



INTERNATIONAL JOURNAL OF ENVIRONMENT

Volume-6, Issue-4, Sep-Nov 2017

ISSN 2091-2854

Received: 19 July 2017

Revised: 14 Oct 2017

Accepted: 15 Nov 2017

DIVERSITY OF FODDER PLANTS OF BETALGHAT BLOCK, NAINITAL DISTRICT, WESTERN HIMALAYA

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Abstract

The Himalaya is well recognized for its bio-physical diversity and socio-cultural heritage, traditional systems and an ample quantity of indigenous knowledge. The study was conducted with the help of Participatory Rural Appraisal (PRA) tool to document the diversity of fodder plants of Betalghat Block of Nainital District (Western Himalaya). Total 210 fodder plants species belonging to 70 families, 164 genera of different habits such as trees (35%), shrubs (31%), herbs (25%), and climbers (9%), were recorded. Out of 70 families, 12 dominant families were Poaceae (18 species), followed by Fabaceae (16 species), Moraceae (10 species), Rosaceae (10 species), Asteraceae (8 species), Euphorbiaceae (7 species), Mimosaceae (6 species), Caesalpinaceae (5 species), Ranunculaceae (5 species), Rhamnaceae (5 species), Urticaceae (5 species) and Rubiaceae (5 species). Of the total recorded species, 41% of the species were used during winter days, 38% during summer and 21% throughout the year. For each species, scientific and vernacular names, multipurpose uses (Fuel, medicinal, timber, agricultural tools, religious and fiber) were used. For the conservation of fodder plant species prioritization, mass multiplication with afforestation, reforestation and forest rehabilitation must be done.

Key words: Fodder Plants, Diversity, Betalghat Block, Participatory Rural Appraisal (PRA) tool.

DOI: <http://dx.doi.org/10.3126/ije.v6i4.18907>

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Introduction

The abode of snow “Himalaya” is popularly known for its bio-physical diversity and socio-cultural heritage, unique physical and ethnic diversity, traditional systems and a plentiful quantity of naturally existing knowledge or tribal wisdom (Rao, 1989, 1994). People living in Himalayan villages, utilize plants for medicine, food, fodder, fuel, timber, agricultural implements and many more other purposes (Samant & Dhar, 1997, Samant et al., 2007). Total 1748 species of medicinal plants 675 species of wild edibles, 279 species of fodder, 118 species of essential oil yielding medicinal and aromatic plants and 155 species of sacred plants have been recorded in the Indian Himalayan region (Samant et al., 1998, Samant & Palni, 2000, Samant & Pant, 2003).

Uttarakhand is a part of Indian Himalayan Region (IHR) and its coordinates are latitudes $28^{\circ}43'45''$ - $31^{\circ}8'10''$ N and longitudes $77^{\circ}35'5''$ - $81^{\circ}2'25''$ E (Uniyal et al., 2007). The people living over this region are comparatively poor and are fully dependent on the biological resources. Integral part of their economy and major sources of their livelihood are agriculture and livestock.

The feeding requirements of livestock are met through forest-based fodder, agricultural and agro forestry systems (Purohit & Samant 1995, Singh et al., 1998). In traditional farms in the mountains of the Himalaya, fodder plays a vital role in the crop, livestock, manure and soil nutrient cycle (Shahima & Malaviya, 2014). Tree fodder is valuable and is very essential for temperate climate (Singh & Kanstra, 1981, Roder, 1992), particularly during winter months when quantity of green fodder is reduced and insufficient (Khanal & Subba 2001, Subba et al., 1994) and the quality is inappropriate (Vishvakarma et al., 1998, Roder et al., 2003). Quantity and quality of fodder varies from various seasons. It declines with the onset of dry and inclines with the onset of rainy season. Fodder resources used during winter are largely influenced by the many factors like the prevailing cropping systems, the environment and the type of minerals (Roder, 1992).

The Himalayan region is known to support about 84 trees and 40 shrubs of fodder value that the people use (Negi, 1977). Singh & Singh (2005) have estimated that in Uttarakhand the fodder leaf production from forests (77%), agricultural sector (12%), orchards (2.7%) and bushes/perennial herbs (19.2%), Singh et al., (1988) computed contribution of different sources of fodder for the Uttarakhand Himalayan region.

The agro-ecosystem of the Himalayan is very complex in which crop fields, livestock and forests are inter-linked among one another. The availability of green fodder is only for 4 months (monsoon). Remaining months of the year (winter and summer) green fodder is not

available resulting in low production of milk other animal related products. Different fodder yielding trees and shrubs differ from place to place and the tree lopped extensively for fodder in one place may not at all be lopped at another place.

Floristically and ethno-botanically this region has been studied by many workers; Atkinson, 1882, Osmaston, 1927, Gupta, 1968, Pangtey & Rawat, 1987, Gaur 1999, Joshi & Joshi, 2001, Tewari et al., 2010, Khan et al., 2013, Yadav & Bisht, 2013, Dhanai et al., 2014, Pandey et al., 2016, 2017.

In present study the diversity of fodder plants and its related indigenous knowledge are not properly documented. In recent years, documentation of traditional knowledge on wild plants becomes a prerequisite to preserve traditional knowledge of a region. Therefore, the present study was carried out to collect valuable information on diversity of fodder plants and its related indigenous knowledge of Betalghat Block of Nainital district, Western Himalaya with authentic scientific name, vernacular name, and family and economic uses for further research.

Material and Methods

Geographical description of study area

Study was conducted in twelve sites of Betalghat block (Nainital District) viz. Lohali, Halso-Korar, Richi-Thapal, Betalghat, Simtaya, Ratighat, Bhowali, Niglat, Chaurasa, Kanda, Bhatrojkan and Khalad-Pankatara of Nainital district (during year 2016-2017) lies between 29°38'925" North latitude and 79°49'465" East longitude, covering an area of 256.33 Km² an altitudinal range varies from 700 to 1800 masl (**Fig. 1**). Study area is bounded by Tarikhet and Bhikyasain block of district Almora on the north, Kotabag block of district Nainital on the south, Sult block of district Almora on west and Ramgarh block of district Nainital on the east. The vegetation mainly comprises of tropical, sub-tropical and temperate forest.

Climate

Climate of District Nainital is characterized by long snowy winter and short summer season. It is temperate and monsoon type (Singh & Singh, 1992) having four distinct seasons viz., monsoon (July to September), post-monsoon (October to November), winter (December to January) and summer (April to mid-June). Climatic data were obtained with help of standard instrument. The average rainfall is 1800 mm. The maximum temperature in the Nainital district is 42.2⁰C and the minimum is -5.4⁰C.

Data collection and sample identification

The information on fodder plants and their economic uses and dependency of community on plant species collected from primary as well as secondary sources. Participatory Rural Appraisal (PRA) tools (Silverman, 2005) were used to carry out the study. The study is based on identification of fodder plants with the help and participation of local/rural peoples, farmers, traditional knowledge holders to know the local names and multipurpose uses, season of availability of the mentioned plants. The collected plants specimens were identified with the help of different floras and manuscripts, standard literature (Osmaston 1927, Gupta, 1968, Gaur 1999) and matched with the herbarium specimen of Regional Ayurvedic Research Institute, (RARI) CCRAS, Ranikhet. The well preserved plant specimens were deposited in the Herbarium of Department of Botany, Kumaun University, Nainital.



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

Results and Discussion

Diversity

The geographical peculiarities make the Himalayan region a very diverse system subtending a wide range of vegetation types. The people living over this region are fully dependent on the biological resources. Integral part of their economy and major sources of their livelihood are agriculture and livestock. The present study compiles 210 fodder plant species belonging

to 164 genera and 70 families, used by local people (**Table- 1**). Out of 70 families recorded poaceae (18 species) is the most diverse family, followed by fabaceae (16 species), moraceae, rosaceae (10 species each), asteraceae (8 species), euphorbiaceae (7 species), mimosaceae (6 species), caesalpinaceae, ranunculaceae, rhamnaceae, urticaceae and rubiaceae (5 species each) (**Fig. 2**). The plant species were categorized into their form of habit i.e. trees, shrubs, herbs and climbers (**Fig. 3**). The diversity on the basis of the plant revealed that trees formed the most dominant habit (35%), followed by shrubs (31%), herbs (25%) and climber (9%).

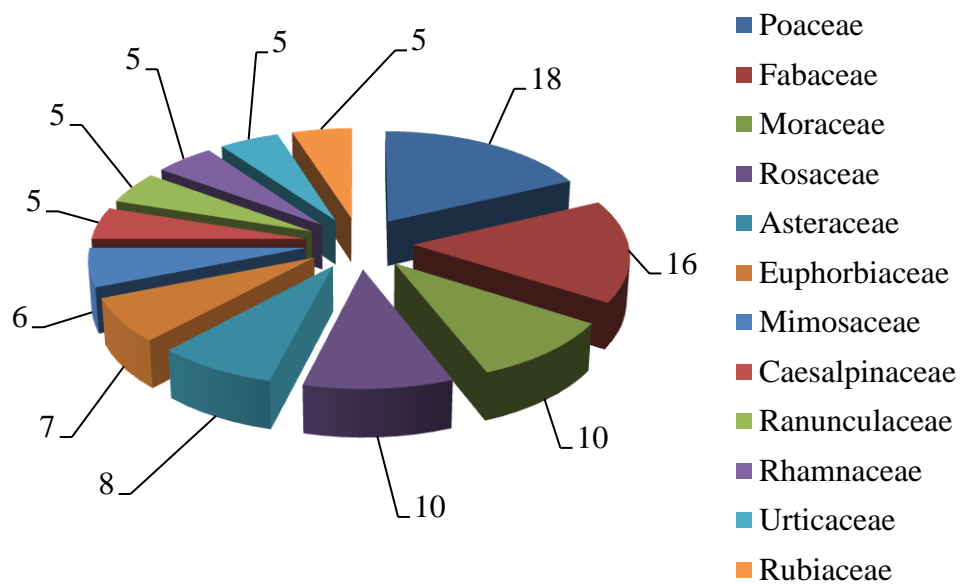


Fig. 2: Families representing highest number of fodder plant species

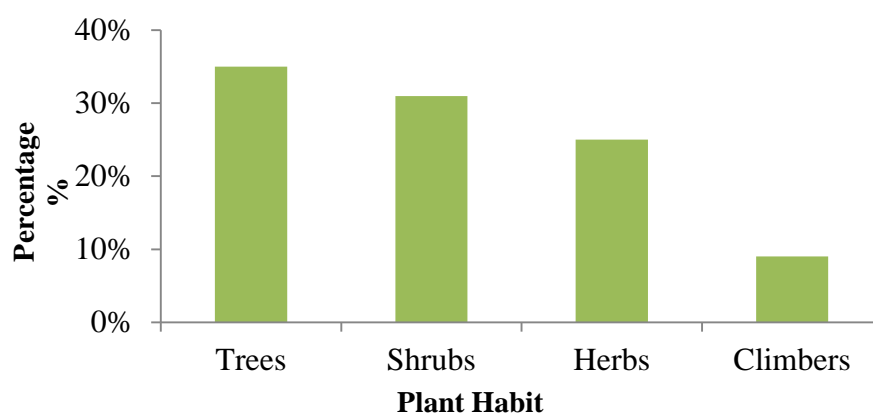


Fig. 3: Habit base diversity of fodder plant species

Economic importance

Besides fodder value, there are many fodder species used as fuel, wild edible, medicinal, timber, religious, making agricultural tools and fiber by the inhabitants. Of the total species,

50% species are used as fuel, 30% as medicinal, 7% as timber, 6% as agricultural implements, 5% as religious and 2% as fiber (Table 1, 2 and Fig. 4). In the percent distribution of plant part of different species being used leaf were most commonly used part (48%) followed by wood (27%), fruit, whole plant (6% each), bark, root (4% each), (4%), flower, seed (2% each) and tuber, stem latex (1% each) (Fig. 5).

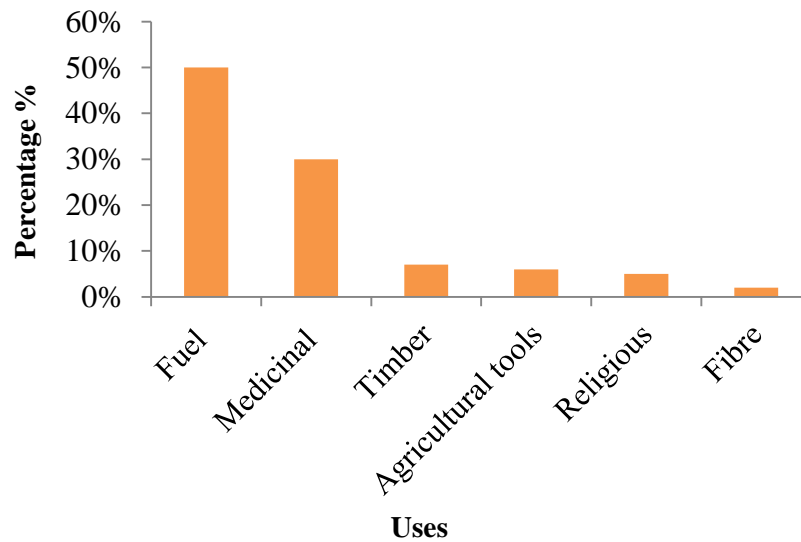


Fig. 4: Multipurpose uses of fodder plant species

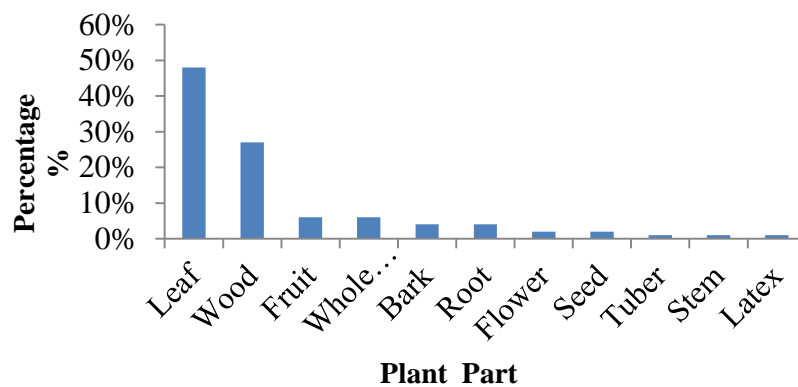


Fig. 5: Graphical representation of plant part used

Utilization pattern

Utilization pattern of fodder species varied from season to season. Of the total, 41% species were used in winter, 38% in summer and 21% throughout the year. Shrubs and climbers were used as fodder (Mostly sheep and goat). In rainy season, mostly grasses, climbers and herbs were used as fodder (Table- 2).

In present study total 210 species of fodder reported in Betalghat Block of Nainital district, Western Himalaya. Earlier studies support our study i.e. Pant & Samant (2005) reported 94 species of fodder in the Marnula reserve forest of Kumaun West Himalaya, Rawat et al.,

(2011) reported 67 species of fodder in North West Himalaya, India. A total of 46 species of fodder species found in Srinagar Garhwal Himalaya reported by Kanwal & Joshi (2015).

Conclusion

Majority of the fodder species are used as multipurpose and contributed to the high socio-economic values. Adequate information on diversity and multipurpose uses of fodder plant species of the Betalghat Block of Nainital District, Western Himalayas not available. The present study provides comprehensive information on the diversity, multipurpose uses and availability of fodder plant species for conservation. The use pattern varies from season to season. The variation in use pattern is due to the availability of the species in respective seasons. Prioritization, mass multiplication with afforestation, reforestation and forest rehabilitation is required for the conservation of fodder plant species. There is a need to analyze the nutritive values of fodder species for the identification of quality fodder can also be examine.

Acknowledgements

The authors are thankful to local people, informants for their immense help during the tenure of the study. We are also thankful to Director, Regional Ayurvedic Research Institute (RARI), CCRAS, Thapla, Ranikhet and Head, Department of Botany, Kumaun University, Nainital for providing infrastructure, facilities and encouragement. We are also thankful to IERP, GBPNIHESD, Kosi Katarmal, Almora.

References

- Atkinson, E.T., 1882. Gazetteer of the Himalayan District of the NW Provinces of India. 3(2): 87-266.
- Dhanai, R., Negi. R.S., Parmar. M.K. & Singh. S., 2014. Fuel wood & Fodder Consumption Pattern in Uttarakhand Himalayan Watershed. International Journal of Environmental Biology. 4(1): 35-40.
- Gaur, R.D., 1999. Flora of District Garhwal North- West Himalaya (with Ethnobotanical Notes). Trans Media House, Shri Nagar (Garhwal), India, p. 811.
- Gupta, R.K., 1968. Flora Nainitalensis: A Handbook of the flowering plants of Nainital. Navayug Traders, New Delhi, p. 489.
- Joshi, G.C., & Joshi, P., 2001. Floristic diversity of Tarikhet Block (Kumaun Himalaya). In Plant diversity of the Himalaya. (Eds. Pande, P.C. & Samant, S.S.). Gyanodaya Prakashan, Nainital, p. 221-252.

- Kanwal, K.S. & Joshi, H., 2015. The impact of hydroelectric project development on the ethnobotany of the Alaknanda river basin of Western Himalaya, India. *Eur Asian Journal of Bio Sciences Eurasia J Biosci*, 9: 61-77.
- Khanal, R.C., Subba, D.B., 2001. Nutritional evaluation of leaves from some major fodder trees cultivated in the hills of Nepal. *Animal Feed Science and Technology*, 92:17-32.
- Khan, S., Kishor, K., Upreti, B.M., Kumar, S., Tewari, A., Tewari, L.M., 2013. Fodder trees of Nainital, Oaks, 9: 82-84.
- Negi, S.S., 1977. Fodder trees in Himachal Pradesh. *Ind. For.* 103 (9): 616-622.
- Osmaston, A.E., 1927. A forest flora for Kumaun, Bishen Singh Mahindra Pal Singh, Dehradun, India, p. 605.
- Pandey, N.C., Joshi, G.C., Tewari, L.M., 2016. Ethnobotanical plant diversity of Betalghat region, Kumaun Himalaya. *Biolife*. 4(4): 629-649.
- Pandey, N.C., Bhatt, D., Arya, D., Upreti, B.M., Chopra, N., Joshi, G.C. and Tewari, L.M., 2017. Patterns of Agro-diversity with its Socio-economic Uses at Gagas Valley, Almora, Kumaun Himalaya. *INT J CONSERV SCI*. 8 (2): 317-324.
- Pangtey, Y.P.S. & Rawat, G.S., 1987. A contribution to the ethnobotany of alpine region of Kumaun. *J. Econ. Tax. Bot.*, 11(1): 139-148.
- Pant, S. & Samant, S.S., 2010. Ethnobotanical Observation in the Marnaula Researve Forest of Kumaun, West Himalaya, India. *Ethnobotanical Leaflets* 14: 193-217.
- Purohit, K., Samant, S.S., 1995. Fodder trees and shrubs of Central Himalaya. Gyanoday Prakashan, Nainital, India, p. 116.
- Rao, R.R., 1994. Biodiversity in India, Bishen Singh Mahendra Pal Singh, Dehradun, p. 1-315.
- Rao, R.R., 1989. Ethnobotanical studies in Meghalaya- Some interesting Reports of herbal Medicines. In Jain S.K. ed., *Methods and Approaches in Ethnobotany*. Society of Ethnobotanists, Lucknow, p. 39-47.
- Rawat, Y.S. & Vishvakarma, Subhash C.R., 2011. Pattern of Fodder Utilization in Relation to Sustainability under Indigenous Agroforestry Systems, North-Western Himalaya, India. *Environ. We Int. J. Sci. Tech.* 1-13.
- Roder, W., 1992. Experiences with tree fodder in the temperate regions of Bhutan. *Agroforestry system*. 17: 263-270.
- Roder, W., Rinzin, Gyeltshen T., 2003. *Ficus auriculata*. Its relative importance in Bhutan, Farmer's preference and fodder quality. *Agroforestry system*. 57: 11-17.

- Samant, S.S., Dhar, U., 1997. Diversity, endemism and economic potential of wild edible plants of Indian Himalaya. *International Journal of Sustainable Development and World Ecology* 4: 179-191.
- Samant, S.S. Dhar, U. & Palni, L.M.S., 1998. Medicinal plants of Himalaya, diversity, distribution and potential values. Gyanodaya Prakashan, Nainital, p. 163.
- Samant, S.S. & Palni, L.M.S., 2000. Diversity, Distribution and Indigenous uses of essential oil yielding plants of Indian Himalayan Region. *J. Med. Arom. Plant. Sci.* 4: 671-684.
- Samant, S.S. & Pant, S., 2003. Diversity distribution pattern and Traditional knowledge of sacred plants of Indian Himalayan Region. *Indian J. Forest.* 26(3): 201-213.
- Samant, S.S., Singh Man, Lal, M. & Pant, S., 2007. Diversity, Distribution and Prioritization of Fodder Species for Conservation in Kullu District, Northwestern Himalaya, India. *Journal of Mountain Science.* 4 (3): 259-274.
- Shahima, Akhter & Piyush, M., 2014., Resource utilization pattern with special reference to Fuel and Fodder in village Chak Chua, Jammu, J & K, India. *International Research Journal of Earth Sciences.* 2(5): 21-27.
- Silverman, D., 2005. *Doing Qualitative Research: A Practical Handbook.* (2nd edition). London: Sage Publications, p. 395.
- Singh, M., Kanstra, L.D., 1981. Utilization of Whole aspen tree material as a roughage component in growing cattle diets. *Journal of Animal Science,* 53: 551-556.
- Singh, J.S., Singh, S.P., Ram, J., 1998. Fodder and Fuel wood resources of Central Himalaya: Problems and solutions. Project report, planning commission, GOI, New Delhi, p. 159.
- Singh, H.S. & Singh, K., 2005. Status and needs of pasture and fodder management in Uttarakhand. In: Bisht J. K. & Srivastava, A.K. (eds), *Road Map for Pasture and Fodder Development in NWHR for Livestock Sustenance.* Vivekananda Parvatiya Krishi Anusandhan Sansthan (ICAR), Almora, Uttarakhand, India, p. 39-64.
- Subha, D.B., Tamang, P.M., Tamang, B.B., 1994. Seasonal Variation in the Proximate Principales of Some Common tree fodders in the Eastern Hills of Nepal. *Veterinary Review.* 9 (2) & 10 (1): 23-26.
- Tewari, Lalit M., Pangtey, Y.P.S., Tewari, G., 2010. *Biodiversity Potentials of the Himalaya.* Gyanodaya Prakashan, Nainital, p. 574.
- Uniyal, B.B., Sharma, J.R. Choudhary, U, Singh, D.K., 2007 *Flowering Plants of Uttarkhand (A Checklist).* Bishan Singh Mahendra Pal Singh, Dehradun, p. 404.

- Vishvakarma, S.C.R., Kuniyal, J.C., Singh, G.S., 1998. Indigenous Agroforestry System of North Western Himalaya. Research for mountain Development some Initiatives and Accomplishments, Gyanodaya Prakashan, Nainital, p. 99-118.
- Yadav, R.P. & Bisht, J.K., 2013. Agroforestry: A way to conserve MPTs in North Western Himalaya. Research Journal of Agriculture and Forestry Sciences. 1(9): 8-13.

Table 1: Diversity of Fodder plants of Betalghat Block, Nainital District, Western Himalaya

S.No.	Botanical Name	Local Name	Family	Habit	Part Use	Other uses
1.	<i>Barleria cristata</i> L.	Jhinti	Acanthaceae	H	Lf	M
2.	<i>Dicliptera bupleuroides</i> Nees	Kawgori	Acanthaceae	H	Lf	M
3.	<i>Lepidagathis cuspidata</i> Ness	Kandya	Acanthaceae	H	Lf	–
4.	<i>Strobilanthus atropurpureus</i> Nees	Jimla	Acanthaceae	H	Lf	–
5.	<i>Acer oblongum</i> Wall.	Putali	Aceraceae	T	Lf, Wd	Fu
6.	<i>Achyranthus aspera</i> L.	Apamarg	Amaranthaceae	H	Lf, Rt, Sd	M
7.	<i>Achyranthus bidentata</i> Blume.	Apamarg	Amaranthaceae	H	Lf, Rt, Sd	M
8.	<i>Aerva sanguinolenta</i> (L.) Bl.	Saji	Amaranthaceae	H	Lf	Re
9.	<i>Cyathula tomentosa</i> (Roth) Moq.	Chirchita	Amaranthaceae	Sh	Lf	–
10.	<i>Deeringia amaranthoides</i> (Lamk.) Merr.	Kali Jhar	Amaranthaceae	Sh	Lf	–
11.	<i>Pistacia integerrima</i> Sw.	Kakar	Anacardiaceae	T	Lf, Wd	Fu, Ti
12.	<i>Rhus cotinus</i> L.	Jal Thunga	Anacardiaceae	Sh	Lf, Wd	M, Fu
13.	<i>Rhus parviflora</i> Roxb. ex DC.	Timu	Anacardiaceae	Sh	Lf, Br, Fr, Wd	M, Fu
14.	<i>Semecarpus anacrdium</i> L.f.	Bhilwa	Anacardiaceae	T	Lf, Wd	Fu
15.	<i>Carissa opaca</i> Stapf ex Haines	Rebuli	Apocynaceae	Sh	Lf, Fr, Wd	M, Fu
16.	<i>Holarrhena antidysentrica</i> (L.) Wall.	Kwera	Apocynaceae	T	Lf	Fu
17.	<i>Ichnocarpus frutescens</i> (L.) Br.	Kali Dudhi	Apocynaceae	Cl	Lf	M
18.	<i>Phoenix humilis</i> Royle	Thakal	Arecaceae	T	Lf	–
19.	<i>Hedera nepalensis</i> K. Koch	Matiyari	Araliaceae	Cl	Lf	–
20.	<i>Cryptolepis buchanani</i> Roem. & Schult.	Dudhi-Bel	Asclepiadaceae	Cl	Lf, Br	M
21.	<i>Asparagus adscendens</i> Roxb.	Shatavar	Asparagaceae	Sh	Lf, Rt	M

22.	<i>Asparagus curillus</i> Buch.-Ham.ex Roxb.	Kariu	Asparagaceae	Sh	Lf	M
23.	<i>Artemisia nilagirica</i> (Cl.) Pamp.	Titpati	Asteraceae	Sh	Lf, Rt	M, Re
24.	<i>Bidens bipinnata</i> L.	Arka-Jhar	Asteraceae	H	Lf	-
25.	<i>Bidens pilosa</i> L.	Kumeri	Asteraceae	H	Lf	-
26.	<i>Eupatorium adenophrum</i> Spreng.	Kala Basinga	Asteraceae	H	Lf	-
27.	<i>Galinsoga parviflora</i> Cav.	Marchiya Ghass	Asteraceae	H	Lf	M
28.	<i>Inula cappa</i> (Buch.-Ham. ex D.Don) DC.	Pushkar-mool	Asteraceae	H	Lf, Rt, Wd	M
29.	<i>Inula cuspidata</i> (DC.) Clarke.	Jhuri	Asteraceae	H	Lf	-
30.	<i>Leucomeris spectabilis</i> D.Don	Pandwa	Asteraceae	T	Lf, Wd	Fu
31.	<i>Berberis asiatica</i> Roxb.	Kilmora	Berberidaceae	Sh	Lf, Rt, Br, Fr, Wd	M, Fu
32.	<i>Alnus nepalensis</i> D. Don	Utis	Betulaceae	T	Lf, Wd	Fu, At
33.	<i>Bombax ceiba</i> L.	Semal	Bombacaceae	T	Lf, Fl, Fr, Wd	Ti, Fu, Fb
34.	<i>Cordia obliqua</i> Willd.	Bairala	Ehretiaceae	T	Lf, Wd	Fu
35.	<i>Cordia vestita</i> Hook.f & Thoms.	Lasora	Ehretiaceae	T	Lf, Wd	Fu
36.	<i>Ehretia acuminata</i> R.Br.	Pudila	Ehretiaceae	T	Lf, Wd	Fu
37.	<i>Ehretia laevis</i> Roxb.	Chamror	Ehretiaceae	T	Lf, Wd	Fu
38.	<i>Sarcococca saligna</i> (D.Don) Muell.-Arg.	Satpura	Buxceaeae	Sh	Lf	-
39.	<i>Bauhinia purpurea</i> L.	Kweryal	Caesalpinaceae	T	Lf, Wd	Fu
40.	<i>Bauhinia retusa</i> Buch.-Ham. ex Roxb.	Kandela	Caesalpinaceae	T	Lf, Wd	Fu
41.	<i>Bauhinia vahlii</i> (Wt. & Arn.) Benth.	Malujhan	Caesalpinaceae	Cl	Lf, St, Wd	M, Fu
42.	<i>Bauhinia variegata</i> L.	Kanchnar	Caesalpinaceae	T	Lf, Br, Wd	M, Fu, At
43.	<i>Caesalpinia decapetala</i> (Roth.) Alston.	Karaunj	Caesalpinaceae	Sh	Lf	-
44.	<i>Lonicera quinquelocularis</i> Hardw.	Bheida Kukri	Caprifoliaceae	Sh	Lf, Wd	Fu

45.	<i>Viburnum continifolium</i> D.Don	Tirmuya	Caprifoliaceae	Sh	Lf, Wd	Fu
46.	<i>Viburnum coriaceum</i> Blume.	Tirmu	Caprifoliaceae	Sh	Lf, Wd	Fu
47.	<i>Viburnum mullaha</i> Buch.-Ham ex D. Don	Tirmu	Caprifoliaceae	Sh	Lf, Wd	Fu
48.	<i>Stellaria media</i> (L.) Vill.	Badyau	Caryophyllaceae	H	Wp	M
49.	<i>Capparis zeylanica</i> L.	Kiari	Capparidaceae	Sh	Lf, Fr	M
50.	<i>Euonymus pendulus</i> Wall.	Bhambeli	Celastraceae	T	Lf, Wd	Fu
51.	<i>Anogeissus latifolia</i> Wall.	Bakla	Combretaceae	T	Lf, St, Br, Wd	M, Fu, Ti
52.	<i>Terminalia alata</i> Roxb.	Saij	Combretaceae	T	Lf, Wd	Fu, Ti
53.	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Bahera	Combretaceae	T	Lf, Fr, Wd	M, Fu
54.	<i>Terminalia chebula</i> Retz.	Harar	Combretaceae	T	Lf, Fr, Wd	M, Fu
55.	<i>Ipomoea purpurea</i> (L.) Roth.	Bharad	Convolvulaceae	H	Lf	–
56.	<i>Porana paniculata</i> Roxb.	Musi Bel	Convolvulaceae	Cl	Lf	–
57.	<i>Coriaria nepalensis</i> Wall.	Makhol	Coriariaceae	Sh	Lf, Wd	Fu
58.	<i>Cornus macrophylla</i> Wall.	Khagsi	Cornaceae	T	Lf, Wd	Fu
59.	<i>Cornus oblonga</i> Wall.	Gauntia	Cornaceae	T	Lf, Wd	Fu
60.	<i>Melothria heterophylla</i> (Lour.) Cogn.	Gwalkakri	Cucurbitaceae	Cl	Lf	–
61.	<i>Trichosanthes bracteata</i> (Lam.) Voigt.	Indrayan- Bel	Cucurbitaceae	H	Lf	–
62.	<i>Carex cruciata</i> Wahlenb.	Krash	Cyperaceae	H	Wp	–
63.	<i>Cyperus niveus</i> Retz.	Ghas	Cyperaceae	H	Wp	–
64.	<i>Cyperus paniceus</i> (Rottb.)Boeck.	Ghas	Cyperaceae	H	Wp	–
65.	<i>Dioscorea bellophylla</i> (Prain) Haines	Jangali Gethi	Dioscoreaceae	Cl	Lf, Tb	M
66.	<i>Dioscorea deltoidea</i> Wall. ex Griseb.	Gethi	Dioscoreaceae	Cl	Lf, Tb	M
67.	<i>Shorea robusta</i> Gaertn. f.	Sal	Dipterocarpaceae	T	Lf, Wd	M, Fu, Ti

68.	<i>Elaeagnus parvifolia</i> Wall. ex Royle	Gewai	Elaeagnaceae	Sh	Lf, Wd	Fu
69.	<i>Bridelia retusa</i> (L.) Spreng.	Kagroli	Euphorbiaceae	T	Lf, Wd	Fu
70.	<i>Emblica officinalis</i> Gaertn.	Amla	Euphorbiaceae	T	Lf, Fr, Wd	M, Fu, Re
71.	<i>Euphorbia geniculata</i> Ort.	Dudhi	Euphorbiaceae	H	Lf, Lt	M
72.	<i>Euphorbia helioscopia</i> L.	Dudhi	Euphorbiaceae	H	Lf	–
73.	<i>Euphorbia ligularia</i> Roxb.	Suin	Euphorbiaceae	Sh	Lf, Lt	M
74.	<i>Glochidion velutinum</i> Wight.	Gobar Mau	Euphorbiaceae	T	Lf, Wd	Fu
75.	<i>Mallotus philippinensis</i> (Lamk) Muell.-Arg.	Riyoni	Euphorbiaceae	T	Lf, Wd	Fu, Ti
76.	<i>Crotalaria tetragona</i> Roxb.	Phatphatiya	Fabaceae	H	Lf	–
77.	<i>Dalbergia sissoo</i> Roxb.	Sisham	Fabaceae	T	Lf, Fl, Wd	M, Fu, Ti, At
78.	<i>Desmodium elegans</i> DC.	Chamlai	Fabaceae	Sh	Lf, Wd	M, Fu
79.	<i>Desmodium concinnum</i> DC.	Sakina	Fabaceae	Sh	Lf	Fu
80.	<i>Flemingia bracteata</i> (Roxb) ex Aiton	Salprani	Fabaceae	H	Lf	–
81.	<i>Flemingia fruticulosa</i> Wall.	Salprani	Fabaceae	Sh	Lf	–
82.	<i>Indigofera gerardiana</i> Wall. ex Baker	Sakena	Fabaceae	Sh	Lf, Fl, Wd	M, Fu
83.	<i>Indigofera pulchella</i> Roxb.	Sakena	Fabaceae	Sh	Lf, Fl, Wd	M, Fu
84.	<i>Lespedeza gerardiana</i> Garh. Ex Baker	Sakena	Fabaceae	Sh	Lf	–
85.	<i>Millettia extensa</i> (Benth.)Bakers.	Gaunji	Fabaceae	Cl	Lf	–
86.	<i>Pueraria lobata</i> (Willd.) Ohwl.	Bilaikand	Fabaceae	Sh	Lf	–
87.	<i>Pueraria tuberosa</i> (Roxb. ex Willd.) DC.	Bilaikand	Fabaceae	Sh	Lf, Rt	M
88.	<i>Ougeinia oojeinensis</i> (Roxb.) Hochr.	Sandan	Fabaceae	T	Lf, Br, Wd	M, Fu, Ti, At
89.	<i>Shuteria involucrata</i> (Wall.) Wt. & Arn.	Goyitiya	Fabaceae	H	Lf	–
90.	<i>Trifolium repens</i> L.	Tipatiya	Fabaceae	H	Wp	M

91.	<i>Vigna vexillata</i> (L.) Rich.	Machali	Fabaceae	H	Lf, Rt	–
92.	<i>Quercus glauca</i> Thunb.	Falyat	Fagaceae	T	Lf, Wd	Fu
93.	<i>Quercus leucotrichophora</i> A. Camus	Banj	Fagaceae	T	Lf, Wd	Fu, At
94.	<i>Flacourtia indica</i> (Burm.f) Merr.	Kangu	Flacourtiaceae	T	Lf, Wd	Fu
95.	<i>Xylosma longifolia</i> Clos.	Gardar	Flacourtiaceae	T	Lf, Wd	Fu
96.	<i>Aesulus indica</i> Colebr. ex Comb.	Jangli Pangar	Hippocastanaceae	T	Lf, Fr, Wd	M, Fu
97.	<i>Deutzia staminea</i> R.Br. ex Wall	Gughtai	Hydrangeaceae	Sh	Lf, Wd	Fu
98.	<i>Hypericum oblongifolium</i> Choisy.	Obani	Hypericaceae	Sh	Lf	–
99.	<i>Colebrookia oppositifolia</i> J. E. Sm.	Bursong	Lamiaceae	Sh	Lf, Rt	M
100.	<i>Scutellaria scandense</i> Buch.- Ham.ex D. Don	Kappu	Lamiaceae	H	Lf	–
101.	<i>Litsea umbrosa</i> Nees	Garbijar	Lauraceae	T	Lf, Wd	Fu
102.	<i>Persea gamblei</i> (King ex Hook.f.) Kosterm.	Kaula	Lauraceae	T	Lf, Wd	Fu
103.	<i>Reinwardtia indica</i> Dumort.	Piuli	Linaceae	Sh	Wp	M
104.	<i>Dendrophthoe falcata</i> (L.f.) Ettingh	Banda	Loranthaceae	Sh	Lf	–
105.	<i>Taxillus vestitus</i> (Wall.) Danser.	Banda	Loranthaceae	Sh	Lf	–
106.	<i>Viscum album</i> L.	Chulu Banda	Loranthaceae	Sh	Lf	–
107.	<i>Woodfordia fruticosa</i> (L.) Kurz.	Kurz	Lythraceae	Sh	Lf, Fl, Rt, Wd	M, Fu, Re
108.	<i>Kydia calycina</i> Roxb.	Pula	Malvaceae	T	Lf, St, Wd	Fu, At
109.	<i>Melia azedarach</i> L.	Batain	Meliaceae	T	Lf, Br, Fl, Sd, Wd	M, Fu, Ti, At
110.	<i>Toona ciliata</i> M. Roem.	Toon	Meliaceae	T	Lf, Wd	Fu, Ti, At
111.	<i>Cissampelos pareira</i> L.	Pari	Menispermaceae	Cl	Lf, Rt	M
112.	<i>Cocculus laurifolius</i> DC.	Til Phokar	Menispermaceae	T	Lf, Wd	Fu
113.	<i>Stephania glabra</i> (Roxb) Mierr.	Ganjaroo	Menispermaceae	Cl	Lf, Tb	M

114.	<i>Tinospora cordifolia</i> (Willd.) Miers	Giloe	Menispermaceae	Cl	Lf, Br	M
115.	<i>Albizia chinensis</i> (Osbeck) Merril in Amer.	Siris	Mimosaceae	T	Lf, Wd	Fu, Ti
116.	<i>Albizia lebbbeck</i> (L.) Benth.	Siris	Mimosaceae	T	Lf, Br, Wd	M, Fu, Ti
117.	<i>Cassia mimosoides</i> L.	Banar	Mimosaceae	H	Lf	–
118.	<i>Leucaena leucocephala</i> (Lam.) De Wit.	Vilaiti baval	Mimosaceae	T	Lf, Wd	Fu
119.	<i>Mimosa himalayana</i> Gamble	Aila	Mimosaceae	Sh	Lf	–
120.	<i>Robinia pseudocasia</i> L.	Robinia	Mimosaceae	T	Lf, Wd	Fu, Ti
121.	<i>Ficus auriculata</i> Lour.	Timil	Moraceae	T	Lf, Fr, Wd	M, Fu, Re
122.	<i>Ficus cunia</i> Buch.-Ham. ex Roxb.	Khunia	Moraceae	T	Lf, Fr, Wd	Fu
123.	<i>Ficus hispida</i> L.f.	Totmila	Moraceae	T	Lf, Fr, Wd	Fu
124.	<i>Ficus hederacea</i> Roxb.	Beduli Bel	Moraceae	Cl	Lf, Fr	–
125.	<i>Ficus nemoralis</i> Wall. ex Miq.	Dhudhi	Moraceae	T	Lf, Fr, Wd	Fu
126.	<i>Ficus palmata</i> Forsk.	Bedu	Moraceae	T	Lf, Fr, Lt, Wd	M, Fu
127.	<i>Ficus subincisa</i> Buch.-Ham. ex Sm.	Chanchari	Moraceae	T	Lf, Fr, Wd	Fu
128.	<i>Ficus racemosa</i> L.	Gular	Moraceae	T	Lf, Fr, Wd	Fu
129.	<i>Morus alba</i> L.	Shatoot	Moraceae	T	Lf, Wd	Fu
130.	<i>Morus serrata</i> Roxb.	Kimu	Moraceae	T	Lf, Wd	Fu
131.	<i>Moringa oleifera</i> L.	Sehjan	Moringaceae	T	Lf, Wd	Fu
132.	<i>Myrica esculenta</i> Buch.-Ham. ex D. Don	Kaphal	Myricaceae	T	Lf, Fr, Br, Wd	M, Fu
133.	<i>Maesa indica</i> (Roxb.) A. DC.	Kangani	Myrsinaceae	Sh	Lf, Wd	Fu
134.	<i>Myrsine africana</i> L.	Ghani	Myrsinaceae	Sh	Lf, Wd	Fu
135.	<i>Fraxinus micrantha</i> L.	Angu	Oleaceae	T	Lf, Wd	Fu, At

136.	<i>Olea grandiflora</i> Wall. ex G. Don	Garur	Oleaceae	T	Lf, Wd	Fu, At
137.	<i>Jasminum dispersum</i> Wall.	Limura	Oleaceae	Sh	Lf	–
138.	<i>Jasminum grandiflorum</i> L.	Jai	Oleaceae	Sh	Lf	–
139.	<i>Oxalis corniculata</i> L.	Chalmori	Oxalidaceae	H	Lf	M
140.	<i>Pittosporum eriocarpum</i> Royle.	Agniu	Pittospraceae	T	Lf, Br	M
141.	<i>Apluda mutica</i> L.	Char Ghas	Poaceae	H	WP	–
142.	<i>Arundinaria falcata</i> Nees	Ringal	Poaceae	H	Lf	–
143.	<i>Arundinella nepalensis</i> Trin.	Tutnaliya Ghas	Poaceae	H	Wp	–
144.	<i>Bromus unioloides</i> H.B. & K.	Ghas	Poaceae	H	Wp	–
145.	<i>Chyrsopogon gryllus</i> (L.) Trin.	Goriya Ghas	Poaceae	H	Wp	–
146.	<i>Cynodon dactylon</i> (L.) Pers.	Doob	Poaceae	H	Wp	M, Re
147.	<i>Dendrocalamus strictus</i> (Roxb.) Nees.	Bans	Poaceae	H	Lf, Wd	At
148.	<i>Heteropogon contortus</i> (L.) Beauv.	Kumeria Ghas	Poaceae	H	Wp	–
149.	<i>Eleusine indica</i> (L.) Gaertn	Jharwa	Poaceae	H	Wp	–
150.	<i>Eulaliopsis binata</i> (Retz.) C.E.Hubb.	Babil Ghas	Poaceae	H	Wp	Re
151.	<i>Imperata cylindrica</i> (L.) P.Beauv.	Siroy Ghas	Poaceae	H	Wp	–
152.	<i>Neyraudia arundinacea</i> (L.) Henr.	Khail Ghas	Poaceae	H	Wp	–
153.	<i>Oplismenus undulatifolius</i> (Ard.) P. Beauv.	Ghas	Poaceae	H	Wp	–
154.	<i>Pennisetum orientale</i> L.C. Rich.	Bimosiya Ghas	Poaceae	H	Wp	–
155.	<i>Polypogon fugax</i> Ness ex Steud.	Ghass	Poaceae	H	Wp	–
156.	<i>Setaria glauca</i> (L.) P. Beauv.	Jangali Koni	Poaceae	H	Wp	–
157.	<i>Setaria verticillata</i> (L.) P.Beauv.	Jangali Koni	Poaceae	H	Wp	–
158.	<i>Themeda anathera</i> (Nees ex Steud.) Hack.	Pirya Ghas	Poaceae	H	Wp	–

159.	<i>Polygonum capitatum</i> Buch.-Ham. ex D. Don	Pathar Phool	Polygonaceae	H	Lf	–
160.	<i>Rumex hastatus</i> D. Don	Bhilmora	Polygonaceae	H	Lf	M
161.	<i>Rumex nepalensis</i> Spr.	Jangli Palak	Polygonaceae	H	Lf	M
162.	<i>Anemone vitifolia</i> Buch.-Ham. ex DC.	Ratanjot	Ranunculaceae	H	Lf	–
163.	<i>Clematis buchiana</i> DC.	Kawali Bel	Ranunculaceae	Cl	Lf	–
164.	<i>Clematis gouriana</i> Roxb.	Kawali Bel	Ranunculaceae	Cl	Lf	–
165.	<i>Clematis grata</i> Wall.	Kawali Bel	Ranunculaceae	Cl	Lf	–
166.	<i>Thalictrum foliolosum</i> DC.	Mamiri	Ranunculaceae	H	Lf, Rt	M
167.	<i>Helinus lanceolatus</i> Brandis.	Kawali	Rhamnaceae	Sh	Lf	–
168.	<i>Rhamnus triqueter</i> (Wall.) Brandis	Ghounta	Rhamnaceae	Sh	Lf, Wd	Fu
169.	<i>Rhamnus virgatus</i> Roxb.	Chedul	Rhamnaceae	Sh	Lf, Wd	Fu
170.	<i>Ziziphus mauritiana</i> Lam.	Ber	Rhamnaceae	Sh	Lf, Fr, Wd	M, Fu
171.	<i>Sageretia filiformis</i> (Roth.) G. Don	Kanya	Rhamnaceae	Sh	Lf, Wd	Fu
172.	<i>Fragaria vesca</i> L.	Bhikafal	Rosaceae	H	Lf, Fr	–
173.	<i>Pyracantha crenulata</i> (D. Don) M. Reom.	Ghingaru	Rosaceae	Sh	Lf, Wd	Fu
174.	<i>Pyrus pashia</i> Buch-Ham. ex D. Don	Jangli Mehal	Rosaceae	T	Lf, Wd	Fu, At
175.	<i>Prinsepia utilis</i> Royle.	Bhekal	Rosaceae	Sh	Lf, Sd, Rt	M
176.	<i>Prunus cerasoides</i> D. Don	Padam	Rosaceae	T	Lf, Br, Sd, Fl, Wd	M, Fu, Re
177.	<i>Rosa macrophylla</i> Lindl.	Kunja	Rosaceae	Sh	Lf, Wd	Fu
178.	<i>Rubus ellipticus</i> Sm.	Hisalu	Rosaceae	Sh	Lf, Fr, Wd	M, Fu
179.	<i>Rubus niveus</i> Thunb.	Kala Hisalu	Rosaceae	Sh	Lf, Wd	Fu
180.	<i>Rubus paniculatus</i> Sm.	Kala Hisalu	Rosaceae	Sh	Lf, Fr	–
181.	<i>Stranvaesia nussia</i> (D. Don) Decne.	Jangli Garhmehal	Rosaceae	T	Lf, Wd	Fu

182.	<i>Adina cordifolia</i> Benth. & Hook.	Haldu	Rubiaceae	T	Lf, Br, Rt, Wd	M, Fu, Ti, At,
183.	<i>Leptodermis lanceolata</i> Wall.	Padera	Rubiaceae	Sh	Lf	M
184.	<i>Randia tetrasperma</i> (Wall. ex Roxb.) Benth. & Hook.f. ex Brandis	Ghari	Rubiaceae	Sh	Lf, Wd	Fu
185.	<i>Spermadictyon suaveolens</i> Roxb.	Padyaru	Rubiaceae	Sh	Lf, Wd	Fu
186.	<i>Wendlandia exserta</i> (Roxb.) DC.	Tirchunia	Rubiaceae	T	Lf, Wd	Fu
187.	<i>Zanthoxylum armatum</i> DC.	Timur	Rutaceae	Sh	Lf, Fr, Wd	M, Fu, Re
188.	<i>Populus ciliata</i> Wall. ex Royle	Popular	Salicaceae	T	Lf, Br, Wd	Fu, Ti, Fb
189.	<i>Salix babylonica</i> L.	Majnu	Salicaceae	T	Lf, Wd	Fu
190.	<i>Osyris arborea</i> Wall.	Kali Jhar	Santalaceae	Sh	Lf, Wd	Fu
191.	<i>Diploknema butyracea</i> Roxb.	Chiura	Sapotaceae	T	Lf, Wd	Fu
192.	<i>Smilax aspera</i> L.	Kukurdar	Smilacaceae	Cl	Lf	–
193.	<i>Firmiana fulgens</i> (Wall. ex Masters) Corner	Budula	Sterculiaceae	T	Lf, Sd	–
194.	<i>Symplocos crataegoides</i> Buch.-Ham.ex D. Don	Lodh	Symplocaceae	T	Lf, Br, Wd	M, Fu
195.	<i>Grewia asiatica</i> L.	Pharsniya	Tiliaceae	T	Lf, Wd	Fu
196.	<i>Grewia optiva</i> J. R. Drumm. ex Burret.	Bhimal	Tiliaceae	T	Lf, Br, Wd	Fu, Fb
197.	<i>Celtis australis</i> L.	Kharik	Ulmaceae	T	Lf, Wd	Fu
198.	<i>Trema politoria</i> Planch.	Kakos	Ulmaceae	Sh	Lf, Wd	Fu
199.	<i>Boehmeria rugulosa</i> Wedd.	Gheti	Urticaceae	T	Lf, Br, Wd	M, Fu
200.	<i>Boehmeria platyphylla</i> D. Don	Siar	Urticaceae	Sh	Lf	–
201.	<i>Debregeasia longifolia</i> (Brum. f.) Wedd.	Tusiara	Urticaceae	Sh	Lf, Wd	Fu
202.	<i>Debregeasia salicifolia</i> (D. Don) Rendle	Tusiara	Urticaceae	Sh	Lf, Wd	Fu
203.	<i>Urtica parviflora</i> Roxb.	Bichhu-ghas	Urticaceae	Sh	Lf	M, Re

204.	<i>Callicarpa macrophylla</i> Vahl.	Daiya	Verbenaceae	Sh	Lf, Fr, Sd	M
205.	<i>Caryopteris foetida</i> (D.Don) P.D.Cantino.	Karwi	Verbenaceae	Sh	Lf	–
206.	<i>Caryopteris wallichiana</i> Schauer.	Moni	Verbenaceae	Sh	Lf, Wd	Fu
207.	<i>Holmskioldia sanguinea</i> Retz.	Kapri, Byoni	Verbenaceae	Sh	Lf, Wd	Fu
208.	<i>Premna barbata</i> Wall. ex Schaner.	Agniu	Verbenaceae	T	Lf, Br, Wd	M, Fu
209.	<i>Parthenocissus semicordata</i> (Wall.) Planch.	Dhyar lagul	Vitaceae	Cl	Lf, Fr	–
210.	<i>Tetrastigma serrulata</i> (Roxb.) Planch.	Malkiya	Vitaceae	Cl	Lf, Fr	–

Abbreviation Used- T- Tree; Sh- Shrub; H- Herb; Cl- Climber; Lf- Leaf; Fr- Fruit; Fl- Flower; St- Stem; Br- Bark; Rt- Root; Sd-Seed; Tb- Tuber; Lt- Latex; Wd- Wood; WP- Whole plant; Fu- Fuel; M- Medicinal; Ti- Timber; Re- Religious; At- Agricultural tools; Fb- Fibre.

Table 2: Occurrence of fodder plant species in different Seasons

Botanical Name	Local Name	Season			Mode of use
		Summer	Rainy	Winter	
<i>Barleria cristata</i> L.	Jhinti	Summer	Rainy	Winter	F
<i>Dicliptera bupleuroides</i> Nees	Kawgori	Summer	Rainy	Winter	F
<i>Lepidagathis cuspidata</i> Ness	Kandya	Summer		Winter	F
<i>Strobilanthus atropurpureus</i> Nees	Jimla	Summer	Rainy	Winter	F
<i>Acer oblongum</i> Wall.	Putli	Summer		Winter	F
<i>Achyranthus aspera</i> L.	Apamarg	Summer	Rainy	Winter	F
<i>Achyranthus bidentata</i> Blume.	Apamarg	Summer	Rainy	Winter	F
<i>Aerva sanguinolenta</i> (L.) Bl.	Saji	Summer	Rainy	Winter	F
<i>Cyathula tomentosa</i> (Roth) Moq.	Chirchita	Summer	Rainy	Winter	F
<i>Deeringia amaranthoides</i> (Lamk.) Merr.	Kali Jhar	Summer	Rainy	Winter	F
<i>Pistacia integerrima</i> Sw.	Kakar	Summer		Winter	F, D
<i>Rhus cotinus</i> L.	Jal Thunga	Summer		Winter	F
<i>Rhus parviflora</i> Roxb. ex DC.	Timu	Summer		Winter	F
<i>Semecarpus anacrdium</i> L.f.	Bhilwa	Summer			F
<i>Carissa opaca</i> Stapf ex Haines	Rebuli	Summer	Rainy	Winter	F
<i>Holarrhena antidysentrica</i> (L.) Wall.	Kwera	Summer		Winter	F
<i>Ichnocarpus frutescens</i> (L.) Br.	Kali Dudhi			Winter	F
<i>Phoenix humilis</i> Royle	Thakal	Summer		Winter	F
<i>Hedera nepalensis</i> K. Koch	Matiyari	Summer	Rainy	Winter	F
<i>Cryptolepis buchanani</i> Roem. & Schult.	Dudhi-Bel	Summer	Rainy	Winter	F
<i>Asparagus adscendens</i> Roxb.	Shatavar	Summer	Rainy	Winter	F
<i>Asparagus curillus</i> Buch.-Ham.ex Roxb.	Kariu	Summer	Rainy	Winter	F
<i>Artemisia nilagirica</i> (Cl.) Pamp.	Titpati	Summer	Rainy	Winter	F
<i>Bidens bipinnata</i> L.	Arka-Jhar	Summer	Rainy	Winter	F
<i>Bidens pilosa</i> L.	Kumeri	Summer	Rainy	Winter	F
<i>Eupatorium adenophrum</i> Spreng.	Kala Basinga			Winter	F
<i>Galinsoga parviflora</i> Cav.	Marchiya Ghass	Summer	Rainy	Winter	F
<i>Inula cappa</i> (Buch.-Ham. ex D.Don) DC.	Pushkar-mool		Rainy	Winter	F
<i>Inula cuspidata</i> (DC.) Clarke.	Jhuri		Rainy	Winter	F
<i>Leucomeris spectabilis</i> D.Don	Pandwa	Summer		Winter	F
<i>Berberis asiatica</i> Roxb.	Kilmora	Summer	Rainy	Winter	F
<i>Alnus nepalensis</i> D. Don	Utis			Winter	F
<i>Bombax ceiba</i> L.	Semal	Summer			F
<i>Cordia obliqua</i> Willd.	Bairala	Summer		Winter	F

<i>Cordia vestita</i> Hook.f & Thoms.	Lasora	Summer		Winter	F
<i>Ehretia acuminata</i> R.Br.	Pudila	Summer		Winter	F
<i>Ehretia laevis</i> Roxb.	Chamror	Summer		Winter	F
<i>Sarcococca saligna</i> (D.Don) Muell.-Arg.	Satpura			Winter	F
<i>Bauhinia purpurea</i> L.	Kwieryal	Summer		Winter	F
<i>Bauhinia retusa</i> Buch.-Ham. ex Roxb.	Kandela	Summer		Winter	F
<i>Bauhinia vahlii</i> (Wt. & Arn.) Benth.	Malujhan	Summer		Winter	F
<i>Bauhinia variegata</i> L.	Kanchnar	Summer		Winter	F
<i>Caesalpinia decapetala</i> (Roth.) Alston.	Karaunj	Summer		Winter	F
<i>Lonicera quinquelocularis</i> Hardw.	Bheida Kukri	Summer		Winter	F
<i>Viburnum continifolium</i> D.Don	Tirmuya	Summer		Winter	F
<i>Viburnum coriaceum</i> Blume.	Tirmu	Summer		Winter	F
<i>Viburnum mullaha</i> Buch.-Ham ex D. Don	Tirmu	Summer		Winter	F
<i>Stellaria media</i> (L.) Vill.	Badyau			Winter	F
<i>Capparis zeylanica</i> L.	Kiari	Summer		Winter	F
<i>Euonymus pendulus</i> Wall.	Bhambeli	Summer		Winter	F
<i>Anogeissus latifolia</i> Wall.	Bakla	Summer		Winter	F
<i>Terminalia alata</i> Roxb.	Sajj			Winter	F
<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Bahera			Winter	F
<i>Terminalia chebula</i> Retz.	Harar			Winter	F
<i>Ipomoea purpurea</i> (L.) Roth.	Bharad	Summer	Rainy	Winter	F
<i>Porana paniculata</i> Roxb.	Musi Bel	Summer	Rainy		F
<i>Coriaria nepalensis</i> Wall.	Makhol	Summer		Winter	F
<i>Cornus macrophylla</i> Wall.	Khagsi			Winter	F
<i>Cornus oblonga</i> Wall.	Gauntia	Summer		Winter	F
<i>Melothria heterophylla</i> (Lour.) Cogn.	Gwalkakri	Summer	Rainy	Winter	F
<i>Trichosanthes bracteata</i> (Lam.) Voigt.	Indrayan-Bel	Summer	Rainy	Winter	F
<i>Carex cruciata</i> Wahlenb.	Krash	Summer	Rainy	Winter	F
<i>Cyperus niveus</i> Retz.	Ghas	Summer	Rainy	Winter	F
<i>Cyperus paniceus</i> (Rottb.) Boeck.	Ghas	Summer	Rainy	Winter	F
<i>Dioscorea bellophylla</i> (Prain) Haines	Jangali Gethi		Rainy		F

<i>Dioscorea deltoidea</i> Wall. ex Griseb.	Gethi		Rainy		F
<i>Shorea robusta</i> Gaertn. f.	Sal	Summer		Winter	F
<i>Elaeagnus parvifolia</i> Wall. ex Royle	Gewai	Summer	Rainy	Winter	F
<i>Bridelia retusa</i> (L.) Spreng.	Kagroli			Winter	F
<i>Emblica officinalis</i> Gaertn.	Amla	Summer		Winter	F
<i>Euphorbia geniculata</i> Ort.	Dudhi	Summer	Rainy	Winter	F
<i>Euphorbia helioscopia</i> L.	Dudhi			Winter	F
<i>Euphorbia ligularia</i> Roxb.	Suin	Summer			F
<i>Glochidion velutinum</i> Wight.	Gobar Mau	Summer		Winter	F
<i>Mallotus philippinensis</i> (Lamk) Muell.-Arg.	Kmbhal	Summer	Rainy	Winter	F
<i>Crotalaria tetragona</i> Roxb.	Phatphatiya	Summer	Rainy	Winter	F
<i>Dalbergia sissoo</i> Roxb.	Sisham	Summer		Winter	F
<i>Desmodium elegans</i> DC.	Chamlai	Summer	Rainy	Winter	F
<i>Desmodium concinnum</i> DC.	Sakina	Summer	Rainy	Winter	F
<i>Flemingia bracteata</i> (Roxb) ex Aiton	Salprani	Summer	Rainy	Winter	F
<i>Flemingia fruticulosa</i> Wall.	Salprani	Summer	Rainy	Winter	F
<i>Indigofera gerardiana</i> Wall. ex Baker	Sakena	Summer		Winter	F
<i>Indigofera pullchella</i> Roxb.	Sakena	Summer		Winter	F
<i>Lespedeza gerardiana</i> Garh. Ex Baker	Sakena	Summer	Rainy	Winter	F
<i>Millettia extensa</i> (Benth.)Bakers.	Gaunji	Summer	Rainy	Winter	F
<i>Pueraria lobata</i> (Willd.) Ohwl.	Bilaikand	Summer	Rainy	Winter	F
<i>Pueraria tuberosa</i> (Roxb. ex Willd.) DC.	Bilaikand	Summer	Rainy	Winter	F
<i>Ougeinia oojainensis</i> (Roxb.) Hochr.	Sandan	Summer		Winter	F
<i>Shuteria involucrata</i> (Wall.) Wt. & Arn.	Goyitiya	Summer	Rainy	Winter	F
<i>Trifolium repens</i> L.	Tipatiya	Summer	Rainy	Winter	F
<i>Vigna vexillata</i> (L.) Rich.	Machali		Rainy		F
<i>Quercus glauca</i> Thunb.	Falyat	Summer		Winter	F
<i>Quercus leucotrichophora</i> A. Camus	Banj	Summer		Winter	F
<i>Flacourtia indica</i> (Burm.f) Merr.	Kangu	Summer		Winter	F
<i>Xylosma longifolia</i> Clos.	Gardar	Summer		Winter	F
<i>Aesulus indica</i> Colebr. ex Comb.	Jangli Pangar	Summer	Rainy	Winter	D

<i>Hypericum oblongifolium</i> Choisy.	Obani	Summer		Winter	F
<i>Colebrookia oppositifolia</i> J. E. Sm.	Bursong	Summer		Winter	F
<i>Scutellaria scandense</i> Buch.- Ham.ex D. Don	Kappu	Summer	Rainy	Winter	F
<i>Litsea umbrosa</i> Nees	Garbijar	Summer		Winter	F
<i>Persea gamblei</i> (King ex Hook.f.) Kosterm.	Kaula	Summer		Winter	F
<i>Reinwardtia indica</i> Dumort.	Piuli	Summer	Rainy	Winter	F
<i>Dendrophthoe falcata</i> (L.f.) Ettingh	Banda	Summer	Rainy	Winter	F
<i>Taxillus vestitus</i> (Wall.) Danser.	Banda	Summer	Rainy	Winter	F
<i>Viscum album</i> L.	Chulu Banda	Summer	Rainy	Winter	F
<i>Woodfordia fruticosa</i> (L.) Kurz.	Dhaura	Summer		Winter	F
<i>Kydia calycina</i> Roxb.	Pula	Summer		Winter	F
<i>Melia azedarach</i> L.	Batain	Summer			F
<i>Toona ciliata</i> M. Roem.	Toon	Summer		Winter	F
<i>Cissampelos pareira</i> L.	Pari	Summer	Rainy	Winter	F
<i>Cocculus laurifolius</i> DC.	Til Phokar			Winter	F
<i>Stephania glabra</i> (Roxb) Mierr.	Ganjaroo	Summer	Rainy	Winter	F
<i>Tinospora cordifolia</i> (Willd.) Miers	Giloe	Summer	Rainy	Winter	F
<i>Albizia chinensis</i> (Osbeck) Merrill in Amer.	Siris	Summer		Winter	F
<i>Albizia lebbek</i> (L.) Benth.	Siris	Summer		Winter	F
<i>Cassia mimosoides</i> L.	Banar		Rainy		F
<i>Leucaena leucocephala</i> (Lam.) De Wit.	Vilaiti baval	Summer		Winter	F
<i>Mimosa himalayana</i> Gamble	Aila	Summer	Rainy	Winter	F
<i>Robinia pseudocasia</i> L.	Robinia	Summer			F
<i>Ficus auriculata</i> Lour.	Timil	Summer		Winter	F
<i>Ficus cunia</i> Buch.-Ham. ex Roxb.	Khunia	Summer		Winter	F
<i>Ficus hispida</i> L.f.	Totmila	Summer		Winter	F
<i>Ficus hederacea</i> Roxb.	Beduli Bel	Summer	Rainy	Winter	F
<i>Ficus nemoralis</i> Wall. ex Miq.	Dhudhi	Summer	Rainy	Winter	F

<i>Ficus palmata</i> Forsk.	Bedu	Summer			F, D
<i>Ficus subincisa</i> Buch.-Ham. ex Sm.	Chanchari			Winter	F
<i>Ficus racemosa</i> L.	Gular	Summer			F
<i>Morus alba</i> L.	Shatoot	Summer			F, D
<i>Morus serrata</i> Roxb.	Kimu	Summer		Winter	F, D
<i>Moringa oleifera</i> L.	Sehjan	Summer		Winter	F
<i>Myrica esculenta</i> Buch.-Ham. ex D. Don	Kaphal	Summer		Winter	F
<i>Maesa indica</i> (Roxb.) A. DC.	Kangani	Summer		Winter	F
<i>Myrsine africana</i> L.	Ghani	Summer		Winter	F
<i>Fraxinus micrantha</i> L.	Angu	Summer		Winter	F, D
<i>Olea grandiflora</i> Wall. ex G. Don	Garur	Summer		Winter	F
<i>Jasminum dispernum</i> Wall.	Limura	Summer	Rainy	Winter	F
<i>Jasminum grandiflorum</i> L.	Jai	Summer	Rainy	Winter	F
<i>Oxalis corniculata</i> L.	Chalmori	Summer	Rainy	Winter	F
<i>Pittosporum eriocarpum</i> Royle.	Agniu	Summer	Rainy	Winter	F
<i>Apluda mutica</i> L.	Char Ghas	Summer	Rainy	Winter	F, D
<i>Arundinaria falcata</i> Nees	Ringal	Summer	Rainy	Winter	F
<i>Arundinella nepalensis</i> Trin.	Tutnali Ghas	Summer	Rainy	Winter	F, D
<i>Bromus unioloides</i> H.B. & K.	Ghas	Summer	Rainy	Winter	F, D
<i>Chrysopogon gryllus</i> (L.) Trin.	Goriya Ghas	Summer	Rainy	Winter	F, D
<i>Cynodon dactylon</i> (L.) Pers.	Doob	Summer	Rainy	Winter	F, D
<i>Dendrocalamus strictus</i> (Roxb.) Nees.	Bans	Summer	Rainy	Winter	F
<i>Heteropogon contortus</i> (L.) Beauv	Kumeri Ghas	Summer	Rainy	Winter	F, D
<i>Eleusine indica</i> (L.) Gaertn	Jharwa		Rainy		F
<i>Eulaliopsis binata</i> (Retz.) C.E.Hubb.	Babil Ghas	Summer	Rainy	Winter	F, D
<i>Imperata cylindrica</i> (L.) P.Beauv.	Siroy Ghas	Summer	Rainy	Winter	F, D
<i>Neyraudia arundinacea</i> (L.) Henr.	Khail Ghas	Summer	Rainy	Winter	F, D
<i>Oplismenus undulatifolius</i> (Ard.) P. Beauv.	Ghas	Summer	Rainy	Winter	F, D
<i>Pennisetum orientale</i> L.C. Rich.	Bimosi Ghas	Summer	Rainy	Winter	F, D
<i>Polypogon fugax</i> Ness ex Steud.	Ghass	Summer	Rainy	Winter	F
<i>Setaria glauca</i> (L.) P. Beauv.	Jangali Koni	Summer	Rainy	Winter	F, D
<i>Setaria verticillata</i> (L.) P.Beauv.	Jangali Koni	Summer	Rainy	Winter	F, D

<i>Themeda anathera</i> (Nees ex Steud.) Hack.	Pirya Ghas	Summer	Rainy	Winter	F, D
<i>Polygonum capitatum</i> Buch.-Ham. ex D. Don	Pathar Phool	Summer	Rainy	Winter	F
<i>Rumex hastatus</i> D. Don	Bhilmora	Summer	Rainy	Winter	F
<i>Rumex nepalensis</i> Spr.	Jangli Palak	Summer	Rainy	Winter	F
<i>Anemone vitifolia</i> Buch.-Ham. ex DC.	Ratanjot	Summer	Rainy	Winter	F
<i>Clematis buchaniana</i> DC.	Kawali Bel	Summer	Rainy	Winter	F
<i>Clematis gouriana</i> Roxb.	Kawali Bel	Summer	Rainy	Winter	F
<i>Clematis grata</i> Wall.	Kawali Bel	Summer	Rainy	Winter	F
<i>Thalictrum foliolosum</i> DC.	Mamiri	Summer	Rainy	Winter	F
<i>Helinus lanceolatus</i> Brandis.	Kawali	Summer	Rainy	Winter	F
<i>Rhamnus triqueter</i> (Wall.) Brandis	Ghounta	Summer	Rainy	Winter	F
<i>Rhamnus virgatus</i> Roxb.	Chedul	Summer	Rainy	Winter	F
<i>Ziziphus mauritiana</i> Lam.	Ber	Summer		Winter	F
<i>Sageretia filiformis</i> (Roth.) G. Don	Kanya	Summer	Rainy	Winter	F
<i>Fragaria vesca</i> L.	Bhikafal	Summer		Winter	F
<i>Pyracantha crenulata</i> (D. Don) M. Reom.	Ghingaru	Summer	Rainy	Winter	F
<i>Pyrus pashia</i> Buch-Ham. ex D. Don	Jangli Mehal	Summer		Winter	F
<i>Prinsepia utilis</i> Royle.	Bhekal	Summer	Rainy	Winter	F
<i>Prunus cerasoides</i> D. Don	Padam			Winter	F
<i>Rosa macrophylla</i> Lindl.	Kunja	Summer	Rainy	Winter	F
<i>Rubus ellipticus</i> Sm.	Hisalu	Summer	Rainy	Winter	F
<i>Rubus niveus</i> Thunb.	Kala Hisalu	Summer	Rainy	Winter	F
<i>Rubus paniculatus</i> Sm.	Kala Hisalu	Summer	Rainy	Winter	F
<i>Stranvaesia nussia</i> (D. Don) Decne.	Jangli Garmehal	Summer		Winter	F
<i>Adina cordifolia</i> Benth. & Hook.	Haldu	Summer		Winter	F
<i>Leptodermis lanceolata</i> Wall.	Padera	Summer	Rainy	Winter	F
<i>Randia tetrasperma</i> (Wall. ex Roxb.) Benth. & Hook.f. ex Brandis	Ghari	Summer		Winter	F
<i>Spermadictyon suaveolens</i> Roxb.	Padyaru	Summer	Rainy	Winter	F
<i>Wendlandia exserta</i> (Roxb.) DC.	Tirchunia	Summer		Winter	F
<i>Zanthoxylum armatum</i> DC.	Timur	Summer	Rainy	Winter	F
<i>Populus ciliata</i> Wall. ex Royle	Popular	Summer		Winter	F
<i>Salix babylonica</i> L.	Majnu	Summer		Winter	F, D
<i>Osyris arborea</i> Wall.	Kali Jhar	Summer	Rainy	Winter	F
<i>Diploknema butyracea</i> Roxb.	Chiura			Winter	F

<i>Deutzia staminea</i> R.Br. ex Wall	Gughtai	Summer	Rainy	Winter	F
<i>Smilax aspera</i> L.	Kukurdar	Summer		Winter	F
<i>Firmiana fulgens</i> (Wall. ex Masters) Corner	Budula	Summer		Winter	F
<i>Symplocos crataegoides</i> Buch.-Ham.ex D. Don	Lodh	Summer		Winter	F
<i>Grewia asiatica</i> L.	Pharsniya			Winter	F
<i>Grewia optiva</i> J. R. Drumm. ex Burret.	Bhimal			Winter	F, D
<i>Celtis australis</i> L.	Kharik	Summer		Winter	F
<i>Trema politoria</i> Planch.	Kakos	Summer		Winter	F
<i>Boehmeria rugulosa</i> Wedd.	Gheti			Winter	F
<i>Boehmeria platyphylla</i> D. Don	Siar	Summer		Winter	F
<i>Debregeasia longifolia</i> (Brum. f.) Wedd.	Tusiara	Summer	Rainy	Winter	F
<i>Debregeasia salicifolia</i> (D. Don) Rendle	Tusiara	Summer	Rainy	Winter	F
<i>Urtica parviflora</i> Roxb.	Bichhu-ghas			Winter	D
<i>Callicarpa macrophylla</i> Vahl.	Daiya	Summer		Winter	F
<i>Caryopteris foetida</i> (D.Don) P.D.Cantino.	Karwi	Summer	Rainy	Winter	F
<i>Caryopteris wallichiana</i> Schauer.	Moni	Summer	Rainy	Winter	F
<i>Holmskioldia sanguinea</i> Retz.	Kapri, Byoni	Summer	Rainy	Winter	F
<i>Premna barbata</i> Wall. ex Schaner.	Agni	Summer		Winter	F
<i>Parthenocissus semicordata</i> (Wall.) Planch.	Dhyar lagul	Summer	Rainy	Winter	F
<i>Tetrastigma serrulata</i> (Roxb.) Planch.	Malkiya	Summer	Rainy	Winter	F

Abbreviations

Uses: F: Fresh; D: Dry