

Documentation of Indigenous Knowledge on Plants used by Tamang Community of Nuwakot District, Central Nepal

Kamal Bahadur Nepali*, Mitra Lal Pathak, Srijana Shah and Dipak Lamichhane

National Botanical Garden, Godawari, Lalitpur

*Email: kamal_nepali26@yahoo.com

Abstract

The present work documents 45 plant species belonging to 36 genera of 24 families used by the Tamang community of Kispang Rural Municipality of Nuwakot district. The Tamang people were found dependent on the plant resources to fulfill their basic requirements. Primary data collection methods during field visit included semi-structured interview with local knowledgeable people of the community. The information collected included local name of plants, uses, form of use, and parts used. The highest numbers of plant (32 species) were used as edible and medicine followed by others. The most commonly used plant part was leaves (26 species). This study revealed that the Tamang community of study site has good indigenous knowledge of using plants for various purposes.

Keywords: Ethnobotany, Plant resources use, Tamang people

Introduction

Nepal being a multiethnic and multilingual country consists of 125 caste/ethnic groups. The population of Tamang is 1,539,830 which cover 5.8 percent of total population of Nepal (National Population and Housing Census [NPHC], 2011). They are one of the major ethnic groups of Nepal. The documentation of indigenous knowledge on the utilization of local plant resources by different ethnic groups or communities is one of the main objectives of ethnobotanical research (Malla & Chhetri, 2009). Plant resources can be used for various purposes such as food, fodder, fiber, firewood, timber, making tools, making household appliances, medicines, aroma, ornament, cultures, festivals etc. (Kunwar & Bussmann, 2008; Bhattarai & Acharya, 2015; Shah et al., 2017; Shah et al., 2018). The practice of using plant resources vary according to tradition, climatic conditions and vegetation type of the place.

Several studies have been conducted on medicinal plants and their traditional use in different parts of Nepal. Studies regarding the use of plants by Tamang community have also been conducted in the past (Shrestha, 1988; Tamang, 2003; Malla & Chhetri, 2009; Luitel et al., 2014). Most of the studies are done on traditional medicinal practices. Plants are used for many purposes other than medicinal

(Bhattarai, 2009). Ethnobotanical study of Tamang community in Kispang Rural Municipality of Nuwakot district has remained unexplored. Kispang Rural Municipality, Manegaun being one of the oldest place where Tamang people live. Documentation of traditional knowledge is necessary before the knowledgeable generation gets completely lost (Shah et al., 2017). Ethnobotanical studies help for conservation of cultural tradition, sustainable use of plants as well as for socio-economic growth of ethnic communities (Malla & Chhetri, 2009; Mesfin et al., 2013).

This study helps to documentation of traditional knowledge and indigenous practices to use the plants in Tamang community and conserve the used parts in ethnobotanical museum & ethnobotanical garden of National Botanical Garden (NBG), Godawari.

Materials and Methods

Study Area

Nuwakot district lies between 27°54' to 27°91' N and 85°14' to 85°24' E. Its total area is about 1,121 square kilometers. The height ranges from 300 m to 5,000 m from the sea level. This study was carried out on Tamang community of Nuwakot district in Kispang VDC, Manegaun in May 2019.

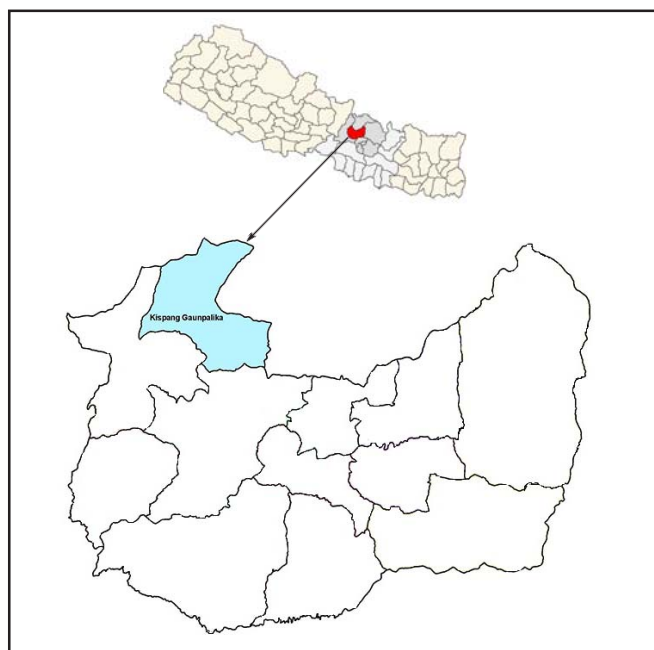


Figure 1: Map of study area (Kispang, Nuwakot)

Plant species were collected and necessary information were noted down in the field. To obtain detail information, the plant specimens collected from the field were exhibited during semi-structured interviews done with 43 respondents mostly including traditional healers and knowledgeable persons both male and female. The collected information included local name of plants, uses, form of use and parts used. The graphs were prepared by using MS-Excel.

Voucher specimens collected during field visit were preserved as herbarium in National Botanical Garden. They were identified using standard literatures (Hara et al., 1978, 1982; Hara & Williams, 1979; Press et al., 2000) and comparing with specimens preserved at National Herbarium and Plant Laboratories (KATH), Godawari.

Results and Discussion

Altogether 45 plant species belonging to 24 families and 36 genera were collected and their local name, uses, used parts and utilization patterns were noted down. Most of the plants (32 species) were used for edible and medicinal followed by miscellaneous uses, fodder, firewood, religious and other purposes as shown in Figure 2. Some of the common

medicinal uses were in fever, toothache, pressure, sugar, gastrointestinal, cut and wounds, eye problem, etc. (Yadav & Rajbhandary, 2016). Miscellaneous uses include making toothpaste, soap, shampoo, toothbrush of stem, tapari etc. Several species were found to be used for more than one purpose. Uses of plants along with its local names, utilization pattern and used parts are listed in Table 1.

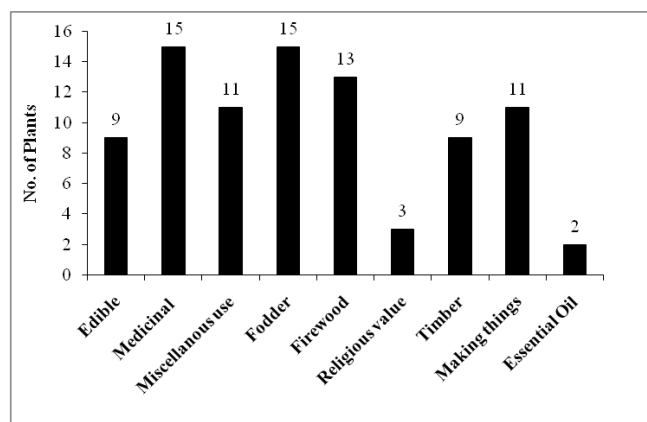


Figure 2: Number of plants used by Tamang people for various purposes

Among different plant parts, leaves of most of the plants (26 species) were used by Tamang people for various purposes followed by fruit (17 species), wood (9 species), etc. Stem, flower, whole plant, young shoot and root were also used in some cases (Figure 3).

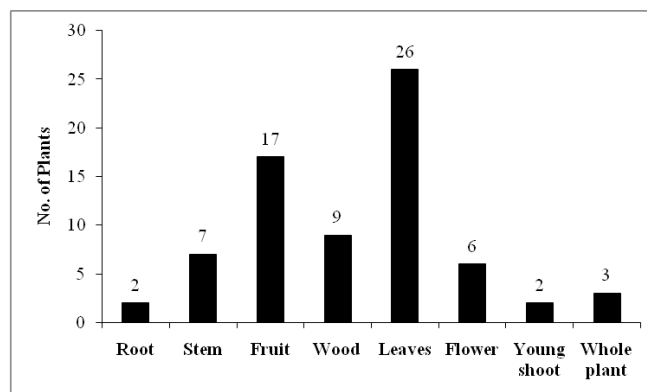


Figure 3: Number of plant parts used by Tamang people

Malla & Chhetri, (2009) and Shah & Lamichhane, (2017) also found that tribal people of Kavrepalanchowk including Tamang used plants and plant parts for various purposes in their daily life. The study by Luitel et al. (2014) found that, leaves and fruits were frequently used parts by people

because they are easily available and contain high concentration of bioactive compounds. As seen from this study leaves and fruits were also used in most of the plants for edible as well as medicinal purpose. Similarly, the work conducted by Mesfin et al. (2013) in Northern Ethiopia, Yadav & Rajbhandary, (2016) in Nuwakot district and Shah et al. (2018) in Dhading district also found that leaves of plants were mostly harvested for medicinal purpose which do not affect their population and is better for sustainable utilization of plant.

Conclusion

The study showed that people of Tamang community have good indigenous knowledge of using wild plants for various purposes, most importantly as wild edible fruits and medicinal value. This study showed that such knowledge seems to be decreasing in younger generation because of global modernization. Hence, it is necessary to preserve and properly document them to keep a record of the diversified utilization of various plants for future.

Acknowledgements

We are grateful to Mr. Dhananjay Paudyal, Director General, Mr. Sanjeev Kumar Rai, former Director General and Deputy Director General Mr. Mohan Dev Joshi, Department of Plant Resources for their continuous encouragement. Our sincere thanks go to the local people of Manegaun village for their kind cooperation during the field study. We would like to thank Ms. Srijana Shah for her kind support and help in paper writing. We also like to thank Ram Prasad Panthi, Matrika Prasad Adhikari and Roshan Tamang for their assistance during the study.

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Table 1: List of plants used by Tamang people of Kispang VDC Manegaun for various purposes

S.N.	Scientific Name	Nepali Name	Tamang Name	Family	Parts Used	Form of use	Uses	Life form
1	<i>Achyranthes bidentata</i> Blume	Datiwan	Phrekphrek	Amaranthaceae	Whole plant	Twigs	Stem used as toothbrush at the time of toothache and religious value	H
2	<i>Ageratina adenophora</i> (Spreng.) R.M. King & H.Rob.	Banmara	Risaiba	Compositae	Leaves	Leaf paste	In cuts, green manure	H
3	<i>Albizia julibrissin</i> Durazz.	Siris	Tyewa	Leguminosae	Stem, Leaves		Firewood, Bananaripening	T
4	<i>Alnus nepalensis</i> D. Don	Uttis	Bomsing	Betulaceae	Wood, leaves		Fodder, timber, firewood	T
5	<i>Artemisia indica</i> Willd.	Titepati	Chyenchin	Compositae	Whole plant	Leaf juice	As incense, in cough, cuts, religious value	H
6	<i>Bauhinia purpurea</i> L.	Tanki	Konar	Leguminosae	Leaves, flower		Fodder	T
7	<i>Bauhinia vahlii</i> Wight & Arn.	Bhorla	Ghumlapte	Leguminosae	Leaves		Fodder, to make Segu	C
8	<i>Bauhinia variegata</i> L.	Koiralo	Ampu	Leguminosae	Leaves, Flower		Fodder, flowers for making pickle	T
9	<i>Choerospondias axillaris</i> (Roxb.) B.L.Burt & A.W.Hill	Lapsi	Kalang	Anacardiaceae	Fruits and seed	Dry seed	Fruits for making pickle, seed pest for wound	T
10	<i>Cinnamomum camphora</i> (L.) J. Presl	Kapur	Sarchengen	Lauraceae	Leaves & fruits		Fodder, firewood, insecticide	T
11	<i>Dalbergia sissoo</i> DC.	Sisau	Sisoo	Leguminosae	Wood		Timber	T
12	<i>Diploknema butyracea</i> (Roxb.) H.J.Lam	Chiuri	Singmar	Sapotaceae	Fruits & seed	Dry seed	Fruits are edible, seed used to prepare banaspati ghee	T
13	<i>Ficus hispida</i> L.f.	Khasreto	Khosere	Moraceae	Leaves, stem		Fodder, Firewood	T
14	<i>Ficus lacor</i> Buch.-Ham.	Kavro	Dawah	Moraceae	Leaves, buds	Dry buds	Fodder, buds for vegetable & pickle	T
15	<i>Ficus racemosa</i> L.	Timilo	Mako	Moraceae	Leaves, fruit, buds		Fodder, fruit edible	T
16	<i>Ficus semicordata</i> Buch.-Ham. ex Sm.	Khaniyo	Kyosing	Moraceae	Leaves, fruit		Fodder, fruit edible	T
17	<i>Gaultheria fragrantissima</i> Wall.	Dhasingre	Chyanchabal	Ericaceae	Fruit, leaves	Leaf paste	Fruit edible, as medicine in scabies, extraction of oil, making ointment, toothpaste	S
18	<i>Jatropha curcas</i> L.	Sajiwan	Usure	Euphorbiaceae	Stem & Latex	Fresh latex	Toothache, wound heal	S
19	<i>Lagerstroemia parviflora</i> Roxb.	Bot Dhayero	Botadhairo	Lythraceae	Leaves, stem		Fodder, Firewood	T
20	<i>Leucaena leucocephala</i> (Lam.) de Wit	Ipil Lipil	Dyahunng	Leguminosae	Leaves		Firewood	T
21	<i>Litchi chinensis</i> Sonn.	Litchi	Litchi	Sapindaceae	Fruits		Fruits edible	T
22	<i>Litsea monopetala</i> (Roxb.) Pers.	Kutmero	Chachache	Lauraceae	Leaves		Fodder	T
23	<i>Lyonia ovalifolia</i> (Wall.) Drude	Angeri	Domsin	Ericaceae	Leaves, wood	Leaf juice	In skin diseases, scabies, timber, firewood	T
24	<i>Magnolia champaca</i> (L.) Baill. ex Pierre	Champ	Chyambe	Magnoliaceae	Leaves, flower		Fodder, Religious value	T

S.N.	Scientific Name	Nepali Name	Tamang Name	Family	Parts Used	Form of use	Uses	Life form
25	<i>Mangifera indica</i> L.	Aanp	Aampa	Anacardiaceae	Fruits, Flowers	Dry fruits and leaves	Fruits edible, dry flower and fruits for pickle, religious	T
26	<i>Melia azedarach</i> L.	Bakaino	Gorkha	Meliaceae	Leaves, stem		Fodder, Firewood	T
27	<i>Morus alba</i> L.	Kimbu	Botyero	Moraceae	Leaves, fruits		Fodder, Fruits are edible,	T
28	<i>Oroxylum indicum</i> (L.)Kurz	Tatelo	Pate	Bignoniaceae	Fruit, leaves, flower	Leaf paste	In wounds, religious purpose	T
29	<i>Pinus roxburghii</i> Sarg.	Khotesalla	Thangsing	Pinaceae	Wood, stem		Timber, firewood	T
30	<i>Potentilla fulgens</i> Diels	Bajradanti	Kripangdu	Rosaceae	Root	Dry root	Fever and headache	H
31	<i>Prunus cerasoides</i> Buch.-Ham. ex D.Don	Painyu	Pyursing	Rosaceae	Fruit	Fruit bark cooked pest	Fruit edible, in sprain, as anthelmintic	T
32	<i>Prunus persica</i> (L.) Batsch	Aaru	Khale	Rosaceae	Fruit		Fruit edible	T
33	<i>Psidium guajava</i> L.	Amba	Ambaru	Myrtaceae	Leaves & Fruits		Fruits are edible, leaf extract for cough & diarrhea.	T
34	<i>Quercus semecarpifolia</i> Sm.	Khasru	Yemen	Fagaceae	Wood, Leaves		Timber, for carpentry, firewood, fodder	T
35	<i>Rhododendron arboreum</i> Sm.	Laligurans	Paramendo	Ericaceae	Stem, flower	Flower juice	Firewood, as medicine in neck pain, flowers are pickled	T
36	<i>Rubus ellipticus</i> Sm.	Ainselu	Polang	Rosaceae	Fruit, root		Fruit edible, making toothpaste, headache	S
37	<i>Sapindus mukorossi</i> Gaertn.	Rttha	Lyumdang	Sapindaceae	Fruits	Dry Fruits	As soap, insecticides	T
38	<i>Schima wallichii</i> (DC.)Korth.	Chilaune	Kyasing	Theaceae	Wood, Leaves		Firewood, Timber, manure	T
39	<i>Shorea robusta</i> Gaertn.	Saal	Jesing	Dipterocarpaceae	Leaves and wood		Timber, fodder, leaves for making plate	T
40	<i>Smilax aspera</i> L.	Kukurdino	Nagikre	Liliaceae	Stem, Leaves		Making dhyangro, fodder	C
41	<i>Spondias pinnata</i> (L.f.) Kurz	Amaro	Chyapang	Anacardiaceae	Fruits and Stem		Firewood and pickle	T
42	<i>Terminalia alata</i> B. Heyne ex Roth	Saaj	Dharsing	Combretaceae	Wood		Timber	T
43	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Barro	Barba	Combretaceae	Fruits	Dry fruit	Throat pain	T
44	<i>Terminalia chebula</i> Retz.	Harro	Arba	Combretaceae	Fruits, Leaves, Wood	Dry fruit	Timber, Fodder, fruits for throat pain	T
45	<i>Toona ciliata</i> M.Roem.	Tooni	Kyabai	Meliaceae	Wood		In carving, firewood	T

Note: H= Herb, S= Shrub, T=Tree, C= Climber