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Medicinal and Aromatic Plant Specimen Preserved at Herbal Museum, Brindaban Botanical Garden, Plant Research Center, Makawanpur District, Central Nepal

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Abstract

This paper documents the collected and preserved museum specimen of medicinal and aromatic plant of the Herbal museum, Brindaban Botanical Garden, Plant Research Centre, Makawanpur. Based on the literatures of specimen conserved at Herbal museum and the interview with some local people, the use pattern of the specimens was documented. A total of 196 species belonging to165 genera and 91 families were recorded. Majority of the museum specimens collected and preserved in herbal museum were from Makawanpur followed by Kapilvastu, Ilam, Dolpa and Mustang ranging from 90 m - 5000 m elevation. Herbs were the dominant species and Seed/fruits were the most useful parts. Majority of the species were mostly used for the treatment of gastrointestinal disorder. This study provides detailed information about the medicinal and aromatic plants specimens that have been preserved at Herbal Museum, Brindaban Botanical Garden, Plant Research Center, Makwanpur, Nepal.

Keywords: Ailments, Conservation, Life form, Museum, Secondary metabolites

Introduction

Medicinal plants include diverse group of plant in herbal medicine containing rich ingredients needed for drug development (Hassan, 2016). Aromatic plants are generally referred as 'natural bio-chemical factories' or 'chemical goldmines (Thomas et al., 2000). These are utilized mainly in cosmetic industries, pharmaceutical and drug industries (Samarth et al., 2017). Medicinal and aromatic plants (MAPs) have been termed slightly in a broader sense distinguishing the fragrant (aromatic) ingredients containing medicinal plants (Singhab, 2012).

Plants have been used for human benefits from the decades. In developing countries more than 3.5 billion people rely on plants as a primary health care (Farnsworth et al., 1985). The number of medicinal plants varies according to the study done by different researchers. Around 1,624 species of medicinal plants were listed from the Medicinal and Aromatic plant database of Nepal (Shrestha et al., 2000). 1,792 plant species were used by traditional healers (Baral & Kurmi, 2006). 1900 medicinal plants species were recorded (Ghimire, 2008). It is believed that medicinal plants have been developed from indigenous knowledge which is now used as ayurvedic medicines and herbal drugs (Rawal et al., 2009). Medicinal plants used as in Ayurveda have immense pharmacological potential to cure several diseases (Luitel et al., 2014).

Medicinal and aromatic plants are the part of non-timber forest products offering supplementary food and ethno medicine along with cash income to the rural communities (Shrestha et al., 2020). Before the implementation of master plan for the forestry sector (1988), this group of plants was termed as minor forest products, later on realizing its uses, importance and remarkable market value it has been considered as the major bio resources. Trade of medicinal plants has been started few years ago. According to Ghimire et al., (2015) the export of 10770 tons of MAPs was estimated to be worth US$ 60.09 million from Nepal in 2014. Rittha (*Sapindus mukorossi*), Kaulo (*Persea odoratissima*), Tejpat (*Cinnamomum tamala*), Amala (*Phyllanthus emblica*), Sugandhwal (*Valeriana jatamasi*), Jiwanti (*Dendrobium* sp.) and lichens are the major medicinal plants harvested and traded commonly from Baitadi District (Department of Forest [DoF], 2015, Kala, 2003). Later on it was banned in early 2011 (Ministry of

Forests and Soil Conservation [MoFSC], 2011). Pre mature harvesting, over harvesting, illegal trading are the major reasons for the decline population of medicinal and aromatic plants from wild (Ghimire et al., 2008). *Paris polyphylla* is the one of major species facing such kind of issues (Pyakurel et al. 2017). Similarly, *Myrsine semiserrata* is also getting declined from its natural habitat due to over use. Among the 164 exported species of medicinal plants (DoF, 2014), 25 species of MAPs has been exported from Makawanpur (District Forest Office Makwanpur [DFOM], 2018). So far, 30 species are prioritized for economic development and out of them Makawanpur holds 24 species (Tamang et al., 2016). There are more conservation threats to medicinal plants in the lowlands because of direct harvesting of the plants, also due to other human-induced activities such as habitat encroachment for agriculture and settlement, deforestation, forest fires and grazing (Rokaya et al., 2013).

Botanical gardens and museums play crucial role in *in-situ* and *ex-situ* conservation. Museum offers rich resources of data for the analysis of species existence, change in bio diversity of past century (Shaffer et al., 1998). Herbal Museum of Brindaban Botanical Garden play an important role in genetic conservation, provide the original data base and is the main source to fulfill the knowledge gap in the distribution, status and long term population trend of medicinal and aromatic plant species. In a similar way the museum also aid to promote the medicinal and aromatic plant species, which are important for developing herbs, based natural products and pharmaceuticals, herbal disinfectants and repellents.

Thus, the present study aims to assess the preserved specimen of medicinal and aromatic plants and their uses. Enhancing information, knowledge about its importance to local users and researchers which will help them to identify medicinal plants and their uses and will ultimately motivate them to conserve these valuable plant resources.

Materials and Methods

The study was carried out from March 2020 to May 2021. It was based on the collected and preserved museum specimens of Herbal Museum at Brindaban Botanical Garden, Plant Research Centre, Makawanpur, Bagmati Province. Each and every specimens has been preserved using naphthalene

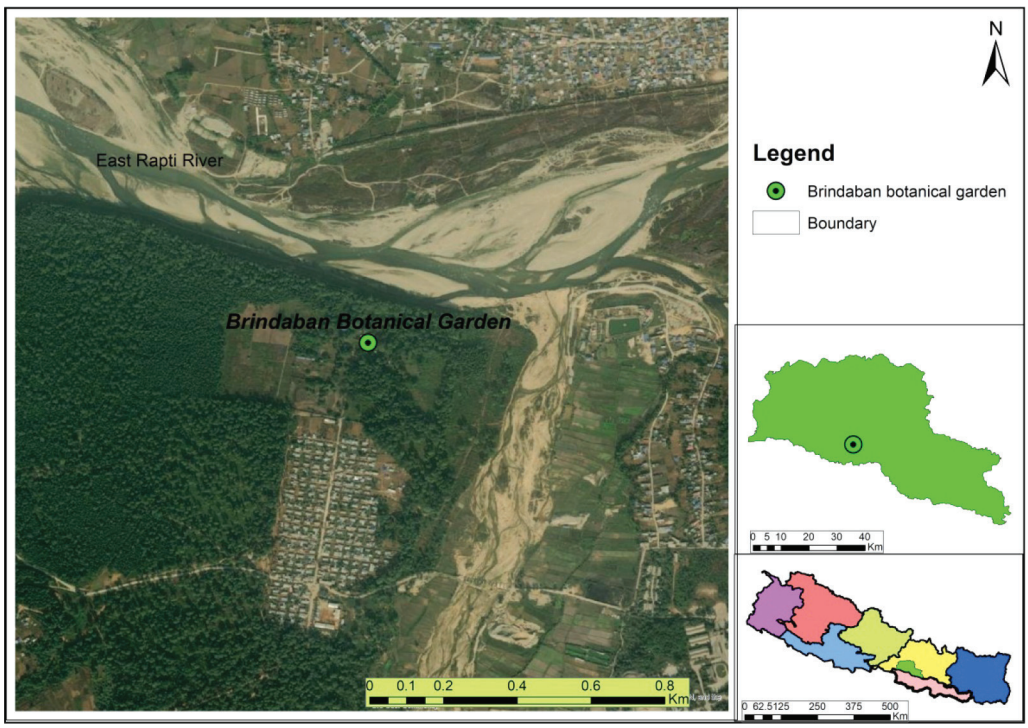

Figure 1: Map of Brindaban Botanical Garden, Plant Research Centre, Makwanpur

balls, the delicate specimens like fungi has been preserved in formalin in order to avoid the decay. The specimens were collected by various collectors from the Makawanpur District (Hatiya, Hetauda, Manahari, Padam Pokhari, Bakaiya, Simbhanjyang, Daman BG and Tistung BG), and associated district; Bara, Salyan, Banke, Kapilvastu (Pipra), Ilam, Jumla, Dolpa and Mustang ranging from lower elevation 90 m to higher 5000 m elevation.

Each museum specimen comprises well labeled information including its scientific name, local name, place of collection, elevation, useful parts and its uses. The data were collected from these well labeled preserved museum specimens at Herbal museum. Identification of some of the unidentified museum specimen was done through experts, photographs and relevant taxonomic literatures (Fraser- Jenkins et al., 2015; Press et al., 2000; https://www.catalogueoflife.org). Information about the uses of unidentified specimens was recorded from the local people through interviews, group discussions and interaction in trainings of medicinal and aromatic plants, and from published literatures.

Results and Discussion

Altogether 196 plant museum specimen comprising 165 genera belonging to 91 families has been recorded (Appendix). Plant specimen enlisted includes Angiosperms constituting the highest number of plant species (25 monocotyledons and 146 dicotyledonous), Gymnosperms (6 spp.), Pteridophytes (5 spp.), Lichens (11 spp.) and Fungi (2 spp.) (Figure 2).

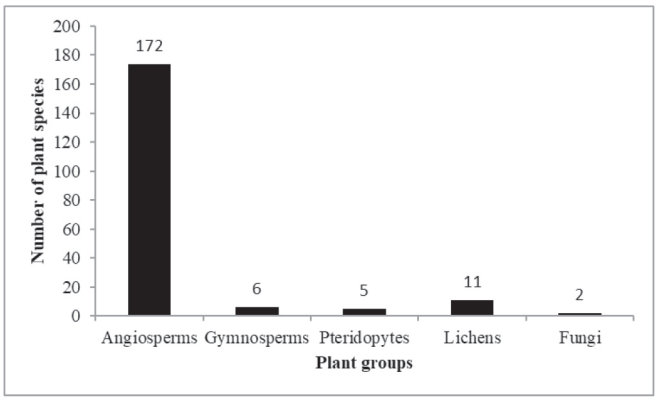

Figure 2: Plant groups of recorded plant species

Plant species was categorized into five different groups of life form. Herbs were the major sources of medicine comprising 72 plant species followed by trees (67 spp.), shrubs (28 spp.), climbers (15 spp.), lichens (11 spp.) and fungi (2 spp.) (Figure 3).

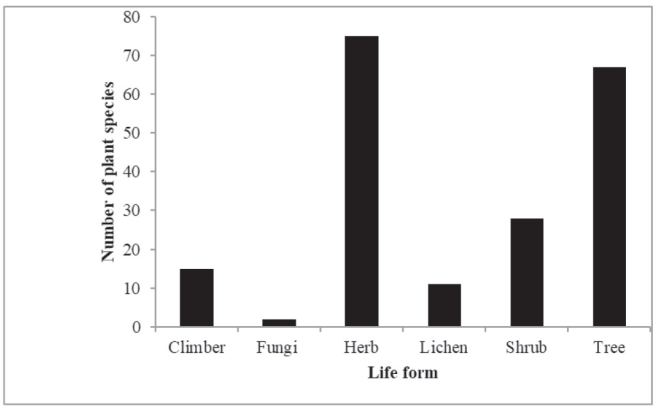

Figure 3: Life form of recorded plant species

The useful parts of the plant species for different ailments were categorized into seven categories: fruit/ seed, leaf, flower, root, stem/bark, whole parts. From the observed information the use frequency of fruit/seed parts (81 spp.) were the major followed by root/rhizome (47 spp.), leaf (34 spp.), flower (13 spp.), bark/stem (20 spp.) and whole parts (33 spp.) (Figure 4).

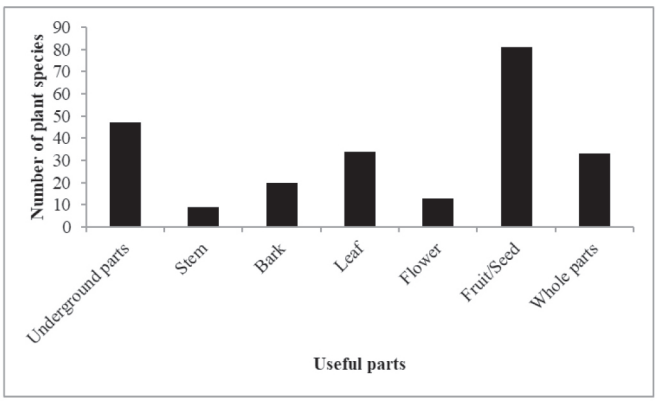

Figure 4: Use frequency of different parts of plant species

Similarly, the ailments were also categorized into ten different categories: Gastro intestinal disorders, cuts and wounds, fever, skeleton-muscular system, dermatological infection, coughs and cold, genito-urinary ailments, dental, headache, respiratory, eye, nasal and throat (Figure 5). On the basis of the information use frequency for gastro intestinal disorders (76 spp.) was the highest followed

by common cold, cough and fever (48 spp.), dermatological disorder (35 spp.), respiratory disorders (32 spp.), Skeleto-muscular system (23 spp.) and others ailments. Besides the category of human ailments these plant species are used for other purposes (food, flavoring agent, dye, as pesticides and insecticides).

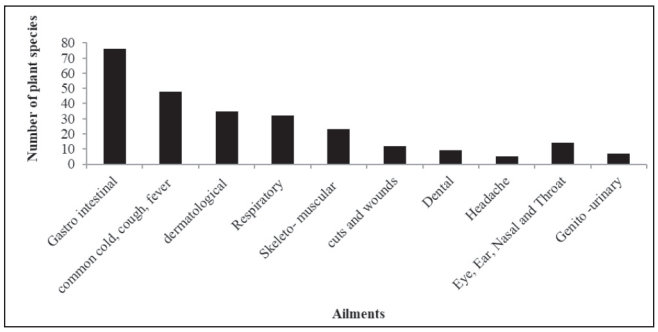

Figure 5: Use frequency of plant species in different ailments and other than ailments

The seed/fruit was the most useful parts followed by underground parts (root/ rhizome), bark and flower. Majority of the species were collected below 1000 m elevation (100 spp.) and least from higher elevation 3000-5000 m (7 spp.).

Medicinal and aromatic plants include the plant species having different life forms. Herbs were the primary source of medicinal ingredients followed by trees, most likely because herbs were more abundant (Figure 3). Thus, herbs were more accessible and the roots, rhizomes and leaves, which were the most frequently used part of the plant to treat diseases were easier to reach. They also have a faster rate of growth and renewal and may possess bioactive secondary metabolites in relation to the environment (Bernhoft, 2010; Singh et al., 2012).

Based on the specimens preserved in the Herbal Museum, Plant Research Centre, Brindaban Botanical Garden, it has been revealed that most of the specimen were from Makawanpur District because most of the collection were done here and least were from the associated areas and district. Similarly, Majority of the species were from lower elevation below 1000 m (100 spp.) whereas least (7 spp.) were represented from 3000-5000 elevation. High number of medicinal and aromatic plants at low elevation could be due incomplete explorations in higher elevation or associated areas and due to favorable environmental factors such as high temperature, rainfall, sunlight or due to higher density of human population and thus higher pressure on use of any plants in lower elevations Rokaya et al. (2012).

Plant parts used for medicinal preparations include underground parts (roots, bulbs, rhizomes and tuber), bark, stem, leaves, flower, fruits or seeds. Fruits/ Seeds were the most useful parts followed by the underground parts (Rhizome/tuber), leaves and whole parts (Figure 4). Fruits/ Seed of the plant species were mostly used because these parts were easily available and have the high concentration of bioactive compounds than other parts. Medicinal plants are used for local medicine and for other basic purposes (such as food, fodder, firewood, dyes, construction, etc.) by the indigenous people (Luitel et al., 2013). Other than fruits/seed the underground parts were also mostly used and in gastro intestinal disorders which is in consistent with the findings of Yadav et al. (2016). The whole parts of some of the plant species like *Plantago major, Solanum anguivi* and *Astilbe rivularis* are used in medicine (Appendix).

Many of the plants species recorded were used in gastro intestinal disorders (Figure 5). Most probably the gastrointestinal disease seems to occur frequently in that area from where the plant species samples were collected. Some of the medicinal plants used in gastro intestinal disorders (stomach ache, gastric, worm infestation and dysentery) *Cinnamomum tamala*, *Dactylorhiza hatagirea*, *Artemisia* sp., were in consistent with Yadav et al. (2016) and Ambu et al. (2020). Similarly, the medicinal use of *Asparagus racemosus* in treatment of diabetes, gastrointestinal problems and hormonal imbalance were similar with the findings of Hasan et al. (2016). The use of *Centella asiatica* in treatment of urino genital problems, dermatological disorders and *Wedelia calendulaea* in treatment was similar with the findings of Hedge et al. (1994) and Gohil et al. (2010). Most of the plant species observed was not used only in specific health issues they were used

to cure different diseases. Besides, the treatment of diseases medicinal and aromatic plants were used for other purposes (aromatic oils, furniture, flavors, perfumes, insecticides etc.). Due to the presence of secondary metabolites like flavonoids, terpenoids and other compounds these medicinal and aromatic plants such as *Swertia angustifolia, Ocimum tenuiflorum, Cinnamomum camphora* etc are also used as insecticides and pesticides (Gandhi et al., 2015). Realizing the importance of Medicinal and aromatic plant species some of the species; Ritha, Sarpagandha, Gurjo, Mentha, etc. were also prioritized by the government for marketing.

Conclusion

Medicinal and aromatic plant resources are the important component of biodiversity with important contributors to local livelihood. The medicinal and aromatic plants specimen of 196 species belonging to 165 genera and 91 families were recorded. The species having different life forms has their own importance. Herbs were mostly used as medicinal plants. The highest groups of plants were from the angiosperm category. Fruit/ Seed were the most useful parts. Mostly these species are consumed for gastro intestinal problems followed by common cold, cough problem. In conclusion, the observation reflects the importance of documentation of medicinal and aromatic plant species that have been preserved in herbal museum. Furthermore, conservation strategies need to be built up. Conservation and protection of medicinal and aromatic plants do not only prevent the loss and damage or their existence which is directly or indirectly linked with the livelihood of local people but also prevent their loss from the cultural heritage. Explorations and conservation of museum specimen from associated regions is recommended for the future research work.

Authors Contributions

Corresponding author conducted the study, collected data as well as prepared manuscript. Second and Third author did the editing work.

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Appendix: List of Plant species recorded in herbal museum, Brindaban Botanical Garden, Plant Research Centre, Makawanpur

S.N.	Scientific Names	Family	Local Names	Life form	Place of collection	Elevation	Useful parts	Uses	Reference / Remarks
1	*Abelmoschus moschatus* (L.) Medik.	Malvaceae	Latakasturi	Herb	Makawanpur (Brindaban BG) and Tistung BG	448 m, 1,910 m	Seed (Fruit)	Stimulant, releif cramps (muscle spasm), stomachache, carminative, Gastric, skin problems, in snake bite.	
2	*Abrus precatorius* L.	Fabaceae	Ratigedi	Climber	Makawanpur (Bhimphedi)	1,200 m	Seed / Fruit	Hair falls, swelling, worm's infection, skin diseases, itching, urinary disorders.	
3	*Acer oblongum* Wall. ex DC.	Sapindaceae	Phirphire	Tree	Makawanpur (Chaukitol)	600 m	Stem	Furniture	
4	*Achyranthes aspera* L.	Amaranthaceae	Datiwan	Herb	Makawanpur (Padampokhari)	497 m	Stem	Toothache	
5	*Acmella paniculata* (Wall. ex DC.) R.K.Jansen	Asteraceae	Marauti/Latoghaans/Gorakhpaan	Herb	Makawanpur (Padampokhari)	568 m	Flower/whole parts	Toothache, kill fish and stomachache, Tuberculosis, arthristis & fever	
6	*Aconitum gammiei* Stapf	Ranunculaceae		Herb	Makawanpur (Kogate)	2,100 m	Rhizoids	Stomachache.	
7	*Aconitum heterophyllum* Wall. ex Royle	Ranunculaceae	Attis	Herb	Salyan	1,580 m	Roots	Tonic, dysentery, cholera and Cough.	
8	*Acorus calamus* L.	Araceae	Bojho	Herb	Makawanpur (Daman BG)	2,310 m	Rhizome	Commoncold, cough, laryngotic disease, amoebic dysentry and fever.	
9	*Aegle marmelos* (L.) Corrêa	Rutaceae	Bel	Tree	Makawanpur (Manahari)	450 m	Seed (Fruit)/Bark	Typhoid, Bark used in dysentry and kills worms in intestine.	
10	*Aesculus indica* (Wall. ex Cambess.) Hook.	Sapindaceae	Lekh pangro	Tree	Makawanpur (Bhimphedi)	1,300 m m	Seed (Fruit)/Bark	Joint pain and skin problems. Bark is used in joint pain and seed oil is considered to be used for rheumatism.	
11	*Aleuritopteris bicolor* (Roxb.) Fraser-Jenk.	Pteridaceae	Rani sinka	Herb	Makawanpur (Padampokari)	531 m	Whole part	Wounds.	
12	*Allium hypsistum* Stearn	Amaryllidaceae	Jimbu	Herb	Mustang	4,500 m	Leaves	Food.	
13	*Allium wallichii* Kunth	Amaryllidaceae	Ban Lasun	Herb	Jumla	2,500 m	Bulb	Cholera and dysentry.	
14	*Alstonia scholaris* (L.) R. Br.	Apocynaceae	Chatiwan	Tree	Makawanpur (Manahari)	400 m	Seed (Fruit)	Temporary family planning, fever, skin diseases, ulcer, diarrhea.	
15	*Amomum subulatum* Roxb.	Zingiberaceae	Alainchi	Herb	Makawanpur (Tistung BG)	1,910 m	Seed	Food, stomachache and increase appetite,in cough.	
16	*Anacyclus pyrethrum* (L.) Link	Asteraceae	Akkalkanda	Herb	Makawanpur (Tistung)	1,910 m	Root	Diabetes and as insecticides	
17	*Anaphalis contorta* (D.Don) Hook.f.	Asteraceae	Buki Phool	Herb	Makawanpur (Chuniya)	1,800 m	Flower	Cuts and wounds, gain appetite.	Pande et al. 2008

S.N.	Scientific Names	Family	Local Names	Life form	Place of collection	Elevation	Useful parts	Uses	Reference / Remarks
18	*Andrographis paniculata* (Burm.f.) Nees	Acanthaceae	Kal megh	Herb	Makawanpur (Brindaban BG)	428 m	Leaves, Fruit, Stem and flower	Burns, Diarrhoea, digestion and improves digestion.	
19	*Annona squamosa* L.	Annonaceae	Sharifa	Tree	Makawanpur (Padampokhari)	610 m	Seed (Fruit)	Edible	
20	*Areca catechu* L.	Arecaceae	Supari	Tree	Makawanpur (Hetauda -9)	488 m	Leaves	Teeth problems and diarrhoea, dysentry.	
21	*Argentina lineata* (Trevir.) Soják	Rosaceae	Bajradanti	Herb	Makawanpur, Mustang	4,800 m	Leaves, flower, seed/fruit	Diabetes	
22	*Artemisia* sp.	Asteraceae	Titepati	Herb	Makawanpur (Bhimphedi)	1,160 m	Leaves	Gastric, fever, ascariasis, malaria.	
23	*Asparagus racemosus* Willd.	Asparagaceae	Kurilo	Herb	Makawanpur (Bhimphedi)	1,173 m	Fruit pod, seed, root	Diabetes, gastrointestinal problems, brain complaints and rheumatism,Women's fertility, miscarriages and increase milk yield, menstruation irregularities.	
24	*Astilbe rivularis* Buch.-Ham. ex D.Don	Saxifragaceae	Thulo Okhati	Shrub	Makawanpur (Chuniya)	1,150 m	Whole part	Body pain, increase immune system, diarrhoea and dysentery	
25	*Azadirachta indica* A.Juss.	Meliaceae	Bakaino	Tree	Makawanpur (Hetauda)	438 m	Seed (Fruit)	Fever, Cough, skin5diseases, ulcer, asthma	
26	*Baccharoides anthelmintica* (L.) Moench	Asteraceae	Kalo jira	Herb	Makawanpur (Saktikhola, Chisapani)	286 m, 1,700 m	Seed (fruit)	Worms infection and Lymphatic filariasis, cure cancer, diabetes, control blood pressure, cut and wounds.	Padyar et al. 2013
27	*Bauhinia purpurea* L.	Fabaceae	Taanki	Tree	Makawanpur (Hetauda - 9)	1,600 m	Fruit pod / Seed	Diarrhoea, Edible	
28	*Berberis aristata* DC.	Berberidaceae	Chutro	Shrub	Makawanpur (Daman)	2,311 m	Stem	Malaria, skin disease, eye problem, jaundice, piles, to make wine, dye.	Bhattarai et al. 2017
29	*Bergenia ciliata* (Haw.) Sternb.	Saxifragaceae	Paashanabed	Herb	Makawanpur (Daman)	2,200 m	Rhizome	Rhizome is used in back pain, diarrhoea and dysentry and Kidney diseases.	
30	*Betula alnoides* Buch.-Ham. ex D.Don	Betulaceae	Saur	Tree	Mustang	3,350 m	Bark	Dysentry.	
31	*Betula utilis* D. Don	Betulaceae	Bhojpatra	Tree	Mustang	4,490 m	Bark	Paper.	
32	*Bixa orellana* L.	Bixaceae	Sindhur	Tree	Makawanpur	900 m	Seed (Fruit)	Dye.	
33	*Bombax ceiba* L.	Bombacaceae	Simal	Tree	Makawanpur	428 m	Seed (Fruit)	Dysentry, wounds and in skin diseases.	
34	*Brachycorythis obcordata* (Lindl. ex Wall.) Summerh.	Orchidaceae	Gamdol	Herb	Makawanpur (Tistung)	2,000 m	Tuber	Cough. Nutritious. Powder taken with milk as tonic and to overcome dysentery	

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35	*Brucea javanica* (L.) Merr.	Anacardiaceae	Bhakki amilo	Shrub	Dhading, Makawanpur (Sarikhet)	1,300, 980 m	Seed /fruit androot	Diarrhoea, dysentry, cough and malaria.	
36	*Butea monosperma* (Lam.) Kuntze	Fabaceae	Palans	Tree	Kapilvastu (Pipra)	1,200 m	Flower	Dysentry and Ascariasis.	
37	*Calotropis gigantea* (L.) W. T. Aiton	Apocynaceae	Aankh	Shrub	Makawanpur (Hetauda)	468 m	Seed (Fruit)	Scorpion sting, asthma, nasal problems.	
38	*Cassia fistula* L.	Fabaceae	Raajbriksha	Tree	Makawanpur (Brindaban BG)	453 m	Bark, leaves and Fruit pod	Used as tonic , ringworm, syphilis, skin disease, leprosy, ulcers, ophthalmic, onstipation, fever, diabetes	
39	*Castanopsis indica* (Roxb. ex Lindl.) A.DC.	Fagaceae	Katush	Tree	Makawanpur (Simbhanjyang)	2,455 m	Seed (Fruit)	Edible.	
40	*Cedrus deodara* (Lamb.) G. Don	Pinaceae	Devdar	Tree	Makawanpur (Daman BG)	2,310 m	Leaves/ bark	In rituals for incense.	
41	*Centella asiatica* (L.) Urb.	Apiaceae	Ghodtapre	Herb	Makawanpur (Chaukitol)	467 m	Whole parts of plant	wound, skin disorder, ulcers, diarrhoea, fever, female genito urinary tract	
42	*Cetratria* sp.	Parmeliaceae	Jhyau	Lichen	Illam (Maipokhari)	1,000 m	Whole part	Chest pain, dry cough.	
43	*Chenopodium album* L.	Amaranthaceae	Bethe	Herb	Makawanpur (Padampokari)	450 m	Seed(Fruit)	Body pain	
44	*Chlorophytum borivilianum* Santapau & R.R.Fern.	Asparagaceae	Seto Musli	Herb	Makawanpur (Padampokhari)	509 m	Root	Diarrhea, jaundice, asthma, diabetes, scabies, piles, sexual stimulants.	Bhattarai et al. 2017
45	*Choerospondias axillaris* (Roxb.) B.L.Burtt & A.W.Hill	Anacardiaceae	Lapsi	Tree	Makawanpur (Manahari)	500 m	Seed (Fruit)	Muscle pain and edible.	
46	*Chrysopogon zizanioides* (L.) Roberty	Poaceae	Khaskhas	Herb	Makawanpur	458 m	Root	In fever, In producing sweats, stomachache and in menstruation problems.	
47	*Cinnamomum burmannii* (Nees & T.Nees) Blume	Lauraceae	Gokuldhoop	Tree	Illam (Maipokhari)	1,200 m	Bark	Incense	
48	*Cinnamomum camphora* (L.) J.Presl	Lauraceae	Camphor	Tree	Makawanpur (Hetauda)	440 m	Leaves, Fruit and Stem	Essential oil, common cold and cough, diarrhea, insecticide, pesticide.	
49	*Cinnamomum glaucescens* (Buch.-Ham. ex Nees) Hand.-Mazz.	Lauraceae	Sugandha kokila	Tree	Makawanpur (Brindaban BG)	450	Seed /Fruit	Essential oil and incense sticks.	
50	*Cinnamomum tamala* (Buch.-Ham.) T.Nees & Eberm.	Lauraceae	Tejpat	Tree	Makawanpur (Brindaban BG)	450	Leaves	Gastric, stomachache, sexual excitement	

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51	*Cinnamomum verum* J. Presl	Lauraceae	Dalchini	Tree	Makawanpur (Brindaban BG)	1,200 m	Bark	Aromatic oils, flavour in food, vomiting, diarrhoea, scorpion sting.	
52	*Citrus aurantium* L.	Rutaceae	Orange	Tree	Makawanpur (Kogate)	2,000 m	Bark	Aromatic oils, constipation, gastric, control high blood pressure.	
53	*Coeffea* sp.	Rubiaceae	Coffee	Shrub	Ilam (Maipokari)	300 m	Fruit	Food.	
54	*Crotalaria prostrata* Rottb. ex Willd.	Fabaceae	Sanoboksibaja	Herb	Makawanpur (Padampokhari)	500 m	Seed	Edible.	
55	*Crotolaria pallida* Aiton	Fabaceae	Runchejhar	Herb	Makawanpur (Padampokhari)	500 m	Seed	Fever, Urine problems.	
56	*Curculigo orchioides* Gaertn.	Hypoxidaceae	Syaldhotey	Herb	Makawanpur (Padampokhari)	500 m	Root and tuber	Improve immune system, stomach problems, ulcer, jaundice and asthma	
57	*Curcuma angustifolia* Roxb	Zingiberaceae	Haledo/Barkhe sarro	Herb	Makawanpur	1,500 m	Fruit	Jaundice.	
58	*Curcuma caesia* Roxb.	Zingiberaceae	Kalo Haledo	Herb	Makawanpur (Brindaban BG)	445 m	Root	Asthma , tumer and piles	
59	*Cycas pectinata* Buch.-Ham.	Cycadaceae	Thakal	Shrub	Makawanpur (Thingan)	1,230 m	Cone	Ornamental, food.	
60	*Cymbopogon flexuosus* (Nees ex Steud.) W. Watson	Poaceae	Lemon grass	Herb	Makawanpur, Kapilvastu	448, 110 m	Leaves	Aromatic oils.	
61	*Cyperus rotundus* L.	Cyperaceae	Mothe	Herb	Makawanpur (Padampokhari)	500 m	Rhizome	Stomachache, kill worms in intestine, cure dysentry and leprosy.	
62	*Cyperus scariosus* R.Br.	Cyperaceae	Nagar Mothe	Herb	Makawanpur (Padampokhari)	300	Rhizome	Diarrhoea, epilepsy, gonorrhea, syphilis and liver damage.	Kasana et al. 2013
63	*Datura metel*.L	Solanaceae	Daturo	Shrub	Makawanpur (Hetauda)	300 m	Leaves and fruit	Hydrophobia, convulsion, neuralgia, rheumatic swelling, sciatica, dog bite, asthma	
64	*Dendrobium fimbriatum* Hook.	Orchidaceae	Banera	Herb	Makawanpur	500 m	Bulb	Immunity power and in snake bte.	
65	*Dendrobium macraei* Lindl.	Orchidaceae	Jivanti	Herb	Makawanpur(Chuniya)	1600m	fruit, seed	Snake bite, general stimulant, asthma, throat trouble, fever and muscle pain.	
66	*Didymocarpus albicalyx* C.B. Clarke	Gesneriaceae	Kumkum	Herb	Makawanpur (Daman)	2,100 m	Whole parts of plant	Cure stones in kidney and bladder.	
67	*Dioscorea deltoidea* Wall. ex Griseb.	Dioscoreaceae	Vyakur	Climber	Makawanpur (Manahari)	450	Tuber	Food, constipation, and kill worms in stomach.	
68	*Dioscorea pentaphylla* L.	Dioscoreaceae	Tarul	Climber	Makawanpur (Manahari)	600 m	Tuber	Cure swelling.	

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69	*Diospyros kaki* L.f.	Ebenaceae	Haluwabed	Tree	Makawanpur (Bhaise)	1,137 m	Flower	Diabetes.	
70	*Diospyros melanoxylon* Roxb.	Ebenaceae	Madhufal/ Kali Kath	Tree	Banke (Nepalgunj)	200m	Leaf	Improve Mental health and heart diseases	
71	*Dipsacus inermis* Wall.	Dipsacaceae	Banmula	Herb	Makawanpur (Daman BG)	2,311 m	Root	Cough sore throat, body ache and swelling.	
72	*Dolichousnea longissima* (Ach.) Articus	Parmeliaceae	Old's man beared	Lichen	Makawanpur (Daman)	2,200 m	Whole part	Pneumonia, bronchitis and respiratory problems.	
73	*Dolomiaea costus* (Falc.) Kasana & A. K. Pandey	Asteraceae	Kuth	Herb	Not Available	3000 m	Root	Commoncold, asthma, arthritis, stomachache, toothache, skin disease, strengthen immune system and in cosmetics.	
74	*Drosera peltata* Thunb.	Droseraceae	Pamga	Hern	Makawanpur(Kule khani)	1,317 m	Seed (Fruit)	Asthma, bronchitis, epilepsy, cough, nausea, headache, measles.	
75	*Drynaria propinqua* (Wall. ex Mett.) Bedd.	Polypodiaceae		Herb (Fern)	Makawanpur	1,400 m	Rhizome	Bone fracture.	
76	*Eclipta prostrata* (L.) L.	Asteraceae	Bhringaraj	Herb	Makawanpur (Padampokhari)	427 m	Whole parts of plant	Hepatitis, snake venom poisoning, gastritis, cough and asthma	
77	*Elaeocarpus serratus* L.	Elaeocarpaceae	Rudraraksh	Tree	Makawanpur (Manahari)	560 m	Seed	Asthma and cough.	
78	*Embelia* sp.	Myrsinaceae	Bhyabhidanga	Climber	Makawanpur (Dhanusha BG)	125 m	Fruit	Treatment of worms, in blood impurities, control blood pressure.	
79	*Embelia tsjeriam- cottam* (Roem. & Schult.) A. DC.	Myrsinaceae	Bayubing	Shrub	Makawanpur	1,200 m	Seed	Ascariasis (Tapeworm infection), indigestion, blood infection, headache, skin disease.	
80	*Entada rheedei* Spreng.	Fabaceae	Pangra	Climber	Salyan	1,100 m	Seed (Fruit)	Goitre	
81	*Eucalyptus camaldulensis* Dehnh	Myrtacaceae	Masala	Tree	Makawanpur (Manahari)	536 m	Seed (Fruit)	Aromatic oils	
82	*Fritillaria cirrhosa* D.Don	Liliaceae	Kankol	Herb	Kaski (Pokhara)	3,000 m	Fruit	Strengthen immune system, asthma.	
83	*Ganoderma lucidum* (Curtis) P. Karst.	Ganodermataceae	Red fungi	Fungi	Makawanpur (Daman)	2,296 m	Whole part	Anticancer, asthma, heart disease, common cold, allergy.	
84	*Gaultheria fragrantissima* Wall.	Ericaceae	Dhasingre	Shrub	Makawanpur (Bagmara)		Leaves	Relief pain.	
85	*Glycine max* (L.) Merr.	Fabaceae	Bhatmas	Herb	Makawanpur (Hatiya)	500 m	Seed	Edible.	
86	*Glycyrrhiza glabra* L.	Fabaceae	Jethi Madhu	Herb	Simbhanjyang and Daman	2400 m , 2310 m	Root	Common cold, cough, Vomiting, Gastric (stomach problem), Weakness, Skin diseasea, Sexual diseases, Strengthen Immune system.	

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87	*Gossypium arboreum* L.	Malvaceae	Kapas	Tree	Makawanpur (Sigreni)	400 m	Fruit pod.	In making cotton.	
88	*Heterodermia leucomela* (L.) Poelt.	Physciaceae	Jhyau	Lichens	Salyan	2,100 m	Whole part	In treatment of wounds and for making perfumes.	
89	*Holarrhena pubescens* (Buch.-Ham.) Wall. ex G. Don	Apocynaceae	Indra jau	Tree	Makawanpur (Hetauda)	522 m	Seed, Bark and Root	Dysentry, piles, leprosy, toothache, body pain and chestpain	
90	*Hypotrachyna* sp.	Parmeliaceae	Jhyau	Lichen	Daman BG	2,300 m	Whole part	Wounds, making perfumes	
91	*Illicium verum* Hook.f.	Schisandraceae	Star Masala	Tree	Banke (Nepalgunj)	165 m	Seed	Flavor.	
92	*Ipomoea nil* (L.) Roth	Convolvulaceae	Siude lahara	Herb	Makawanpur (Bribdaban BG)	448 m	Root and seed	Gastric and constipation.	
93	*Juniperus indica* Bertol.	Cupressaceae	Dhupi	Tree	Makawanpur (Daman)	2,300 m	Leaves, Bark	Incense.	
94	*Justicia adhatoda* L.	Acanthaceae	Asuro	Shrub	Makawanpur (Bhaise)	1,060 m	Flower and leaves	Piles, asthma, bronchitis, pyorrhea, cough, ulcers, tuberculosis.	
95	*Leucaena leucocephala* (Lam.) de Wit	Fabaceae	Ipil Ipil	Tree	Makawanpur (Padam Pokari)	400 m	Seed	Fodder.	
96	*Leucas cephalotes* (Roth) Spreng.	Lamiaceae	Draudpuspi	Herb	Makawanpur	450m	Whole parts of plant	High fever, Jaundice, common cold and cough, piles, paralysis and bronchitis.	
97	*Ligusticopsis wallichiana* (DC.) Pimenov & Kljuykov	Apiaceae	Bhutkesh	Herb	Mustang	2,900m	Root	Common cold, heal wound, stomachache and as a flavoring agent in food.	
98	*Lindera neesiana* (Wall. ex Nees) Kurz	Lauraceae	Siltimur	Herb	Makawanpur (Tistung)	1,800 m	Fruit	Flavor in food and in skin problems.	
99	*Lobaria retigera* (Bory) Trevis.	Lobariaceae	Jhiyau	Lichen	Daman	2300m	Whole part	Respiratory infections.	
100	*Lobelia pyramidalis* Wall.	Campanulaceae	Eklebir	Herb	Makawanpur (Laamidanda)	1,680 m	Flower	Cough asthma, bronchitis and fever.	
101	*Luffa acutangula* (L.) Roxb.	Cucurbitaceae	Pate Ghiraula	Climber	Kathmandu (Godawari)	15,10 m	Seed, Root	Gastric, Nausea, constipation, Buns.	
102	*Lycopodium japonicum* L.	Lycopodiceae	Naagbeli	Climber (Fern)	Makawanpur (Simbhanjyang)	2,300 m	Whole part	Respiratory and Kidney problems and for making gun powder.	
103	*Lyonia ovalifolia* (Wall.) Drude	Ericaceae	Angeri	Shrub	Makawanpur (Bhaise)	1,100 m	Leaves	Scabies, poisonous to cattle.	
104	*Machilus gamblei* King ex Hook. fil.	Lauraceae	Kauso	Tree	Makawanpur (Bhaise)	1,200	Bark	Incense.	
105	*Machilus odoratissimus* Nees	Lauraceae	Seto Kaulo	Tree	Makawanpur (Bhimphedi)	1,200 m	Bark	Food.	
106	*Maesa chisia* Buch.-Ham. ex D. Don	Primulaceae	Bilaune	Shrub	Makawanpur (Bhaise)	1,120 m	Bark	Anthelmintic, ringworm, scabies	

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107	*Maharanga wallichiana* DC.	Boraginaceae	Maharangi	Herb	Makwanpur (Kogate)	2,200 m	Whole parts of plant	Roots to dye hairs, eye diseases and piles.	
108	*Mahonia napaulensis* DC.	Berberidaceae	Jamanemandro	Shrub	Makawanpur (Tistung BG)	1,932 m	Seed/bark	Dysentery, bark is mainly used for the eye inflammation.	
109	*Mallotus philippensis* (Lam.) Müll.Arg.	Euphorbiaceae	Sindhure/Rohini	Tree	Makawanpur (Chaukitol)	560 m	Seed	Improves appetite, ulcers, wounds, tumour, bronchitis, scabies, ringworm and skin diseases.	
110	*Matricaria chamomilla* L.	Asteraceae	Chamomile	Herb	Bara District	132 m	Seed/flower	Aromatic oils, gastric and throat diseases.	
111	*Mesua ferrea* L.	Calophyllaceae	Naag kesari/ rupkesari	Shrub	Makawanpur	900 m	Fruit and seed	Stomachache, dysentry, cough, indigestion and piles.	
112	*Microporus* sp.	Polyporaceae	Red fungi	Fungi	Daman	2,100 m	Whole part	High blood pressure and cholesterol.	
113	*Millettia extensa* (Benth.) Benth. ex Baker	Fabaceae	Gaujo	Shrub	Makawanpur (Bhimphedi)	1,000 m	Leaves, fruit and Stem	Skin disease.	
114	*Momordica charantia* L.	Cucurbitaceae	Ban karela/Tite karela	Climber	Makawanpur (Manahari)	300	Seed and Root	Diabetes, stomachache, arthritis,	
115	*Moringa oleifera* Lam.	Moringaceae	Sigru, Shovanjan	Tree	Makawanpur (Brindaban BG)	448 m	Leaves	Leave powder used as food, arthritis, and kidney diseases.	
116	*Mucuna monosperma* Roxb. ex Wight	Fabaceae	Baldyngra	Climber	Makawanpur (Bakaiya)	400 m	Seed (Fruit pod)	Asthma and cough.	
117	*Mucuna pruriens* (L.) DC.	Fabaceae	Kauso	Climber	Makawanpur (Bhaise)	900 m	Fruit pod	Dysentry, fever, immune system and in scorpion stings.	
118	*Myrica esculenta* Buch.-Ham. ex D. Don	Myricaceae	Kafal	Tree	Makawanpur (Tistung BG)	2,000 m	Bark	Rheumatism, sprains, cough, asthma.	
119	*Myristica fragrans* Houtt.	Myristicaceae	Jaiphal	Tree	Makawanpur (Daman BG)	2,300 m	Leaf	Stimulating sexual desire, flavoring agent, indigestion and relief pain.	
120	*Nardostachys jatamansi* (D. Don) DC.	Valerianaceae	Jatamasi	Herb	Dolpa	4,950 m	Rhizome	Stimulant, tonic, antispasmodic (muscle spasm).	
121	*Nelumbo nucifera* Gaertn.	Nelumbonaceae	Rato Kamal	Herb	Makawanpur, (Kapilvastu)	448 m, 116 m	Fruit and Root	Flower used in making perfume, roots in jaundice and dysentery.	
122	*Nigella sativa* L.	Ranunculaceae	Kalo jira/ Mungrelo	Herb	Dhanusha Botanical Garden	300 m	Seed (Fruit)	Skin diseases, jaundice, fever, dysentery, cough.	
123	*Nyctanthes arbor-tristis* L.	Oleaceae	Parijat	Shrub	Makawanpur (Hetauda)	430 m	Stem	Pneumonia and sore throat or in tonsil.	
124	*Ocimum tenuiflorum* L.	Lamiaceae	Tulsi	Herb	Makawanpur (Padampokhari)	400 m	Seed / Fruit	Common cold, digestion.	
125	*Operculina turpethum* (L.) Silva Manso	Convolvulaceae	Nisodh	Climber	Banke (Nepalgunj)	200 m	Root	Jaundice, piles and fever.	

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126	*Oroxylum indicum* (L.) Kurtz.	Bigoniaceae	Tatelo	Tree	Makawanpur	1,400 m	Root /Bark	Jaundice, arthritis, rheumatic, gastric ulcers, tumors, respiratory diseases, diabetes, dysentery, cancer and various bacterial infections.	
127	*Papaver somniferum* L.	Papaveraceae	Ophium	Herb	Makawanpur (Tistung BG)	1,800 m	Leaves and seed	Seed edible	
128	*Paris polyphylla* Sm.	Liliaceae	Satuwa	Herb	Makawanpur (Daman)	2,400 m	Rhizome	Immunity power, in cuts and wounds.	
129	*Parmelia* sp.	Parmeliaceae	Jhyau	Lichen	Illam (Maipokhari)	2,310 m	Whole part	For making colors.	
130	*Parnassia nubicola* Wall. ex Royle	Parnassiaceae	Mamira	Herb	Daman BG	2,300 m	Root	Increase immune system and skin diseases.	
131	*Persea americana* Mill.	Lauraceae	Avocado	Tree	Makawanpur (Manahari)	600 m	Fruit	Edible.	
132	*Phyllanthus emblica* L.	Phyllanthaceae	Amala	Tree	Makawanpur (Hetauda)	500 m	Fruit	Jaundice, Gastric, bleeding disorder, Indigestion, dysentry and in making triphala, making the hair smooth and long remove dandruff.	
133	*Picrorhiza scrophulariiflora* Pennell	Plantaginaceae	Kutki	Herb	Jumla	2,300 m	Underground rhiome	Fever, common cold, indigestion, back pain, sore throat and in anaemia.	
134	Pinus wallichiana A.B.Jacks.	Pinaceae	Gobre Salla	Tree	Makawanpur, Mustang	3,000 m	Leaves	Furniture.	
135	*Piper Longum* L.	Piperaceae	Pipla	Climber	Makawanpur (Tistung BG)	1,800 m	Seed (Fruit)	Menstrual disorder, enlarged spleen, tumor, liver problems, gout, jaundice,3carminative, anthelmintic	
136	*Pistacia chinensis* Bunge	Anacardiaceae	Kakadsinki	Tree	Makawanpur varta, Daman	480 m, 2,300 m	Rhizome	Ornamental.	
137	*Plantago major* L.	Plantaginaceae	Isabbol	Herb	Makawanpur (Simbhanjyang)	2,488 m	Leaf	Wound healing, respiratory, skin problems, and indigestion and relief pain.	
138	*Plasmatis* sp.	Parmeliaceae	Jhyau	Lichen	Illam (Maipokhari)	2,310 m	Whole part	Dye	
139	*Plumbago zeylanica* L.	Plumbaginaceae	Chitu	Climber	Makawanpur (Hatiya)	571 m	Whole plant	Skin diseases and gastric	
140	*Plumeria rubra* L.	Apocynaceae	Rato Chuwa	Tree	Makawanpur (Hetauda -9)	428 m	Flower	Tea.	
141	*Polypodium vulgare* L.	Polypodiaceae	Bishphej	Herb (Fern)	Bhimphedi	1,100 m	Rhizoids	Respiratory, jaundice, indigestion, cough, food.	

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142	*Prunus dulcis* (Mill.) D.A.Webb	Rosaceae	Kagaji Badam	Tree	Daman	2300m	Seed (Fruit)	Edible, constipation,kidney stones and cancer.	
143	*Pterocarpus marsupium* Roxb.	Fabaceae	Bijayasal	Tree	Kapilvastu (Pipra)	98 m	Stem	Making theki and cup. Water soaked for overnight in theki is very useful for diabetes patient.	
144	*Pterocarpus santalinus* L.f.	Fabaceae	Raktachandan	Tree	Banke (Nepalgunj)	164 m	Seed	Powder of wood is edible, Diabetes and as a tonic for headache.	
145	*Punica granatum* L.	Lythraceae	Anar	Shrub	Makawanpur (Hetauda)	700 m	Fruit	Diarrhoeaa and Tubercluosis	
146	*Ramalina sinensis* Jatta	Ramalinaceae	Jhyau	Lichens	Makawanpur (Simbhanjyang)	2400 m	Whole part	Flavoring agent, tobacco flavors and fodder.	Baniya et al. 2020
147	*Ramalina* sp.	Ramalinaceae	Jhyau	Lichens	Simbhanjyang	2400 m	Whole part	perfumes and treatment of chilblains	
148	*Rauvolfia serpentina* (L.) Benth. ex Kurz	Apocynaceae	Sarpagandha	Herb	Makawanpur (Brindaban BG)	463 m	Root	High blood pressure, fever, Indigestion.	
149	*Rheum australe* D. Don	Polygonaceae	Padamchal	Herb	Makawanpur (Daman BG)	2,300 m	Root	Constipation, diarrhoea, immune system improvement, gastric, swelling and fractured bone.	
150	*Rhododendron anthopogon* D.Don	Ericaceae	Sanpati	Shrub	Mustang (Kaagbeni)	1400m	Flower	Increase immune system, cure high altitude sickness.	
151	*Rhus toxicodendron* (Hook.f.) Kuntze	Anacardiaceae	Valayo	Tree	Makawanpur(Daman)	2,300 m	Seed	Joint pain, back pain, muscle pain and general body ache.	
152	*Ricinus communis* L.	Euphorbiaceae	Andher	Shrub	Makawanpur (Hetauda)	455 m	Seed	Rheumatism, sprains, cough, asthma.	
153	*Rubia manjith* Roxb. ex Fleming	Rubiaceae	Majitho	Climber	Makawanpur (Daman BG)	2,100 m	Whole part	Treatment for burned skin, to cure scorpion bite and prepare dye, root used in scabies.	
154	*Santalum album* L.	Santalaceae	Srikhanda	Tree	Makawanpur (Brindaban BG)	448 m	Seed/stem	Cosmetic, Skin disorder, Fever and in headache.	
155	*Sapindus mukorossi* Gaertn.	Sapindaceae	Ritha	Tree	Makawanpur (Brindaban BG)	1,000 m	Fruit	Cough, epilepsy, haemoglobin balance, toothache, fish poisoning.	
156	*Semecarpus anacardium* L. fil.	Anacardiaceae	Valayo	Tree	Makawanpur (Chaukitol)	500 m	Fruit	Rheumatoid, arthritis, Hookworm infection	
157	*Senegalia catechu* (L. f.) P.J.H. Hurter & Mabb.	Fabaceae	Khayer	Tree	Makawanpur (Hetauda)	438 m	Seed	Common cold and cough, Fever.	
158	*Senegalia rugata* (Lam.) Britton & Rose	Fabaceae	Sikakai	Tree	Makawanpur (Hatiya)	800 m	Seed / Fruit	Constipation, urinary trouble, malaria, Scabies, to make soap.	
159	*Senna alata* (L.) Roxb.	Fabaceae	Daadpaat	Shrub	Makawanpur (Hetauda)	425 m	Seed (Fruit)	Constipation, Skin diseases.	

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160	*Senna alexandrina var. alexandrina*	Fabaceae	Sunayi paat	Shrub	Makawanpur (Brindaban BG)	428 m	Leaves	Used as ointments of skin (Ringworm, scabies).	
161	*Senna auriculata* (L.) Roxb.	Fabaceae	Tarwar	Shrub	Makawanpur (Hetauda)	450 m	Fruit, leaf	Skin diseases and anthelmintic.	
162	*Solanum anguivi* Lam.	Solanaceae	Binhi	Herb	Makawanpur	448 m	Whole parts of plant	Common cold, toothache and sore throat.	
163	*Solanum virginianum* L.	Solanaceae	Kantakari	Herb	Makawanpur	448 m	Fruit and Whole parts	Fruit in headache, fever, asthma, joint pain, urine problems.	
164	*Sphagneticola calendulacea* (L.) Pruski	Asteraceae		Herb	Makawanpur	600 m	Whole plant	Gastric.	
165	*Spondias pinnata* (L. fil.) Kurz	Anacardiaceae	Amaro	Tree	Makawanpur (Hatiya)	576 m	Fruit/Seed	Fever, burnining sensation, diarrhoea and constipation.	
166	*Stereospermum colais* (Buch.-Ham. ex Dillwyn) Mabb.	Bignoniaceae	Padaare	Tree	Makawanpur	900 m	Fruit pod	Stomachpain, diabetes, liver1problems.	
167	*Strychnos nux-vomica* L.	Loganiaceae	Kuchilo	Tree	Makawanpur(Hatiya)	500m	Seed, Root and Leaves	Used as a remedy in chronic dysentery, paralytic and neuralgic disorders, epilepsy and rheumatic.	
168	*Swertia angustifolia* Buch.-Ham. ex D.Don	Gentianaceae	Chiraito	Herb	Illam (Maipokhari)	2,200 m	Whole plant	Strengthen immunity, fever, used as insecticide.	
169	*Swertia chirayita* (Roxb.) H. Karst.	Gentianaceae	Chirayito	Herb	Illam (Maipokhari)	2,200 m	Whole plant	Treatment of worm, fever, wounds, and to regain appetite.	
170	*Symplocos paniculata* (Thunb.) Miq.	Symplocacea	Lodh	Shrub	Makawanpur (Tistung)	1,900 m	Bark	Dysentry, ulcer, to strengthen muscles.	
171	*Syzygium cumini* (L.) Skeels.	Myrtaceae	Jamun	Tree	Makawanpur (Brindaban BG)	448 m	Seed (Fruit)	Dysentry. Bronchitis, asthma, ulcer, control blood pressure.	
172	*Tagetes minuta* L.	Asteraceae	Jungali Sayapatri	Herb	Makawanpur (Daman BG)	2,311 m	Whole part	Gastric, indigestion and in worms infection.	
173	*Tamarindus indica* L.	Fabaceae	Imli	Tree	Makawanpur (Hetauda)	400 m	Seed (Fruit)	Dysentry, arthritis,fever,calculus or stone disease.	
174	*Taxus wallichiana* Zucc.	Taxaceae	Lothsalla	Tree	Makawanpur (Kogate and Daman)	2,300 m	Leaves	Cough, bronchitis, and asthma. Cancer.	
175	*Tectaria coadunata* C.Chr.	Tectariaceae	Kalo Niuro	Herb	Makawanpur (Bagmara)	1,149 m	Leaves and rhizoids.	Used as edible fern.	
176	*Terminalia alata* Heyne ex Roth	Combretaceae	Saaj	Tree	Makawanpur (Hatiya)	560 m	Seed (Fruit)	Amoebic dysentry and in snake bite.	
177	*Terminalia arjuna* (Roxb. ex DC.) Wight & Arn.	Combretaceae	Arjun	Tree	Makawanpur (Manahari)	402 m	Seed (Fruit)	Ulcer, earc ache, to increase immune system, in amoebic dysentry.	

S.N.	Scientific Names	Family	Local Names	Life form	Place of collection	Elevation	Useful parts	Uses	Reference / Remarks
178	*Terminalia bellirica* (Gaertn.) Roxb.	Combretaceae	Barro	Tree	Makawanpur (Hatiya)	460 m	Seed /Fruit	Ingredients of the triphala of ayurvedic medicine, anaemia, leuco-derma, bronchitis, acrid, anthelmintic, inflamation, eye and nose, problems of bladder and piles	
179	*Terminalia chebula* Retz.	Combretaceae	Harro	Tree	Makawanpur (Hatiya)	450 m	Seed / Fruit	Stomachache, carminative, anthelmintic, tonic, dysentery, vomiting, anaemia, elephantiasis, disease of eye, hiccups, tonic	
180	*Thymus linearis* Benth.	Lamiaceae	Ghodmarcha	Herb	Makawanpur (Daman BG)	2,300 m	Leaves and fruit	Increase appetite, purify blood, teeth problem.	
181	*Thysanolaena latifolia* (Roxb. ex Hornem.) Honda	Poaceae	Amriso	Herb	Makawanpur	450 m	Seed	Boils	
182	*Tinospora sinensis* (Lour.) Merr.	Menispermacea e	Gurjo	Climber	Makawanpur (Manahari)	536 m	Root and Stem	Fever, diabetes, jaundice, liver problems, urine disease, leprosy and asthma cough.	
183	*Toxicodendron wallichii* (Hook. fil.) Kuntze	Anacardiaceae		Tree	Makawanpur (Simbhanjyang)	2,400 m	Seed and Root	Root is used in scabies.	
184	*Tsuga dumosa* (D.Don) Eichler	Pinaceae	Thingre salla	Tree	Mustang	3,500 m	Leaves	Dysentry.	
185	*Urtica dioica* L.	Urticaceae	Sisnu	Herb	Makawanpur (Brindaban BG)	1200 m	Whole parts	Menstrual disorders, diarrhoea, dysentry, diabetes, high blood pressure.	
186	*Usnea* sp.	Parmeliaceae	Jhyau	Lichen	Daman BG	2,300 m	Whole part	Pneumonia, bronchitis, respiratory problems.	
187	*Usnea strigosa* (Ach.) A.Eaton	Parmeliaceae	Jhyau	Lichen	Daman BG	2,300 m	Whole part	Pneumonia, bronchitis and respiratory problems.	Baniya et al. 2020
188	*Vachellia nilotica* (L.) P.J.H.Hurter & Mabb.	Fabaceae	Babul	Shrub	Makawanpur	600 m	Bark	Toothache	
189	*Valeriana jatamansi* Jones	Caprifoliaceae	Sungandhawal	Tree	Makwanpur (Tistung BG)	1,500 m	Roots	Mouth cancer, diarrhoea, stomachache, heart disease, spermatorrhea disease.	
190	*Viscum album* L.	Loranthaceae	Hardchur	Shrub	Makawanpur (Chuniya)	1,100 m	Bark	Control blood pressure, kills cancer cells, reduces kidney problems, increases immune system.	
191	*Vitex negundo* L.	Verbenaceae	Simali	Shrub	Makawanpur (Hetauda)	447 m	Leaves/ fruit	Toothache, asthma, bronchitis, rheumatism, antidote to venom and scorpion sting, fever, febrifuge, enlargement of6spleen, astringent, anthelmintic.	
192	*Withania somnifera* (L.)	Solanaceae	Aswagandha	Herb	Makawanpur	448 m	Root, seed and	Anaemia and in cancer.	

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	Dunal.				(Brindaban BG)		leaves		
193	*Woodfordia fruticosa* (L.) Kurz	Lythraceae	Dhayiro	Shrub	Makawanpur (Padampokari)	500 m	Root, Fruit, Flower	Dysentry, flower is used in amoebic dysentry, In making colors, Urine problems.	
194	*Zanthoxylum armatum* DC.	Rutaceae	Timur	Shrub	Makawanpur (Tistung BG)	2,000 m	Seed (Fruit)	Gastric, Mouth disease, improve Immune system, aromatic oils, Teeth problems and as flavoring agent in food.	
195	*Zingiber officinale* Roscoe	Zingerberaceae	Ginger	Herb	Makawanpur (Hetauda)	200 m	underground tuber	Masala, common cold, indigestion, piles and stomach problems.	
196	*Ziziphus jujuba* Mill.	Rhamnaceae	Bayar	Tree	Makawanpur	500 m	Seed (Fruit)	Seed is used in diabetes and rashes.	