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Documentation of Indigenous Plants Used by Gurung Community of Gorkha District, Central Nepal

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Abstract

The present work documents 80 plant species used by Gurung community of Siranchok, Gorkha district, Central Nepal conducted in 2018. Group discussion was done with 30 respondents including traditional healers and knowledgable persons both male and female. The information collected includes local name, form of use, parts used and uses. Gurung community has been using plant resources since the past and is still dependent on it for their livelihood.

Keywords: *Conservation, Ethnobotany, Plant resources, Traditional healers*

Introduction

Nepal is considered one of the richest countries in terms of indigenous traditional knowledge due to its diversified ecology, geography, and many ethnic communities (Sharma et al., 2009). Most of the rural people directly depend on plant and plant products for meeting their daily requirement where access to government health care and other facilities is lacking (GoN/ MoFSC, 2014, Bhattarai et al., 2006). Gurung is a ethnic group which covers 1.97 percent of total population of Nepal (CBS, 2011). They are found mostly in Syangja, Kaski, Manang, Mustang, Lamjung, Parbat and Gorkha districts of Central Nepal (Manandhar, 2002). Plants fulfill our basic need in the form of large variety of products such as food, fiber, fodder, vegetables, medicinal and aromatic plants, fuelwood, timber, aesthetic and religious. The practice of using plant resources vary according to location, tradition, climatic conditions and vegetation type of the place (Kunwar & Bussmann, 2008).

Previous studies (Coburn 1984; Manandhar, 1987; Pohle, 1990; Bhattarai et al., 2006; Gurung et al., 2008) indicate that very few work has been conducted relating to the utilization of plants by Gurungs in different districts of Nepal. Study in Gorkha district hasn't been explored yet. Due to changing life style, extreme secrecy of traditional healers and negligence of youngsters, the ethnic practice in using folk medicines is declining globally. This work will help in exploring the knowledge on traditional utilization of plants from Gorkha districts practised by Gurung community. Ethnobotanical exploration and documentation of indigenous knowledge needs to be continued so as to preserve traditional knowledge, skill and practices (Kurmi & Baral, 2004; Singh et al., 2012). These studies help in discovering new herbal drugs, new food and fodder, tool in economic development and in conservation of germplasm as well as natural resources.

The major objective is documentation of traditional knowledge and indigenous practices of Gurung community and exhibit the plant made materials used by them in ethnobotanical museum of National Botanical Garden, Godawari, Lalitpur, Nepal and information sharing. Specific objectives are to explore the indigenous plants and plant parts used by people of Gurung community and document the indigenous knowledge, skill and practices of the Gurung people for conservation and utilization.

Materials and Methods

Study area

The study was conducted in Gurung village Siranchok located in Gorkha District (27° 152 - 28°452 N latitude and 84°272 - 84°582 E longitude) with an area of 2505 sq.km. This ethnic group consists of 53,342 population of which male and

female in the district. The climate tropical, temperate and alpine. Rainy season extends from june to september.

Plant species were collected from the study site. The taxonomic characters and other necessary information were noted down. To obtain detail information, the plant specimens collected from the field were displayed during group discussion with 30 respondents mostly including traditional healers and individually to knowledgeable persons both male and female. The information collected included local name of plants, uses, form of use and parts used.

Voucher specimens were collected during field visit for herbarium preparation. They were identified using standard literatures (Hara et al., 1978, 1982; Hara & Williams, 1979; Press et al., 2000) and comparing specimens at National Herbarium and Plant Laboratories (KATH), Godawari, Lalitpur, Nepal. The herbarium specimens are deposited in KATH. The graphs were prepared using MS-Excel.

Results and Discussion

Altogether 80 plant species belonging to 72 genera of 42 families were collected and their local name, uses, parts used and form of uses were noted down (Appendix 1). Two species of pteridophyte and remaining 76 species were of dicots among which 25 herbs, 16 shrubs, 29 trees, 6 climbers and 2 species belong to monocots. The family Compositae (10 species) represented the highest number of plants followed by Euphorbiaceae (5 species), Lamiaceae (5 species), Moraceae (5 species) and Combretaceae (4 species).

Most of the plants species were used for medicinal purposes (45 species), fodder (34 species) followed by fruit edible (16 species) and others as shown in figure 1. Some of the common medicinal uses were in stomach problems, toothache, fever, increase lactation, cut and wounds, eye problems etc. Three of the plant species were used for curing animal diseases. Several species were found to be used for more than one purpose.

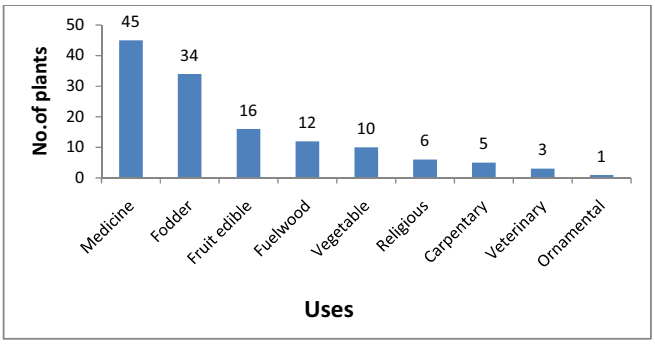

Figure 1: Number of plants used by Gurung people for various purposes

Among the different parts, leaves of most of the plants (30 species) were used by Gurung people for various purposes followed by fruit (16 species) and others as shown in figure 2. The study revealed that whole plant parts like root, rhizome, branches, leaves, fruit, flower, bark, stem, seed, tuber, flower and tender shoots were used for medicinal purpose.

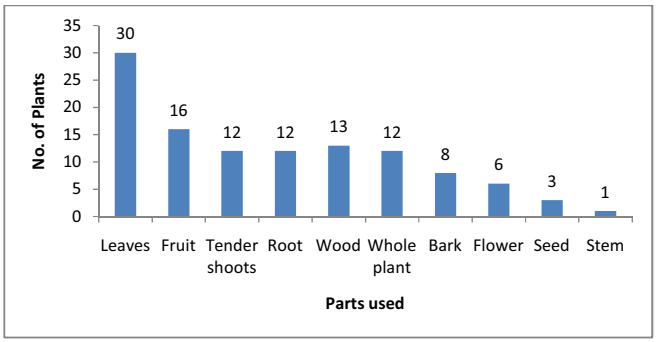

Figure 2: Number of plant parts used by Gurung people

Gurung community fulfill their different requirements from plants (Manandhar, 2002). Various plant parts are consumed as food and wild food plants are used in a variety of ways such as vegetables, pickles, juices, beverages or in fermentation of alcohol. Sales of these plant resources are important source of income generation for poor people (Rajbhandary & Winkler, 2015). Due to these issues of accessibility and other socio-economic and cultural factors, local people rely more on traditional forms of medicine (Bhattarai et al., 2006). 41 species of wild food plants documented during this five-year research period will be an important tool for the future bioprospecting research in Manang (Bhattarai et al., 2009) in different villages of Manang district. In this study we have recorded 30 plant species used as food plants from Gorkha district. A study by Malla et al., 2014 showed

that 61 plant species were used by Gurung, Magar and Majhi of Parbat district for curing various human diseases.

Conclusion

Present study shows that people of Gurung community still practice using wild plants for various purposes most importantly as wild edible fruits and for medicinal value. Though the people mostly dependent on modern medicine but still they practice the traditional healing methods as basic treatment for prevalent diseases in the study area. Hence, it is necessary to properly document the indigenous knowledge for future record. Ex-situ and in-situ conservation of traditionally important plants should be promoted. Further study of other places is also recommended.

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Appendix 1

S.N.	Scientific Name	Family	Local Name	Gurung Name	Part used	Form of use	Uses	Life form
1	*Achyranthes bidentata* Blume	Amaranthaceae	दतिवन	दतिवान	Root	Paste	Medicine in stomach ache	H
2	*Ageratina adenophora* (Spreng.) R.M.King & H.Rob.	Compositae	वनमारा	वनमास्या	Root	Juice	Medicine in toothache, cuts and wounds	H
3	*Ageratum conyzoides* (L.) L.	Compositae	गंदे	गंदे	Whole plant	Paste	Medicine in cuts to stop bleeding and insect bites, fodder	H
4	*Alnus nepalensis* D. Don	Betulaceae	उतीस	क्युँसी/म्युँसी	Leaves, Wood		Fuelwood, fodder and making furniture	T
5	*Amaranthus spinosus* L.	Amaranthaceae	लट्टे	लुँडे	Tender shoots, Root	Root juice	Tender shoots eaten as vegetable, given to animals in urine trouble	H
6	*Anogeissus latifolia* (Roxb. ex DC.) Wall,ex Guillen. &Pesr.	Combretaceae	बोट धयाँरो, हडैं	बोट धयाँरो	Bark	Juice	Medicine in stomach ache and cough	T
7	*Antidesma bunius* (L.) Spreng.	Phyllanthaceae	अर्चल		Leaves	Leave juice	Medicine in wounds, fodder	T
8	*Argyreia hookeri* C.B.Clarke	Convolvulaceae	सेखरि लहरा		Root	Grinded root	Medicine in broken bones, liquid flow from uterus	C
9	*Arisaema tortuosum* (Wall.) Schott	Araceae	गर्बो	भुरी मकै	Tender shoots		Eaten as vegetable	H
10	*Artemisia indica* Willd.	Compositae	तीतेपाती	पाती	Leaves	Juice	Medicine in fracture, muscle pain, sprain and in stomachic, religious use	H
11	*Artocarpus lacucha* Buch.-Ham.	Moraceae	बडहर	बटल	Fruit, Leaves		Fruit edible and fodder	T
12	*Asparagus filicinus* Buch.-Ham. ex D.Don	Asparagaceae	कुरिलो	पुजु तारो	Root	Root juice	Given to animals for production of more milk	H
13	*Bambusa tulda* Roxb.	Poaceae	बाँस	रीँ दी	Wood, tender shoots		Tender shoots eaten as vegetable, wood in carpentary	
14	*Bauhinia variegata* L.	Leguminosae	कोइरालो	कोइरालो	Young flower		Medicine in dysentry and other stomach problems, young flower are eaten as vegetable and pickle	T
15	*Bidens pilosa* L.	Compositae	कुरो	छिन्दारी	Whole plant	Juice	Medicine in cuts and wounds	H
16	*Callicarpa macrophylla*Vahl	Lamiaceae	दहिचामले	गुरिन	Root	Juice	Medicine of root juice in cuts and wounds, fruit edible, fuelwood, fodder	S
17	*Castanopsis indica (*Roxb. ex Lindl.) A.DC.	Fagaceae	कटुस	भैकसी	Tender shoots	Juice	Medicine in stomach problems, seeds edible, fodder, fuelwood	T
18	*Centella asiatica* (L.) Urb.	Apiaceae	घोडतापे	घोडतापे	Whole plant		Medicine in stomachic, as coolent , cuts and wounds.	H
19	*Cheilanthes albomarginata* C.B. Clarke	Pteridaceae	रानिसिन्का	रानिसिंगा	Tender shoots, Root	Juice	Medicine in stomach problems such as dysentry and gastric	P

S.N.	Scientific Name	Family	Local Name	Gurung Name	Part used	Form of use	Uses	Life form
20	*Cheilocostus speciosus* (J.Koenig) C.D.Specht	Costaceae	बेतलौरी		Whole plant	Juice	Medicine as coolent	H
21	*Clerodendrum indicum* (L.) Kuntze	Lamiaceae	भाँटी	ढाप्रे	Leaves		Fodder	S
22	*Colebrookea oppositifolia* Sm.	Lamiaceae	धुर्सील	धुर्सुल	Leaves	Juice	Medicine in fever and eye problem, fodder, fuelwood	S
23	*Colocasia* sp.	Araceae	जलिक्रो	जलको	Tender leaves	Paste	Medicine in wasps bite and decrease swelling, tender leaves eaten as vegetable	H
24	*Conyza japonica* (Thunb.) Less. ex Less.	Compositae	सल्लाह झार	सल्लानो	Whole plant	Juice	Medicine in cuts and wounds, fodder	H
25	*Crateva unilocularis* Buch.-Ham.	Capparaceae	सिप्लेगान		Tender shoots, Leaves	Juice of leaves	Medicine for high blood pressure, tender shoots consumed as pickle after boiling and dried vegetable (gundruk)	T
26	*Datura metel* L.	Solanaceae	धतुरो	धतुर	Fruit, Leaves	Fried fruit, Leaves paste	Medicine of leaves paste in skin allergy, Fried fruit decoction applied in wounds	S
27	*Daucus carota* L.	Apiaceae	गाँजे झार		Leaves, Root		Root eaten as vegetable, fodder	H
28	*Deparia boryana* (Willd.) M. Kato	Athyriaceae	कालो न्यूरो		Tender shoot		Tender shoots used as vegetable	P
29	*Dioscorea bulbifera* L.	Dioscoreaceae	गीट्टा	कामलो	Tuber	Boiled tuber	Fodder, tuber edible after boiling	C
30	*Dioscorea deltoidea* Wall. ex Griseb.	Dioscoreaceae	भ्याकुर	तेन्द्रो	Tuber	Boiled tuber	Tuber and fruit is eaten after boiling, bark is allergic	C
31	*Diploknema butyracea* (Roxb.) H. J. Lam	Sapotaceae	चिउरी	पेंजे	Fruit, Seed, Wood		Fruit edible, butter extraction from seeds, fodder, fuelwood	T
32	*Drymaria cordata* subsp. *diandra* (Blume) J. A. Duke	Caryophyllaceae	अभिजालो		Leaves	Leave juice	Medicine in sinusitis leaves are burnt and then juice is dropped in nose,also useful in eye problems	H
33	*Elephantopus scaber* L.	Compositae	ससरबुटी	चेत्रेता	Root	Decoction	Medicine in stomach problems	H
34	*Falconeria insignis* Royle	Euphorbiaceae	खिर्रो	खिर्रो	Leaves, Stem	Juice	Used as fish poison, making agricultural implements	T
35	*Ficus lacor* Buch.-Ham.	Moraceae	काभ्रो	घोगी	Flower, Leaves		Extraction of cotton from flower, fodder	T
36	*Ficus religiosa* L.	Moraceae	पिपल	पिपल	Fruit		Fruit edible, worshiped as religious tree	T
37	*Ficus semicordata* Buch.-Ham. ex Sm.	Moraceae	खनियो	मोगोछी	Root, Leaves, Fruit, Wood	Root juice	Medicine for fever, fodder, fuelwood, fruit edible	T

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38	*Galinsoga quadriradiata* Ruiz & Pav.	Compositae	गंदे झार	टिनो	Whole plant	Juice	Medicine in cuts to stop bleeding and in insect bite such as bug	H
39	*Holarrhena pubescens* Wall. ex G.Don	Apocynaceae	वन खिर्रो	वन खिर्रो	Wood, Leaves		Fodder, making tools from wood	T
40	*Ichnocarpus frutescens* (L.) W.T. Aiton	Apocynaceae	बाखे लहरा	रक्षी	Fruit, Leaves		Fruit edible and fodder	C
41	*Duhaldea cappa* (Buch.-Ham. ex D.Don) Pruski & Anderberg	Compositae	गाँई तिहारे	डाँडे झार	Flower, root	Decoction	Medicine of root for fever, used for fermentation (marcha) from flowers	S
42	*Jatropha curcas* L.	Euphorbiaceae	सजिवन	रजनी	Bark	Latex	Medicine for tooth cleaning	T
43	*Justicia adhatoda* L.	Acanthaceae	असुरो	असुरी	Leaves		Manure	S
44	*Kaempferia rotunda* L.	Zingiberaceae	भई चम्पा		Tuber	Tuber juice	Medicine in sprain and broken bones	H
45	*Maesa chisia* Buch-Ham.ex D. Don	Primulaceae	बिलाउने	बिलाउने	Leaves		Fodder and religious	S
46	*Maesa macrophylla* Wall.ex Roxb.	Primulaceae	भोकटे	भोकटे	Leaves		Used as fish poison	S
47	*Mallotus philippensis* (Lam.) Müll.Arg.	Euphorbiaceae	सिन्दुरे	सिन्दारे	Bark, Leaves	Bark juice	Medicine in dysentry and and other stomach problem, fodder	T
48	*Malvaviscus arboreus* Cav.	Malvaceae	खोर्सानी फूल		Flower		Ornamental	S
49	*Melia azedarach* L.	Meliaceae	बकाइनो	बकाइनो	Leaves, Wood		Fodder, timber	T
50	*Mentha spicata* L.	Lamiaceae	बाबरी	बोरी	Seeds	Soaked seeds	Medicine in fever	H
51	*Morus nigra* L.	Moraceae	किम्बु	किम्पु	Fruit, Leaves		Fruit edible and fodder	T
52	*Ocimum tenuiflorum* L.	Lamiaceae	तुलसी	तुलसी	Leaves	Boiled leaves	Medicine of boiled leaves in cough	H
53	*Oroxylum indicum* (L.) Kurz	Bignoniaceae	टटेलो	किताता	Flower		Religious purpose	T
54	*Osbeckia stellata* Buch.-Ham. ex Ker Gawl.	Melastomataceae	सानो अंगेरी	अंकुली	Fruit, Root	Root juice	Medicine of root juice in stomachaic, fruit edible, fodder	S
55	*Peperomia pellucida* (L.) Kunth.	Piperaceae	पानी झार	पीदी	Whole plant		Fodder	H
56	*Polygonum perfoliatum* (L.)	Polygonaceae	अमिलो झार	क्यूमाले लहरा	Whole plant		Fodder	H
57	*Phyllanthus emblica* L.	Euphorbiaceae	अमला	तिति	Leaves, Fruit, Bark	Bark juice	Medicine in stomach ache, fruit edible, fodder	T
58	*Phyllanthus parvifolius* Buch.-Ham. ex D. Don	Phyllanthaceae	खरेटो		Whole plant		Fodder	S
59	*Pilea symmeria* Wedd.	Urticaceae	कामले	पङ्गलो	Leaves,Tender shoots		Eaten as vegetable and fodder	H
60	*Pinus roxburghii* Sarg.	Pinaceae	सल्ला	सल्ला तुंग	Wood		Fuelwood	T
61	*Plumeria rubra* L.	Apocynaceae	चुवा		Flower		Religious purpose	T

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62	*Brucea javanica*(L.)Merr.	Simaroubaceae	भकिमलो		Fruit	Powder	Medicine in diarrhoea and dysentry, used as cooling, Fruit edible	T
63	*Ricinus communis* L.	Euphorbiaceae	अँडेर	अडेस	Seed	Paste	Medicine for skin allergy	S
64	*Rubus ellipticus* Sm.	Rosaceae	एसेंलु	पलान	Root	Juice	Medicine in stomach problems (gano gola), fruit edible	S
65	*Rubus reticulatus* Wall. ex Hook.f	Rosaceae	कालो एसेंलु		Fruit, Tender shoot	Paste	Medicine of tender shoot in stomach problem, fodder, fruit edible	S
66	*Saccharum spontaneum* L.	Poaceae	काँस	काँस	Leaves		Fodder	
67	*Sapindus mukorossi* Gaertn.	Sapindaceae	रिठ्ठा		Fruit, wood, Leaves	Fruit lather	Medicine as anthelmenthic, Used as soap for bathing, washing clothes, fooder, fuelwood and for cleaning gold	T
68	*Schima wallichii* (DC.) Korth.	Theaceae	चिलाउने	क्योसिन	Bark	Paste	Medicine in wounds and muscle pain (gatha)	T
69	*Shorea robusta* Gaertn.	Dipterocarpaceae	साल	साल	Leaves, Stem, Wood		Fodder, timber, fuelwood, stem used in religious purpose	T
70	*Solanum americanum* Mill.	Solanaceae	काली गेडी	पिमनेन्दो	Fruit (berries)		Fruit edible	H
71	*Stephania glandulifera* Miers	Menispermaceae	बाटुलेपाते	बाटुलेपाते	Whole plant		Fodder	C
72	*Syzygium cumini* (L.) Skeels	Myrtaceae	जामुन	क्यामुना	Leaves, Fruit, Wood	Leave juice	Medicine in common cold and cough, stomach problems, fruit edible, carpentary	T
73	*Terminalia alata* Heyne ex Roth	Combretaceae	साँझ		Wood, Bark	Juice	Medicine of bark in wounds and skin allergy, fuelwood, fodder	T
74	*Terminalia bellirica* (Gaertn.) Roxb.	Combretaceae	बर्रो	बर्रो	Fruit, Wood	Dried fruit	Medicine in stomach problems, timber, fuelwood	T
75	*Terminalia chebula* Retz.	Combretaceae	हर्रो		Fruit	Dried fruit	Medicine in cough	T
76	*Tinospora sinensis* (Lour.) Merr.	Menispermaceae	गुर्जो		Whole plant	Juice	Medicine as coolent, given to animals in urinary problems	C
77	*Chromolaena odorata* (L.) R.M.King & H.Rob.	Compositae	ठुलो वनमासा	वनमासा	Leaves	Leave juice	Medicine in cuts	H
78	*Triumfetta rhomboidea* Jacquin	Malvaceae	डल्ले कुरो	तेना छि	Whole plant		Fodder	H
79	*Urtica parviflora* Roxb.	Urticaceae	सिस्नु	पोलो	Tender shoots, Root	Root juice	Medicine for fever, tender shoots used as vegetables, used to ward off witches and evil spirits	S
80	*Woodfordia fruticosa* (L.) Kurz	Lythraceae	ध्यारो	ध्नयार	Bark, Wood	Bark juice	Medicine in stomach problems, fuelwood	S

Life form represents C for Climber; H for Herb; P for Pteridophyte; S for Shrub; T for Tree