lindl.	-	2000-3300	H	Reg Himal	Lf, Bb	-	Sores, eczema, aphrodisiac
<i>Dactylorhiza hatagirea</i> D.Don	Panja	3000-4000	H	Europe Afr Bor Oriens Reg Himal	Tu	-	Antibiotic, wound healing, bone fracture, cough, cold, cuts, sexual disability, rheumatism, blood purifier, tonic, many ayurvedic and unani medicine preparation, expectorant
<i>Epipactis heleborine</i> (L.) Crantz	-	3200-3600	H	Reg Himal	Lf, Rh	-	Blood purification, aphrodisiac
<i>Habenaria edgeworthii</i> Hk.f. ex Collett	-	2200-3300	H	Ind	Tu	-	Blood purifier, rejuvenator
<i>Herminium lanceum</i> Thunb. ex Sw.	-	1800-3200	H	Java	AP	-	Urinary problems
<i>Malaxis muscifera</i> (Lindl.) Ktze.	-	3200-3800	H	Europe	Rt	-	General tonic
<i>Satyrium nepalense</i> D.Don	-	1400-2500	H	Ind Or	Rh	-	Energy Tonic
Oleaceae							
<i>Fraxinus micrantha</i> L.	Angu	1500-2500	T	N Mexic	St,Lf,Br	-	Dysentery
<i>Jasminum humile</i> L..	Sungli	1500-3000	Sh	As Trop	Br,Rt,Fl	-	Sinus, skin disorder, blood, heart disease
<i>J. officinale</i> L.	Juhi	1800-2500	Sh	Ind Bor Occ China	Fl, Lf, Rt	Benzyle aldehyde, cresol, nerol, benzoic acid,	Ringworm
<i>Olea ferruginea</i> Royle	Kahu	1100-1500	T	Ind Or	Rt	-	Diarrhoea, aphrodisiac
<i>Syringa emodii</i> Wall. ex Royle	-	3600-4000	Sh	Reg Himal	Sd, Fl, Lf	-	Stomach disorder
Oxalidaceae							
<i>Oxalis corniculata</i> L.	Malori	1100-2800	H	Amphig Temp et Trop	WP	-	Appetite, cooling, diarrhoea, digestive, dysentery, scurvy, skin disease, stomachache, swelling, wart
Podophyllaceae							
<i>Podophyllum haxandrum</i> Royle	Ban kakri	2500-4200	H	Ind Or As Trop	WP	Podophyllin, podophyllotoxin and podophyllol resin, salicylic acid, jasmine	Cough, purgative, chronic, constipation, tuberculosis, hepatic, stimulant, vermifuge, kill worms, gynecological disorder, skin disease as warts, tumors, cancer, childbirth, cuts, wounds, diarrhea, gastric ulcer, hepatic disease
Poaceae							
<i>Avena fatua</i> L.	Kasam, Gwajung	3500-4000	H	Europe Oriens As Bor	AP	Glycofavones, apigenin, apigenin	Wounds
Polygonaceae							
<i>Polygonum amplexicaule</i> D. Don	-	1500-3500	H	Reg Himal	Rt,Lf	Tanins, non-tanins	Cough, dysentery, haemostasis, tonic, excess dose cause abortion,wounds, heart buring sensation

<i>P. hydropiper</i> L.	-	1200-2200	H	Reg Temp Bor et Austr	Lf	Quercetin, quercitrin, rutin, hyperoside, persicarin	Tongue infection in cattle
<i>P. plebium</i> R.Br.	-	1200-2600	H	Geront Trop et Temp	AP, Rt	Oxymethylantraquinone	Baldness, lung disease, diarrhoea, dysentery
<i>P. polystachyum</i> Wall. ex Meissn.	-	3000-3500	H	Ind Or (Indian Subcontinent, As Trop)	AP	Rhamnacin, quercetin, isoquercitrin	Acidity, indigestion
<i>P. recumbens</i> Royle ex Bab.	-	1800-2800	H	Reg Himal	AP		Skin disease, blood purifier, carbuncle, healing
<i>Rumex nepalensis</i> Spreng.	Malora,	2000-3600	H	As Occ Ind Or Malaya Afr Austr	Lf, Rt, Tw	Nepodin, chrysophanic acid	Boils, colic, cooling, diuretic, dymenorhoea, purgative, scurvey, swelling of muscle, stomachache
<i>R. hastatus</i> D.Don	Bilmora	1100-2000	H	Reg Himal	Lf	Tanin	Cuts, wounds, anti nettle sting
<i>R. acetosa</i> L.	Chukil	3000-3600	H	Europe As Bor	Lf, AP,Fr	Rutin, hyperin, tannins, hyperin, quercitin	Appetizer, laxative, stomach disease
<i>Rheum australe</i> Don.	Dolu ,chuche	2500-3800	H	Austr	St, Lf, AP	Rutin, heterodianthrones, sennidinc, rich in Vitamine B and C	Abdominal pain, appetite, asthma, bronchitis, cuts, dysentery, laxative, eye disorder, sprain, swelling, ulcer, wounds
<i>R. webbianum</i> Royle	Pambahac	3200-4200	H	Reg Himal	Rt,Lf	-	Abdominal disorder, boils, astringent, purgative, wounds
Plantaginaceae							
<i>Plantago depressa</i> Willd.	Thram	2800-3300	H	Sibir	WP	-	Cure dysentery, wounds, piles, infant health
<i>P. ovata</i> Forsk	Jangli isbagol	1100-2000	H	Reg Himal	Sd, Lf	Xylose, rhamnose, galactose, galacturonic acid, uronic acid, tanins	Diuretic, antiinflammation, dysentery, diahroea, constipation
Papaveraceae							
<i>Meconopsis aculeata</i> Royle	Blue popy	3000-3600	H	Reg Himal	WP	-	Backache, colic, renal pain tonic
Primulaceae							
<i>Androsace rotundifolia</i> Hardw.	Zigsolo marpo	2700-3400	H	Reg Himal	AP	-	Stomachache
<i>Primula denticulata</i> Sm.	-	3000-3800	H	China Reg Himal	AP, Fl, Rt	-	Diabetes, headache, appetizer, liver problem, giddiness, pulmonary disease, urinary ailments, kill lice
Punicaceae							
<i>Punica granatum</i> L.	Anaar	1100-1800	T	Europ Maurit	Austr Rt, St, Fr, Lf	-	Antihelminthic, checks bleeding of child birth and miscarriage, cholera, cooling, dysentery, eye problems, pimples, stomachache
Phytolacaceae							
<i>Phytolacca acinosa</i> Roxb.	Jharka	2200-3000	H	Reg Himal	Lf,Rt	-	Stomach cramps, dysentery, wounds, cattle pneumonia, local beverages

Rosaceae							
<i>Agrimonia pilosa</i> Ledlb.	Kuri	1500-2800	H	Reg Bor Temp	Ap, Rt	-	Cough, diarrhoea, urinary problems
<i>Cotoneaster microphyllus</i> Wall. ex Lindl.	-	2000-3200	Sh	Reg Himal	Fr,Lf,Rt	-	Astringent, diarrhoea, cuts, wounds
<i>Fragaria nubicola</i> Lindl. ex Lacaita	Bumbra	2000-4000	H	Europe California	Fr	-	Earache
<i>Prinsepia utilis</i> Royle	Bhekal	1500-2500	Sh	Reg Himal	Sd	Myristic acid, palmtic acid, stearic acid, lignoceric acid, oleic acid	Burns, cuts, rheumatic
<i>Potentilla argyrophylla</i> Wall. ex Lehm.	-	3200-4000	H	Reg Himal	Rt,Fl	-	Angina pectoris, toothache, gingivitis, wound as analgesic
<i>P. atrosaguinea</i> Lodd.	-	2800-3600	H	Reg Himal	Lf	-	Wounds as analgesic
<i>P. fruticosa</i> Lim.	Bhumbal	3300-4000	Sh	Reg Himal	AP	-	Astringent
<i>Geum elatum</i> Wall.	-	3000-4000	H	Reg Himal	Rt	-	Astringent, dysentery, diarrhea
<i>Rubus ellipticus</i> Sm.	Aakh	1100-2000	Sh	Ind. Or	Fr, Rt	-	Dysentery, malaria, stomachache, worms
<i>R. niveus</i> Thunb.	Anchha	1200-3200	Sh	Reg Himal	Fr, Rt, Lf	Geaniol, acetaldehyde, acrolcin, propanol	Stomachache
<i>Prunus armeniaca</i> L.	Khoomani	1100-2500	T	Reg Caucas	Sd, Fr, Wd	-	Massage oil
<i>Pyrus pashia</i> Buch.-Ham. D.Don	-	1100-2000	T	Reg Himal	Lf,Fr	-	Eye disorder, digestive disorders
<i>Rosa moschata</i> Lindl.	Kuja	1100-2800	Sh	Oriens	Lf,Fl,AP	-	Wounds, ophthalmia, diarrhea
<i>R. webbiana</i> Wall. ex Royle	Chawag	3200-4000	Sh	Reg Himal	Fl, Fr, AP	-	Hepatitis, jaundice, stomachache
<i>Sorbus aucuparia</i> L.	-	3000-3500	Sh	Europe As Bor	Fr	-	Cough, cold
<i>S. ursina</i> (Wenzing.) Decne	-	3200-3600	Sh	Reg Himal	Br	-	Wound healing
<i>Spiraea canescens</i> D.Don	Kati ,Sagal	1800-2800	Sh	Reg Himal	Br, St	-	Sores, wounds
Ranunculaceae							
<i>Anemone obtusiloba</i> D. Don	-	2800-3800	H	Reg Himal	Rt,Sd	-	Menorrhoea, rheumatism, purgative, cooling
<i>A. rivularis</i> Buch.-Ham.	Chutrak	2600-3500	H	Ind Or	WP	Saponin, Betulinic acid, rivularinin	Ear complaints, appetizer, gastric, headache, wounds, sores, veterinary medicine
<i>A. rupicola</i> Camb.	Mangaltukshi	3500-3800	H	Reg Himal	AP	-	Diuretic
<i>Aconitum heterophyllum</i> Wall.ex Royle	Patish	3200-4200	H	Reg Himal	Rt	Heteratisine, heterophyllisin, heterophylline, heterophyllidine, atisine, atidine, F-	Anthelmintic, cold, cough, diarrhoea, dyspepsia, gall bladder, abdominal pain, gastric, piles, vomits, worms, stomachache

<i>A. violaceum</i> Jacq.	Jhimber	3500-4000	H	Reg Himal	Rt	dihydroatisine, hetidine, hetisine	
<i>Caltha palustris</i> L.	Shomalap	2800-3500	H	Reg Bor Temp et Arct	Rt,Lf	Indaconite and Bikhaconitine	Cough, gastrointestinal complaints, renal pain, rheumatism, stomachache
<i>Clematis barbellata</i> Edgew.	-	2800-3500	Sh	Reg Himal	Rt,Lf	Triterpene, caltholide, palustrolide, triterpenoid, saponin	Gonorrhoea, cattle wound, hand clean
<i>C. buchananiana</i> DC.	Veraphul	1200-1800	Cl	Reg Himal	Rt, Lf	-	Itching, skin disorder
<i>Delphinium vestitum</i> Wall.	-	3500-4200	H	Reg Himal	WP	-	Skin diseases, sores, tumors
<i>D. cashmirianum</i> Royle	-	3500-4800	H	Reg Himal	WP, Fl, Lf	-	Antidote to snake bite, cuts, wounds, diarrhea
<i>D. denudatum</i> Wall.	Laskar, Nirbishi	1500-2800	H	Reg Himal	Rt	Denudatine	Ascites, abdominal pain, cough, cold, dropsy, dyspepsia, house hold uses, headache, renal pain, swell, stomachic, cuts, wounds
<i>Ranunculus diffusus</i> DC.	-	1500-2000	H	Ind Or Malaya	WP	-	Abdominal pain, anthelmintic, respiratory complaint, toothache, ulcer, vetlice, ticks
<i>R. hirtellus</i> Royle	Goodi	1800-3200	H	Reg Himal	AP	-	Boils
<i>Thalictrum foliolosum</i> DC.	Mamiri	2000-3500	H	Europe	Rt	Berberine, thalictrine	Counter irritant, anthelmintic, vermicial, cooling, emoll, wounds
Rhamnaceae							
<i>Rhamnus triqueter</i> Wall.	Gonta	1500-2000	Sh	Reg Himal	Br, Fr	-	Abdominal pain, blood purification, boils, earache, eczema, eye disease, leucoderma, piles, rheumatism, gout, tonic, toothache
<i>R. purpureus</i> Edgew.	Chaunsha	1500-2700	Sh	Reg Himal	St, Fr, Lf, Wd	-	Blood purifier, boils, scabies, skin diseases, tonic
<i>R. virgatus</i> Roxb.		1200-2600	H	Ind Or As Bor	St,Fr,Br	Hydroxymethylantraquinone	Digestive disorders
<i>Zizyphus mauritiana</i> Lam.	Ber	1100-1400	T	Ind Or Malaya	St, Br, Fr, Lf	-	Emetic, purgative, eczema, ringworm, affection of spleen
Rubiaceae							
<i>Galium aparine</i> L.	-	2000-3500	H	Reg Bor Temp et Magell	Lf,WP	Glycoside, asperalosite, citric acid	Blood purifier, cholera, digestive problem, dysentery, hair fall of headache, oedema, ulcer, whooping cough, stomachache
<i>G. asperifolium</i> Wall.	-	2500-3700	H	Europe As Temp	WP	-	Astringent, skin disease
<i>G. rotundifolium</i> L.	-	2700-3500	H	Europ As Temp	WP	-	Skin disease, diuretic, urinary problem
<i>Rubia cordifolia</i> L.	Jamithi	1200-2600	H	As Trop et Temp Afr Trop	St, Rt, Lf	Glocoside, munjistin	Colic, dyspepsia, jaundice

Rutaceae									
<i>Boenninghausenia albiflora</i> (Hk.f.) Reichb. ex Meissn.	Pissumar	1500-2800	H	Reg Japan	Himal	Rt	Rutacridone, rutin, cadinene, cadalene, caryophyllene oxide	Antiseptic, cuts and wounds, vomiting, dysentery	
<i>Skimmia laureola</i> (DC.) Zucc.	Neir	1600-2700	Sh	Reg Himal		Lf	Skimnianine, bergapten & skimmiol	Antiseptic, boils, gastric pain, rheumatism, scabies, small pox	
<i>Zanthoxylum armatum</i> DC.	Tirmira	1100-1600	Sh	Reg China	Himal	Br, St, Lf, Sd	Berberine	Anthelmintic, carminative, cough, cholera, eczema, itching, leucoderma, piles, rheumatism, small pox, snake bite, stomachache, indigestion, tonic, tooth complaints	
Salicaceae									
<i>Populus ciliata</i> Wall. ex Royle	Pak butra	2000-3500	T	Reg Himal		St, Br, Inf, Lf	-	Bone fracture, tonic, stimulant, blood purifier	
Saxifragaceae									
<i>Bergenia stracheyi</i> Hook.	Pashanbhed	2800-4000	H	Baja California Sur (Mexico, Northern America)		Rt, Lf	-	Kidney stone, poultice, stiff joint, diuretic, antiscorbutic, astringent, ophthalmia, tonic, cuts, wounds	
<i>B. ligulata</i> (Wall.) Engl.	Pashanbhed	1500-2800	H	Reg Himal		Rt, Lf	Bergenin, (+) afzelachin, C-glycoside, and β -sitosterol	Asthma, boils, cuts, wounds, burns, , liver complaints, ophthalmia, piles, thirst, kidney stones, urine complaints, diarrhea of cattle	
Scrophulariaceae									
<i>Euphrasia himalayica</i> Wettst.	-	3200-3800	H	Reg Himal		Lf	-	Eye disorder	
<i>Picrorhiza kurrooa</i> Royle ex Benth.	Karu	3400-4200	H	Reg Himal		Rt, Rh, Lf, St	-	Anemia, arthritis, asthma, bitter tonic, cardiogenic, cold, dyspepsia, diarrhoea, influenz, diuretic, hepato protective, indigenous system of medicine, jaundice, liver trouble, stomach, laxative, pure circulation blood	
<i>Scrophularia calycina</i> Benth. & Scroph.	-	2600-3200	H	Reg Himal		AP, Lf	-	Stimulate appetite	
<i>S. dentata</i> Royle ex Benth.	-	3300-3700	H	Reg Himal		Lf	-	Appetizer	
<i>S. himalensis</i> Royle ex Benth.	-	3400-3800	H	Reg Himal		Lf	-	Insecticide	
<i>Verbascum thapsus</i> L.	Kolomasta, Jangli tamaku	1200-3600	H	Reg Caucas	Himal et Sibir	Lf, AP	Rotenone, coumarin, stearic acid, palmitic acid, β -sitosterol, linoleic acid	Asthma, cough, diarrhoea, dysentery of sheep, poultice, skin disease, narcotic, fish poisoning, ear infection,	
Sapindaceae									
<i>Sapindus mukorosii</i> Gaern.	Doda	1100-2500	T	As Trop		Fr, Sd	Saponins, epoxy acid, triene, diene acid,	Skin diseases, insecticidal	

								rhamnose	
Smilacaceae									
<i>Smilax aspera</i> L.	Kukardara	1100-1600	Sh	Europe Ind Or	Oriens	Rt	B- sitosterol, saponoin, asperagenin	Diuretic, diaphoretic, rheumatic-arthritis	
Solanaceae									
<i>Datura stramonium</i> L.	Datura	1100-1600	H	Trapazia		Lf, Sd, Fr	-	Dislocation of joints, jaundice, rheumatism, stomachache, toothache, veterinary lactation	
<i>Solanum nigrum</i> L.	Makoy	1100-2000	H	Ampliga		WP	Solanine, Saponine	Antidote to opium toxic, boils, cough, diarrhoea, dysentery, ear and eye problems, goiter, testicles, kidney, bladder, piles, rheumatism, sprain, stomachache, swell, throat trouble, ulcer in mouth	
<i>Withania somnifera</i> (L.) Dunal	Ganda	1100-1500	Sh	Reg Oriens	Mediter	Rt	-	Asthma, boils, bronchitis, cough ,dropsy, eye complains, wounds, skin diseases, swelling of hands, feets	
Symplocaceae									
<i>Symplocos chinensis</i> (Lour.)Drace	Lash	1500-2500	T	Reg Burma Japan	Himal china	Br	-	Astringent, diarrhea	
Thymeleaceae									
<i>Daphne papyacea</i> Wall. ex Steud.	Jangli mirch	1800-2600	Sh	China		Rt, Lf	-	Intestinal complaints	
<i>Wikstroemia canescens</i> Meissn.	Bhojishel	1800-3000	Sh	Reg Zeylan	Himal China	Lf, Br	-	Pisticidal	
Trillidiaceae									
<i>Trillium govanianum</i> Wall.	Satwa	2500-3800	H	Reg	Himal	Tu	-	Dysentery	
Ulmaceae									
<i>Celtis australis</i> DC.	Kharik	1100-1800	T	Europe Temp	As Ind Or	WP	Betulin, gallic acid	Bone fracture, pimples contusions, sprains and joint pain	
Urticaceae									
<i>Boehmeria platyphylla</i> Jacq.	-	1200-1500	Sh	As et Ins	Afr Pacific	Trop	Lf, St, Br	-	Dysentery, eczema
<i>Girardinia diversifolia</i> Link.	Jarahan	1400-2800	H	Ind Or	Malaya		Br, Lf	-	Gonorrhoea, Bone fracture, muscle cramp
<i>Urtica dioica</i> L.	Kungsh, aahan	1800-2800	H	Reg	Bor	Temp	Lf	Lecithin, linoleic acid, oleic acid, linolenic acid, acetylcholine acid, histamine	Blood purifier, jaundice, skin eruption, astringent, dog bite wounds, kidney disease, postnatal tonic, throat pain, tonic
<i>U. parviflora</i> Roxb.	Aahan	1100-2000	Sh	Reg	Himal		Sd, Lf ,Inf, Rt	Oleic acid, linolenic acid, acetylcholine acid, histamine	

<i>U. hyperborea</i> D. Don	-	3000-4500	Sh	Reg Himal	WP	-	Rheumatism, stomachache
Violaceae							
<i>Viola biflora</i> L.	Bunufsha	2800-3600	H	Reg Bor Temp	Lf, Fl, Sd	-	Antiseptic, antispasmodic, cold, cough, diaphoretic, laxative, leucoderma, skin disease
<i>V. serpens</i> J.E Sm.	Bunufsha	1500-2600	H	Ind Or Malaya	Lf, Fl, Sd	-	Bronchitis, cold, cough, eye disorder, laxative, leucoderma
<i>V. canescens</i> Wall.	Banfsa	1500-3000	H	Ind Or Malaya China	Lf, Fl, Rt	Violine, violaquercitrin, saponin	Asthma, bronchitis, cold, cough, eye disorder, malarial, emetic, demulcent, cuts, wound
Vitaceae							
<i>Cissus repanda</i> Vahl.	-	1400-1800	Sh	Ind Or	Lf	-	Bone fracture, sores
Velerianaceae							
<i>Nardostachys grandiflora</i> DC.	Jatamansi	3500-4500	H	Reg Himal	Rt	-	Blood purifier, cooling, cough, diuretic, tonic, ulcer, snake bite
<i>Valeriana hardwickii</i> Wall.	Mushakbala	2500-3300	H	Reg Himal Malaya	Rt	Maaliol, β - Sitosterol, valeranone, stearic acid	Antidote to poisonous stings of insects, scorpion, epilepsy, hysteria, neurosis, skin disease, insecticides, mental disorder
<i>V. jatamansi</i> Jones	Nihani	1500-3400	H	Reg Himal	Rt	-	Aphrodisiac, mental disorder, local beverage, aromatic, insecticide
Zingiberaceae							
<i>Hedychium spicatum</i> J.E.Sm.	Ban haldi	1500-2500	H	Reg Himal	Rh	Methylpara, cumarinacetate, cinnamic ethyl acetate, ethyl-P- methoxycinnomate	Asthma, blood purification, bronchitis, nausea
<i>Roscoea procera</i> J.E.Sm.	-	2000-4000	H	Reg Himal Burma	Rt	-	Veterinary
<i>R. alpina</i> Royle	Musli	3000-4000	H	Reg Himal	WP	-	Tonic, veterinary wounds, cuts
Gymnosperms							
Cupressaceae							
<i>Juniperus indica</i> L.	Bitaru	3000-3800	Sh	Soongar Himal	Reg WP, AP	Ascorbic acid, juniperin, pectins, organic acid, potassium salts	Cough and cold, tonsillitis, headache, malarial, neck pain, blood pressure
<i>J. communis</i> L.	Petada, Shukpa, Dhup	2800-4000	Sh	Reg Bor Temp et Arct	WP, St, Fr	Myrcene, sabinene, pinene, limonene, cineole condensed tannins, flavonoids.	Kidney disorder, malfunctioning of kidney, liver, bladder, heart disease, nervous disorder, oil from barriers inhaled as vapors, or taken in the form of pills, dropsy mucous discharge, antibiotic for animal, repel flies
<i>J. recurva</i> Buch.-Ham. ex D.Don	Shurr	3000-4200	Sh	Reg Himal	Rt, WP, Br	Isocedrolic acid, 4- keto cedrol, biflavons,	Kidney trouble

						cupessuflavone and its derivatives	
Pinaceae							
<i>Abies pindrow</i> Royle	Tosh	2500-3800	T	Reg Himal	AP, St, WP	α - pinene, carene, dipentene, bornylacetate, tannin, lignin, carbohydrates	Asthma, bronchitis
<i>Cedrus deodara</i> Roxb	Deodar	1600-3000	T	Ind Or	WP, St, Br	p-methyl-d-3-tetrahydroacetophenone, p-methyl acetophenone, cis- and trans-atlantones, a-and b-himalchenes, ar-dihydroturmerone, himachalol, allohimachalol	Skin disease, anthelmintic, rheumatism, ulcer, diarrhea, dysentery, ulcers
<i>Pinus wallichiana</i> A.B. Jacks	Kail	1800-3200	T	Reg Himal	WP, St, Sd,Lf	Resins, cymene, p-cymene, propanoic acid	Abscess, dislocation of joints, rheumatic pain, ulcer, unconsciousness
<i>P. roxburghii</i> Sarg.	Chil	1100-2200	T	Reg Himal	Oil, Wd, Lf	α -pinene, β -pinene, carene, longicylene	Abcesses, dislocation of joints, ulcer, unconciuosness
Taxaceae							
<i>Taxus baccata</i> subsp. <i>wallichiana</i> (Zucc.) pilger	Rakhal	2500-3300	T	Reg Bor Temp	St, Br, AP	Taxol, Alpaline, taxine, taxanine	Anticancerous, blood purifier, swelling, asthma, contraceptive

Abbreviations used: T= tree; Sh= shrub; H=Herb; F= Fern; Reg Himal= Himalayan Region; As= Asia; Afr= Africa; Austr= Australia; Amer= America; Trop= Tropical; Bor= Borealis; Occ= Occidentalis; Argent= Argentina; Temp= Temperate; Cosmop= Cosmopolitan; N. Calid= North Calidonia; Mediter= Mediterranean; Calif=California; Subtropical; Geront= Gerontia; cult= Cultivated; Amphig= Amphigaea; Min= Minnor; Centr= Central; Arct= Arctic; Alp= Alpine; Philipp= Philippin; Afghan= Afghanistan; Turkist= Turkistan; et= And; Polynes= Polynesia; Madag= Madagascar; pacif= Pacific; Lf= Leaf; Br= Bark; Wp= Whole Plant; Fl= Flower; Fr= Fruit; Sd= Seed; Wd= Wood; Inf= Inflorescence; St= Stem; Frd= Frond; AP=Aerial part; and Rh= Rhizome.