Traditional plant uses and medicinal significance in Western Nepal: A study of Ramaroshan rural municipality, Achham district

Sanju Neupane, Gyanu Thapa Magar, Sujan Chaudhary, Deepak Raj Pant

Correspondence

Sanju Neupane[1], Gyanu Thapa Magar[1], Sujan Chaudhary[2], Deepak Raj Pant[3, *]

[1]Department of Botany, Amrit Campus, Tribhuvan University, Kathmandu Nepal
[2]Biological Resource Unit, Faculty of Science, Nepal Academy of Science and Technology, Lalitpur, Nepal
[3]Central Department of Botany, Tribhuvan University, Kirtipur, Kathmandu Nepal

*Corresponding Author: deepak.pant@cdb.tu.edu.np

Ethnobotany Research and Applications 31:75 (2025) - http://dx.doi.org/10.32859/era.31.75.1-28
Manuscript received: 25/01/2025 - Revised manuscript received: 01/09/2025 - Published: 05/09/2025

Research

Abstract

Background: Indigenous and local communities of diverse origins in Nepal have used medicinal plants for primary healthcare since time immemorial. This study aims to document traditional plant-use knowledge across various categories in Ramaroshan rural municipality, Western Nepal.

Methods: Data were collected through informant interviews and focus group discussions using semi-structured questionnaires. A linear regression was performed to observe the relationship between the age of respondents and the number of plants described by them. The quantitative data were analyzed to calculate Use Values (UV), Informant Consensus Factor (ICF), and Fidelity Level (FL) across different plant use categories and ailments.

Results: A total of 155 plant species, 136 genera and 70 families were reported. The plants were categorized according to their uses as food, medicine, fodder, handicrafts, timber, and religious/cultural values. Among the different groups of plant, the angiosperms especially the herbs were the most commonly used plants, and the leaves were the most commonly used plant parts, for the livelihood in local traditions. The Fidelity Level (FL) identified *Taxus* sp. and *Ageratina adenophora*, among others, as highly specialized plants for cancer and skin disorders.

Conclusions: Ethnobotanical plants play a vital role in sustaining the livelihoods of rural communities. This study offers a comprehensive documentation of plant species utilized by the Khas community in Ramaroshan rural municipality, Achham District. The findings highlight the urgent need to conserve biodiversity and its associated traditional knowledge, which could also pave the way for future scientific research.

Keywords: Khas community, Traditional knowledge, Fidelity level, Knowledge transfer, West Nepal

Background

The relationship between people and plants, primarily as a source of food, shelter, and clothing, dates back to the dawn of human civilization (Malla *et al*. 2015). Nature has provided diverse life form, which humans depend on for survival on Earth. Globally, approximately 31,128 species of flowering plants have been documented as useful plant resources including 17, 810 medicinal plants, 5,538 food crops, and 3649 fodder and forage species (RBG 2016, Shrestha *et al*. 2018). Traditional medicine is believed to utilize around 52,885 plant species, though the exact number of bioactive medicinal compounds they contain remains unknown (Schippmann *et al*. 2002, Gewali & Awale, 2008).

Nepal is one of the world's most biodiverse countries, boasting exceptional richness in plant, animal, and fungal species (Paudel *et al*. 2011). Despite its modest size, Nepal boasts an extraordinary range of climates and vegetation, packed within its relatively small area, is one of the captivating features (Miehe *et al*. 2015). According to census 2023, Nepal contains 142 caste/ethnic groups and 124 languages. Among them, Khas Community is considered as an indigenous people of Western Nepal. The Khas Community once thrived in Western Nepal, deeply rooted in history, they have since spread to all corners of modern-day Nepal, leaving their remarkable influence in regions as far as Bhutan, Sikkim, and Bengal (Kafle 2024).

The present study is an exhaustive documentation of useful plants species used by the Khas community. Khas tribe or Khashiya is an Indo-Aryan ethno-linguistic group native to the Himalayas. It consists of Chhetri, Thakuri, Kami, Sarki, etc. (Sharma 2004). Although many ethnobotanical studies have been done in different parts of the country, less concern was made to this community. Most of the ethnobotanical (Kunwar *et al*. 2003) and ethnomedicinal studies (Kunwar *et al*. 2009, Rokaya *et al*. 2010, Kunwar *et al*. 2013) have been conducted in Western Nepal. However, the studies regarding ethnobotanical knowledge of Khas community still remains unexplored. Traditional knowledge about plant use is declining due to lifestyle changes, the lack of knowledge transfer systems, the access to modern healthcare facilities in rural areas, and the unwillingness of younger generations to conserve traditional knowledge (Kutal *et al*. 2021). Thus, documenting the Khas community's distinctive traditional knowledge about the various uses of plants for food, medicine, fodder, handicrafts, and other purposes can aid in recording and conserving the current understanding of plant species conservation (Njoroge *et al*. 2004). The present study aimed to record the traditional ethnobotanical knowledge of the Khas people living in the study region with emphasis on knowledge level among the people of different age group and gender.

Materials and Methods

Study Area

The study area is located in (29°20' N and 81º42' E) Ramaroshan rural municipality (29°20' N and 81°42' E) in Achham District, West Nepal (Figure 1). The elevations of the study area range from 1700 to 2700 meters above sea level. The rural municipality consists of seven wards and has a population of 29,623, with 14,917 males and 14,706 females. The study was conducted on five different villages in the ward 5, namely, Nilkantha Maadu, Tallo Paatal, Sallisen, Alledi, and Netakot as this ward was the most populous one with a population of 6894 (3,393 females and 3,501 males) in 3501 households (RRMP 2018). According to DHM (2023), the adjacent Managalsen meteorological station, which is 42 kilometers from Ramaroshan rural municipality, has an average maximum and lowest temperature of 25.7°C and 13.5°C, respectively. The main inhabitants of the study area belong to various castes of the Khas community like Chhetri, Brahmin, Thakuri, and Kami, and speak the Achhami language.

Primary Data Collection

During the survey, 30 men and 30 women were selected from the study site for interview using semi-structured questionnaire. Moreover, 20 respondents participated in focus group discussion. This ward alone represented 23.27% population of the whole rural municipality. In order to understand the trend of transfer of traditional plant knowledge to the younger generation, focus group discussions were held with respondents below the age of 20, at Nilkanthamandu Madhyamik Vidyalaya, a local public school. Overall, 80 respondents were involved through both individual interviews (60) and focus group discussions (20). The data collection included door-to-door interviews and focus group discussions administering the open-ended questionnaire. The respondents were selected from diverse background including, 66% were farmers, 25% were students, 4% politicians, 3% local healers, and 3% government employees. They were divided into four age groups: under 30, 30-59, 60-89, and above 90.

A preliminary study was conducted in February 2021 and the numbers of wards, households and estimated number of respondents to be involved and roughly created a suitable timeframe for data collection were finalized. The final ethnobotanical data was collected in April and June 2021. Snowball sampling and simple random sampling were the methods used for data collection. The code of conduct of the International Society of Ethnobiology (International Society of Ethnobiology 2006) was strictly followed during the present study. The verbal informed consent was obtained from the participants before the interviews, and permission for publication and submission to the university was secured. Semi-structured questionnaires were prepared. The Achhami language was predominantly used by the respondents in the study areas, but a local assistant helped translate Achhami into Nepali language for convenience. The objectives of this study were explained to each respondent and verbal consent was obtained from them to further publish this data.

Plant Collection, Identification and Herbarium Preparation

Except for medicinal plants, others species were already documented in nearby areas of the villages of Ramaroshan. Five local residents assisted us in the field for specimen collection and identification of medicinal plants. During the fieldwork, participants provided information on local (vernacular) names, parts of plants used for medicine, and other uses such as food, timber, firewood, and fodder. The voucher specimens were collected for herbarium preparation following Bridson and Forman (1989). The specimens were identified by comparing with online databases with the names in the Flora Checklist of Nepal (http://www.efloras.org/flora_page.aspx?flora_id=110) and World Flora online and also by using standard literature like Manandhar (2002), Polunin and Stainton (1984), and Watson *et al.* (2011). Accession codes (SG) were given to the herbarium specimens and were deposited at the Ascol Herbarium (Amrit Science Campus, Lainchour).

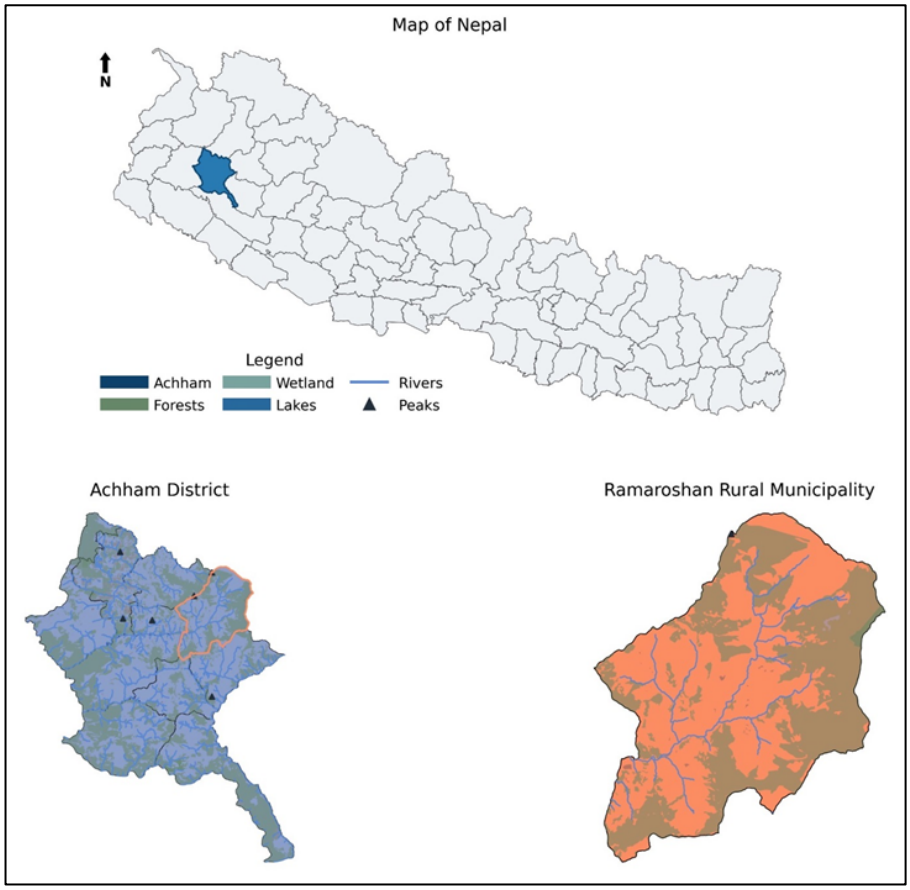

Figure 1. Map of the study area

Quantitative data calculation

To assess the prevalence, objective measurement, and standardization of ethnomedicinal study, the following quantitative analyses were performed.

Use Value

The formula given by Phillips & Gentry (1993) was used to calculate the Use Value (UV) of different plant species as:

$$UVs=\sum i\ UVis/ns$$

Where,

UVis= Total use reports cited for plant species 's' by each informant 'i'

ns = Total number of species recorded from all informants

Informant Consensus Factor

The Informant Consensus Factor (ICF) measures the ethnomedicinal importance of plant species and assesses the agreement among informants regarding each category of plant use (Tahir *et al*. 2021). Higher values (near 1) indicate clear and consistent selection criteria among informants for plants used to treat specific ailments.

Similarly, the formula given by Trotter & Logan (2019) was followed to find out the Informant Consensus Factor (ICF) for different categories of ailment as:

$$ICF = (Nur-Nt)/(Nur-1)$$

Where, Nur = Number of use report for a particular illness category by informants and

Nt = Number of taxa or species used to treat that particular category by informants.

Fidelity Level Value

The Fidelity Level (FL) of information regarding the use of a species for treating a particular ailment was calculated as per the formula given by Friedman et al. (1986)

$$FL\% = IP/IU \times 100\%$$

Where,

IP = Number of informants who indicated the use of the species for the same major ailment and

IU = Total number of informants who mentioned that plant for any ailments.

Statistical analysis

The study included both descriptive and inferential analysis. The data sheets for both analyses were prepared in MS Excel 2013. The descriptive analysis included bar graphs, pie chart, dendrogram and chord diagram. Each chart, plot, and graphs were prepared in R software version 4.3.1. However, the peripheral dendrogram for family number was made with the help of Python version 3.10.12 compiled with GCC 11.4.0 used in Kaggle environment. Before conducting the inferential analysis, data were verified for normality test using Shapiro-Wilk test in R programming. The data were analyzed at 95% confidence level in each inferential analysis.

Results and Discussion

Diversity of Ethnobotanical plants

There was a total of 155 species (151 angiosperms, 3 gymnosperms, and 1 pteridophytes) of useful plants in the study area (Appendix 1). These represented 136 genera from 70 families. Among these families, 66 belonged to angiosperms, 3 belonged to gymnosperms, and one to pteridophyte. Angiosperms, being the largest and most diverse group in the plant kingdom, likely had many species recorded for various purposes (Corlett, 2016). Moreover, the higher availability of plant diversity can be attributed to the presence of the study area near to the ecotones, as the plant diversity increases in the ecotone areas (Jiang *et al.* 2022, Chaudhary & Aryal, 2025).

In terms of number of plant species used by the local people, Poaceae (13 species) was the largest family (Figure. 2) followed by Rosaceae (10 species), Moraceae (8 species), and Asteraceae, Ranunculaceae and Polygonaceae (6 species each), Urticaceae (5 species), Apiaceae, Fagaceae, Asparagaceae and Lauraceae (4 species each) were also among the large families. The remaining, 6 families were represented by 3 species, 14 families with 2 species, and 39 families with 1 species each. The dominance of the Poaceae family is likely due to its high abundance and widespread distribution worldwide (Gebashe *et al.* 2019). This could be because most people in study were farmers who rely completely on farming for growing crops. This observation aligns with previous research indicating a reliance on some common families for various purposes like including, food, medicine and cultural practices (Acharya & Acharya, 2009).

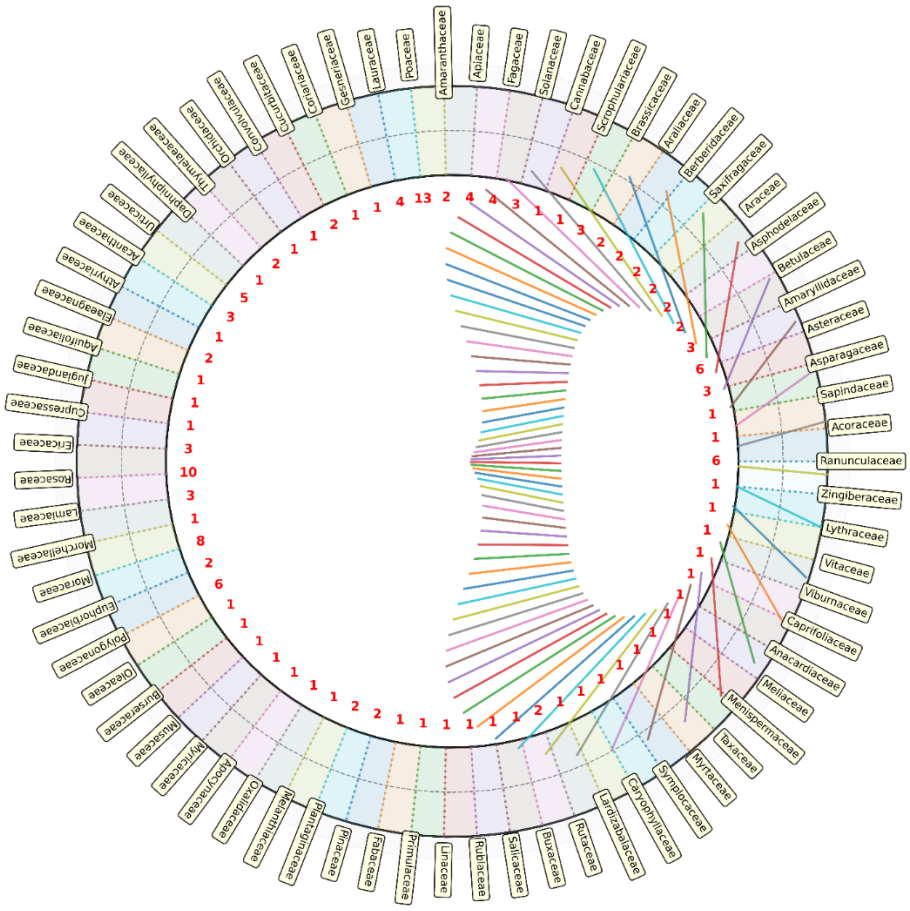

Figure 2. Peripheral dendogram visualizing the name of the families with their respective number of species

Plant Utilization Category

The use of plant species for various applications and categories has been provided in Appendix 1. The use of plant resources by the locals was broadly categorized into 8 different use categories such as timber (furniture and construction), fuelwood, food (vegetables, pickles, oil, cereals, and fruits), fodder, medicine, religious, handicrafts and miscellaneous (others) in line with earlier research (Chaudhary *et al.* 2020, Kunwar & Duwadee, 2003, Singh 2015). Most plant species in the area were primarily used for food (59 species), followed by fodder (43 species), medicine (42 species), fuelwood (20 species), timber (16 species), handicrafts (16 species), religious activities (13 species), and other (miscellaneous) uses (11 species) (Figure 3A). As majority of people in the area are farmers, it justifies their high dependence on forest resources for food and fodder (Bhattarai 2020). Similarly, use of many species of cultivated and naturally occurring plants as medicine for various illnesses, and use of cultivated crops for food in rural areas justifies high priority of plant uses for those species. Such high dependence on plants can be attributed to poor economic conditions and lack of proper health infrastructure in those remote, rural areas. Similar findings were also reported by Shrestha and Dhillion (2003) and Uprety *et al.* (2010).

In majority of cases (63 species), the leaves were the main parts used for various purposes, which was followed by entire plant (32 species), fruits (22 species), shoots (17 species), roots (12 species), seeds (11 species), bark (7 species), and flowers (6 species) (Figure 3B). Bark and flowers of very few plants were used by the local people. Since the leaves are major part of nutrient synthesis and thus possess higher biochemical activity, the traditional practice of using leaves of different plants for various purposes by the Khas people has some scientific basis. These findings are consistent with previous studies (Acharya & Acharya, 2009, Singh 2015, Chaudhary *et al.* 2020, Mallik *et al*. 2020, Silwal Gautam *et al*. 2023). Additionally, because people spent much of their time in the forest with their livestock, they gained extensive knowledge about the plants (Magar *et al*. 2022).

Life forms of Ethnobotanical Plants

Among the useful plants, herbs were the most frequently used life forms (72 species), followed by trees (43 species), shrubs (33 species), and climbers (7 species) (Figure 4). The higher preference for herbs as useful plants is primarily due to their high availability and ease of collection, transport, and storage (Kunwar *et al.* 2006, Shrestha & Dhillion, 2003, Uprety *et al.* 2010).

They also contain higher amounts of secondary metabolites per unit mass, which contribute to their life strategies (Bekalo *et al.* 2009). Similar findings were also reported for use of medicinal plants in Ethiopia (Giday *et al.* 2007, Wondimu *et al.* 2007), Thailand (Srithi *et al.* 2009), and Nepal (Munakarmi *et al*. 2025).

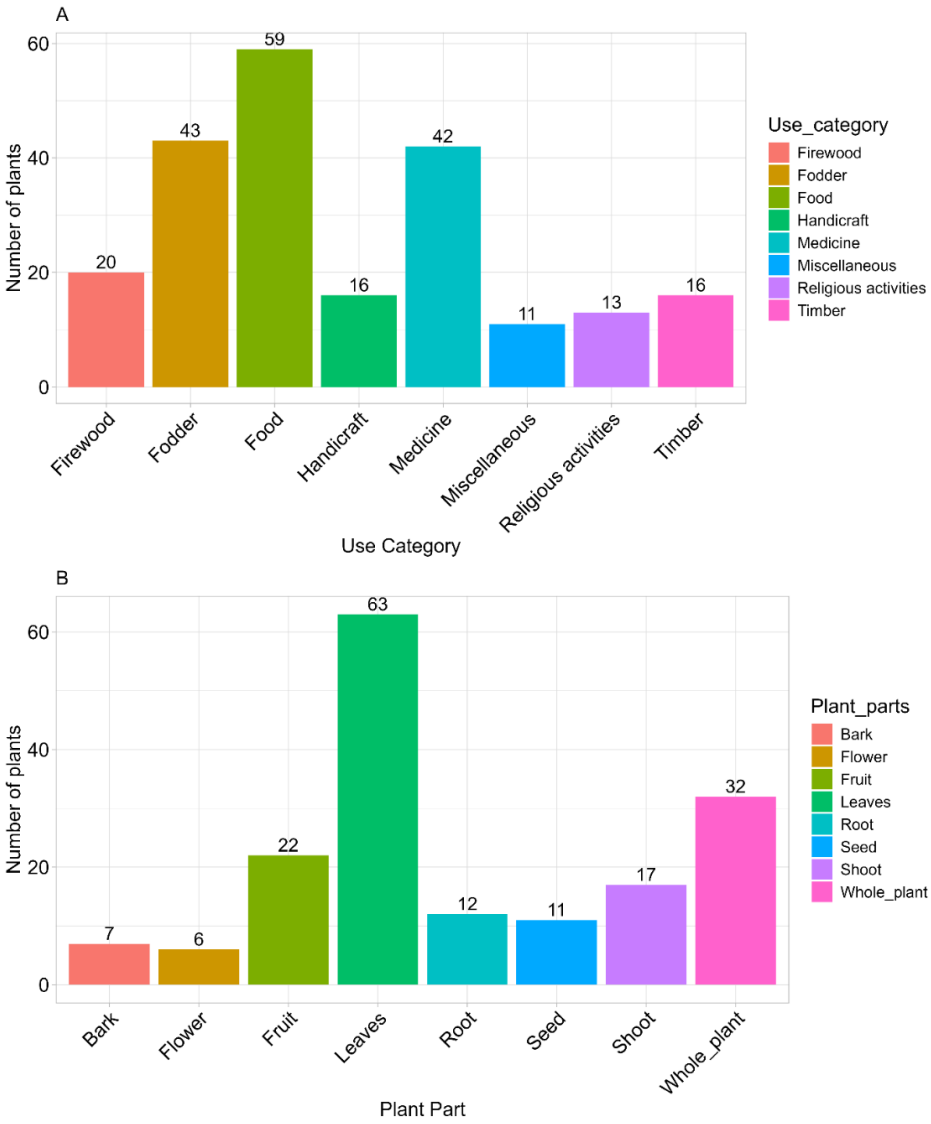

Figure 3. (A) Bar diagram representing the plant species in different use categories and (B) Number of species with different parts used

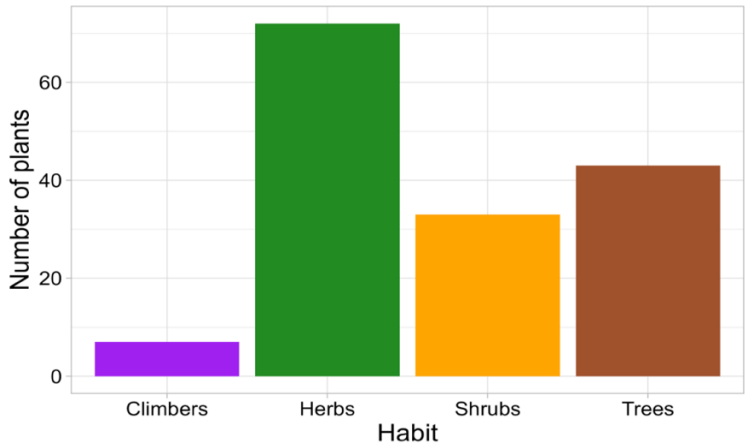

Figure 4. Bar diagram representing the life form of the plant species in percentage

Medicinal Plants

Among the 53 useful plants, members of Asteraceae and Ranunculaceae were prominently utilized for medicinal use in the study area (Figure 5). The predominance of Asteraceae may be attributed to its cosmopolitan distribution and abundance throughout the world making it the largest family of flowering plants (Ansari *et al.* 2017). Similarly, prominence of Ranunculaceae might be attributed to rich secondary metabolites, known for their pharmacological, and pharmaceutical, in many important plants belonging to the family (Milliken *et al.* 1999, Verpoorte *et al.* 2002).

The most commonly used parts among the medicinal plants were herbs followed by shrubs, trees and climbers in which roots were highly used as main parts followed by leaves and fruits. Herbs are more abundant and easier to collect and transport, for daily life. Raut and Shrestha (2012), reported about 54% herbs as a medicinal plant in Morang district. Roots are favored for their year-round availability and potent medicinal properties in traditional knowledge (Mahwasane *et al.* 2013). Another reason for their selection may also be due to higher concentrations of bioactive compounds in roots compared to others (Srithi *et al.* 2009). Leaves are also highly sought after, with harvesting posing less risk to plant survival as studies have shown that removing half of the leaves from a tree has a minimal impact on species growth (Poffenberger *et al.* 1992).

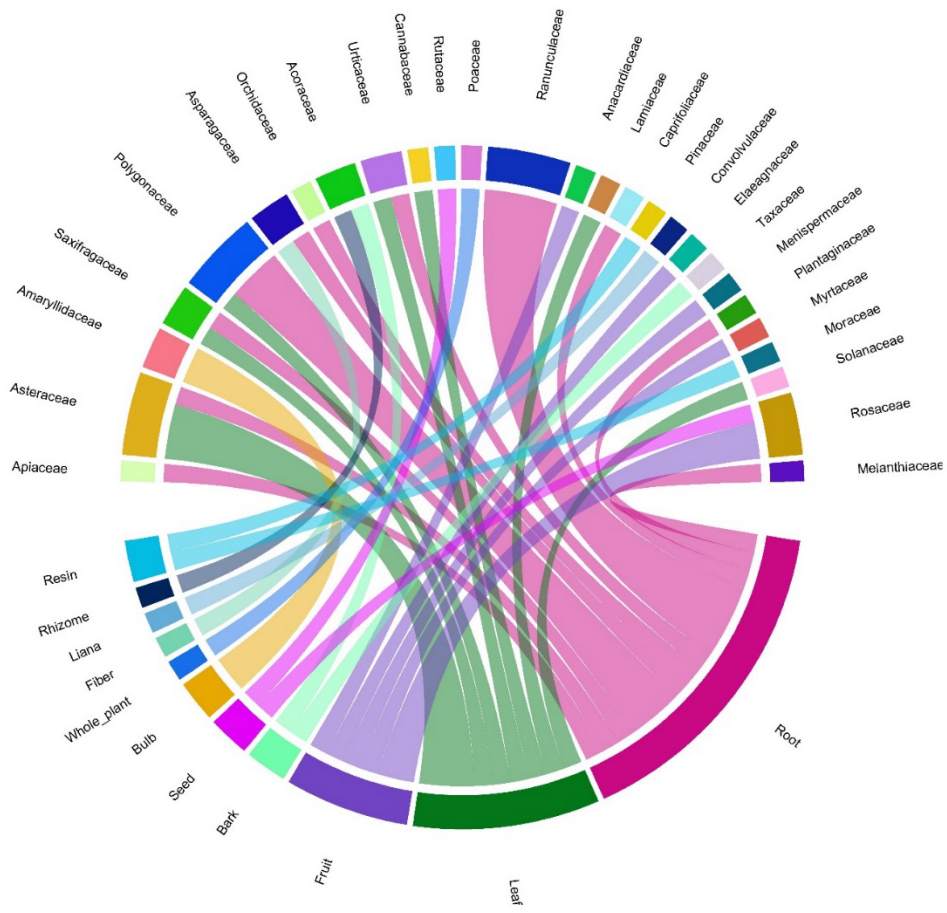

Figure 5. Chord diagram showing the use of different plant parts from specific families for medicinal purposes

Traditional Knowledge in Ethnomedicine

Since there is no proper documentation of ethnobotanical knowledge, it is typically passed down orally from one generation to the next. It was evident in the wide knowledge gap regarding the use of plants between the young (<30 years) and older (>30 years) respondents (Figure 6). There was a weak relationship between age of the respondent and the total number of plants known (p-value = 0.001, r = 0.397 for medicinal plants and p-value = 0.017, r = 0.305 for total plants known) (Figure 7). Despite limited knowledge transfer to the younger generation (below 30 years of age), some knowledge transfer was noted, indicated by correlation values not exceeding 0.39 in each case. Similar findings have also been reported in Dulal *et al.* (2022), Ojha Khatri *et al.* (2021), and Silwal *et al*. (2023).

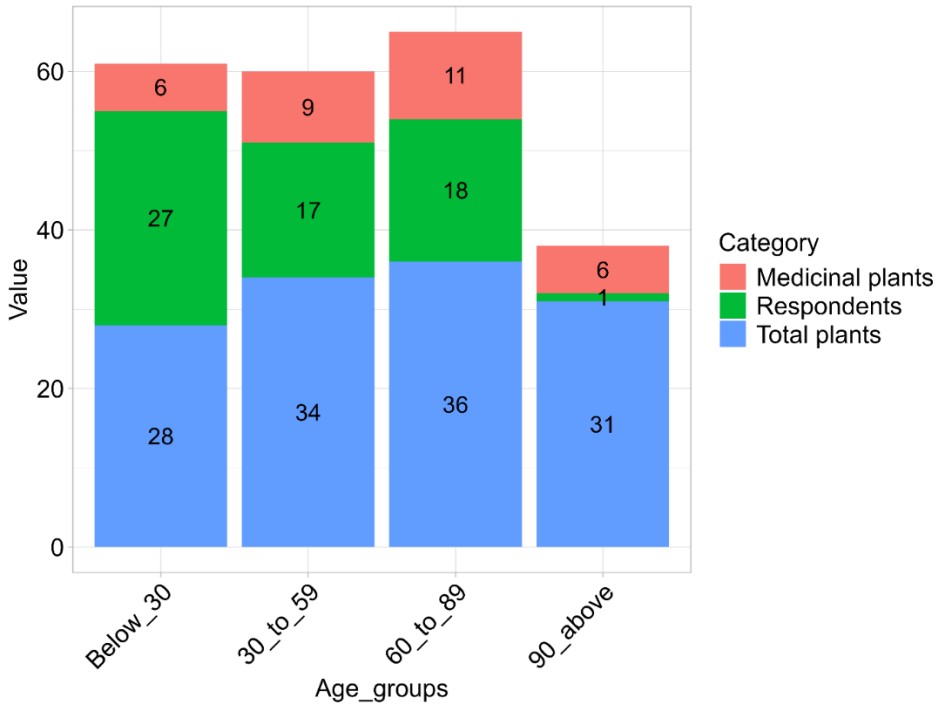

Figure 6. Ethnomedicinal knowledge in different age groups

Table 1. Gender-specific differences in the knowledge regarding local plants

	Total plants known	Medicinal plants known
Male	27	9
Female	26	8
p value	0.454	0.629

Local and traditional healers believe in a sacred quality to the healing power of medicinal plants. Due to concerns about its security, they often withhold information, believing that revealing plant names may diminish their effectiveness (Uprety *et al.* 2010). This may be the reason being reluctance of many healers to participate in the present study. Similar observations have been made in rural areas (Bhat & Jacobs, 1995, Jain & Saklani, 1991, Singh *et al.* 1979). Bhaila *et al*. (2022) on the other hand had reported that the traditional healers were very comfortable to share their knowledge regarding medicinal plant in Suryabinayak Area of Bhaktapur, Nepal. Regarding gender, both men and women displayed comparable knowledge of medicinal and ethnobotanical plants, with no statistically significant difference found in their knowledge levels (p-value = 0.629 for medicinal plants, p-value = 0.454 for ethnobotanical plants) (Table 1). This parity may be due to their active engagement in managing local resources within their nearby environments, spending considerable time in fields and forests (Kutal *et al.* 2021). Among the respondents, there was no difference between the males and females regarding the knowledge on local plants (Table 1) however that knowledge seemed to have increased with age (Figure 7). Similar trends have also been reported for the knowledge of farming and cultivation practices (Sharma & Bastakoti, 2009, Silwal *et al.* 2023).

Informant Consensus Factor (ICF)

Among the total 41 ailments mentioned in the present study, the highest ICF value was observed for anticancer and antidote categories (1), followed by respiratory problems (0.84) and gastrointestinal disorders (0.83). Dermatological disorders (0.82) and oral/dental issues (0.76) also showed substantially higher ICF values, while fever/headache (0.57) and cardiovascular disorders (0.00) had lower ICF scores (Table 2). The diversity of medicinal plants used for gastrointestinal disorders, dermatological infections, respiratory issues, and musculoskeletal problems contributed to their higher ICF values. Uprety *et al.* (2010) reported high ICF values for ophthalmological, dental, and renal issues in Rasuwa District, Central Nepal. These differences in species with high ICF values in the present investigation and that of Uprety *et al.* (2010) are possibly due to differences in the ethnicity of the concerned population.

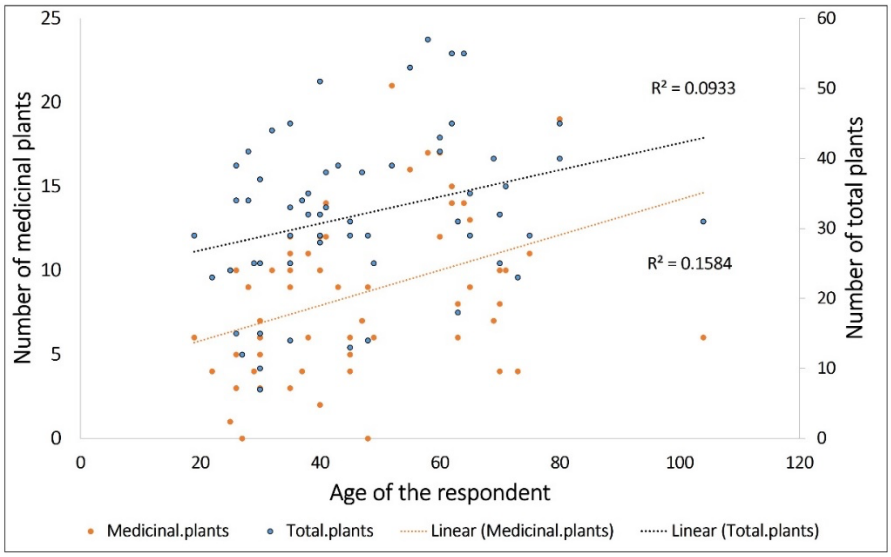

Figure 7. Linear regression between the age of the respondent and the total number of plants (blue dots) and the number of medicinal plants (orange dots) known to them

Table 2. Informant Consensus Factor (ICF) for different ailments

Ailments /health issues	Number of taxa (N_t)	Number of use reports (N_{ur})	ICF
Cancer	1	5	1.00
Poisoning	1	5	1.00
Respiratory problems	9	52	0.84
Gastro-intestinal disorder	21	118	0.83
Dermatological disorder	16	83	0.82
Oral and dental	5	18	0.76
Gynecological disorder	3	7	0.67
Snakebite	3	7	0.67
Miscellaneous	3	6	0.60
Skeleton- muscular pain	10	23	0.59
Fever and headache	7	15	0.57
Cardio-vascular disorder	2	2	0.00

Footnote: N_t = Number of taxa used, N_{ur} = Number of used reports.

Fidelity Level (FL) and Use Values (UVs)

In the present study, 18 plant species were identified for treating 12 different ailment categories. Species, such as *Taxus* sp., *Ficus auriculata*, *Prinsepia utilis*, *Ageratina adenophora*, and *Thalictrum cultratum*, had higher FL values and were noted for their use in treating multiple ailments like cancer, snakebite, and cardiovascular disorders, dermatological disorders, and gynecological disorders, respectively (Table 3). The preferred plant species, i.e., those with the highest FL value, are considered as medicinal plants of higher healing potential and can be used for bioprospecting of important chemicals of pharmaceutical importance (Phillips & Gentry, 1993, Tahir *et al.* 2021).

Plants with lower FL values do not necessarily indicate their lack of importance but suggest that traditional knowledge about them may be at risk of being lost (Chaudhary *et al.* 2006). The low fidelity level of some plants like *Berberis aristata* and *Neopicrorhiza scrophulariiflora* may also indicate very little knowledge among the locals of the Khas community in the Ramaroshan village regarding the use of these medicinal plants. Therefore, the traditional knowledge of species even with low FL in treating some diseases should be preserved (Chaachouay *et al.* 2019).

Among the total 155 plant species documented, 91% were classified as having lowest use value (1-1.5), 6% as moderate value (1.5-2), and 2% as high value (2-2.5) (Figure 8). Notable species with high use values included *Spinacia oleracea* (2.5), *Acorus calamus* (2.35), *Tsuga dumosa* (2.11), *Ilex dipyrena* (2), and *Rumex nepalensis* (2). Conversely, *Aesculus indica, Allium carolianianum, Astilbe rivularis, Bergenia ciliata, Bistorta amplexicaulis, Coriaria nepalensis,* and *Zanthoxylum oxyphyllum*

were among the species with the lowest use value (1). As such variations in use values are believed to be caused by variations in vegetation and geo-climate of the area (Bibi *et al.* 2014) similar factors may have contributed to differences in use values in the present study.

Table 3. Fidelity level (FL) of different species for different ailments categories

Ailments category	Disorders	Name of plants used	FL
Anti-cancer	Cancer	*Taxus* sp.	100.0
Antidote	Poisonous	*Delphinium denudatum*	33.3
Anti-venom	Snakebite	*Paris polyphylla*	13.0
		Ficus auriculata	100.0
Cardio-vascular disorder	Blood pressure, heart problems	*Prinsepia utilis*	100.0
Dermatological disorder	Cuts, burns, wounds, carbuncle burst	*Ageratina adenophora*	100.0
Fever and headache	Fever and headache	*Picrorhiza scrophulariiflora*	25.0
		Paris polyphylla	21.7
Gastro-intestinal disorder	Stomachache, Dysentery,	*Hippolytia longifolia*	81.3
	Constipation, Indigestion, gastritis, vomiting, diarrhea, blood in stool	*Hymenidium dentatum*	71.4
Gynecological disorders	Fertility, menstruation, Urinary problems, lactation	*Thalictrum cultratum*	100.0
Miscellaneous	Leech pain, cooling body, eye problems, jaundice, to ward off evil spirit	*Berberis aristata*	20.0
Oral and dental		*Agave vivipara*	50.0
	Mouth allergies, toothache	*Berberis aristata*	26.7
Respiratory problems		*Hymenidium dentatum*	25.7
	Cough, cold, asthma	*Picrorhiza scrophulariiflora*	41.7
Skeleton-muscular	Back pain, body pain, swelling, fracture, joint pain, muscle cramps	*Rheum austral*	50.0
		Agave vivipara	50.0

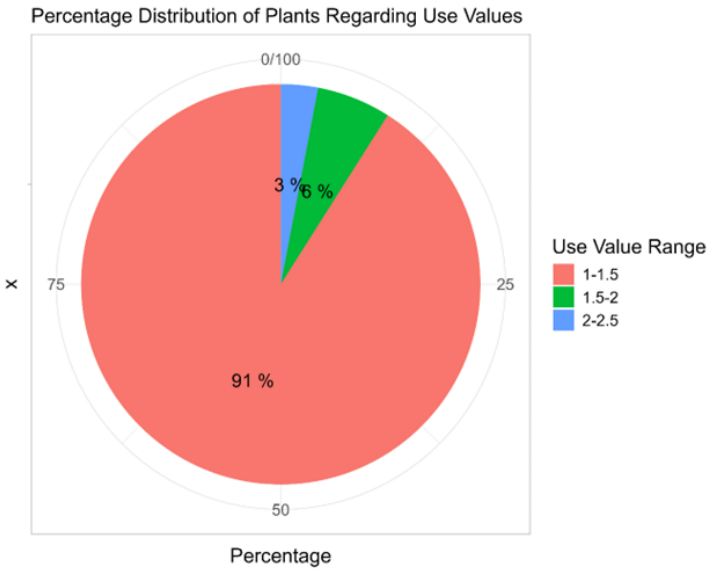

Figure 8. Pie-chart showing three different categories of uses values

Among the total of 155 species, 28 species were found to have new use reports in Nepal including 14 uses for medicinal purpose (Table 4). Use reports are different from other articles, including the use of *Ageratina adenophora* leaves in ophthalmic problems while used in affected areas area of cuts and wounds (Rana *et al.* 2025). Use of *Allium carolinianum* bulbs to treat swellings in cattle is new use report for the species which has been reported being used by women after post parturition as a substitute of meat in the Manang district (Bhattarai & Chaudhary, 2006). Use of leaf paste of *Alnus nepalensis* to treat leg injuries are some of the examples of new use reports for medicinal purposes in west Nepal. Some other common medicinal plants like *Berberis aristata, Corallodiscus lanuginosus, Cynodon dactylon, Dactylorhiza hatagirea* and different species of *Delphinium* were used in this area.

Table 4. List of new use reports of plants for Nepal

Botanical Names	Family	Nepali Name	Voucher No	Life Form	Parts Used	Use Category	Use Value	Uses
Aesculus indica (Wall.ex Cambess.) Hook.	Sapindaceae	**Paagar**	SG 34	Tree	H	V	1	Seeds for the treatment of cattle´s wounds
Agave vivipara L.	Asparagaceae	**Hattibado**	SG 63	Shrub	G	V	1	Young shoot used as vegetables for mouth allergies
Ageratina adenophora (Spreng.) R.M.King & H.Rob.	Asteraceae	**Mawobadi bhad**	SG 51	Herb	D	V	1	Leaf for curing eyes
Allium carolinianum Redouté	Amaryllidaceae	**Bhaisey lasun**	SG 70	Herb	I	V	1	Bulb for cattle's swollen legs
Alnus nepalensis D.Don	Betulaceae	**Uttis**	SG 102	Tree	A	V	1	Bark pastes for leg injury
Astilbe rivularis Buch.-Ham. ex D.Don	Saxifragaceae	**Jhusey**	SG 38	Herb	F	V	1	Root of *Astilbe rivularis* mixed with *Paris polyphylla* and *Thalictrum cultratum* for improve immunity of women after childbirth
Berberis aristata DC.	Berberidaceae	**Trikhula/ Chotra**	SG 88	Shrub	F	VII	1	Root juice as leech repellent
Daphniphyllum himalense (Benth.) Müll.Arg.	Daphniphyllaceae	**Ragatchana/Ragatchalno**	SG 32	Tree	D	VII	1	Leaf used for making traditional leaf plate (*Tapari*)
Delphinium denudatum Wall. ex Hook.f. & Thomson	Ranunculaceae	**Nirbisi**	SG 147	Shrub	F	V	1	Root powder used for joint pain, antidote and antivenom
Delphinium vestitum Wall. ex Royle	Ranunculaceae	**Mauramulo**	SG 64	Herb	F	V	1	Root paste for cuts and backpain
Dicliptera bupleuroides Nees	Acanthaceae	**Saanokaaley ayero**	SG 17	Herb	D	II	1	Fodder
Drepanostachyum falcatum (Nees) Keng f.	Poaceae	**Nigalo**	SG 79	Shrub	G	IX	1	Shoot for religious ceremony
Erigeron karvinskianus DC.	Asteraceae	**Khantey bhad**	SG 33	Herb	B	IX	1	Worshiping God
Euphorbia royleana Boiss.	Euphorbiaceae	**Seudi**	SG 72	Tree	J	VII	1	Whole plant for removing evil spirits
Hippolytia longifolia (REch.f.) C.Shih	Asteraceae	**Bayojadi**	SG 142	Herb	F	V	1	Fine powder of roots mixed with ghee used for postnatal women
Lyonia ovalifolia (Wall.) Drude	Ericaceae	**Ayer**	SG 10	Tree	G	IX	1	Wood for burning dead bodies in funeral Ceremony

Machilus duthiei King ex Hook.f.	Lauraceae	**Kupey caulo/Mahilo caulo**	SG 46	Tree	D	II	1	Leaf as Fodder
Machilus gamblei King ex Hook.f.	Lauraceae	**Kaulo**	SG 23	Tree	D	II	1	Leaf as Fodder
Plantago asiatica subsp. *erosa* (Wall.) Z. Y. Li	Plantaginaceae	**Dhanbaley**	SG 04	Herb	F	V	1	Root is used for stomach pain of children and also lose heat from body especially for children
Primula glomerata Pax.	Primulaceae	**Dabey**	SG 07	Herb	D	VII	1	For making leaf plates for serving rice pudding
Prinsepia utilis Royle	Rosaceae	**Dhatelo**	SG 115	Shrub	B, H	V, IX	1	Flower for worshiping God. Seeds for heart problems
Prunus cerasoides Buch.-Ham. ex D.Don	Rosaceae	**Painyu**	SG 76	Tree	G	VII	1	Stem for handicrafts
Pyracantha crenulata (D.Don) M.Roem.	Rosaceae	**Ghagaaru**	SG 06	Shrub	G	VII	1.13	Stem for handicrafts i.e, for making police stick
Reinwardtia indica Dumort.	Linaceae	**Pyaali phool**	SG 118	Shrub	B	IX	1	Offerings to God during dry season
Rhododendron campanulatum D.Don	Ericaceae	**Chimal**	SG 78	Shrub	B	IX	1	Flower for worshiping God
Scutellaria scandens Buch.-Ham.ex D.Don	Lamiaceae	**Charikhutte**	SG 100	Herb	D	II	1	Fodder
Thalictrum cultratum Wall.	Ranunculaceae	**Chatarey**	SG 08	Herb	F	V	1	Root powder with boiled milk given to boost immunity for women after childbirth, Root powder mixed with rice flour for stopping excessive bleeding during mensuration
Zanthoxylum oxyphyllum Edgew.	Rutaceae	**Laato timur**	SG 35	Shrub	C	V	1	Seed boiled in water used for fever

***Legend**: Parts used: A: Bark, B: Flower, C:Fruit, D:Leaf, E:Plants exudates, F:Root, G: Shoot, H:Seed, I:Underground parts, J:Whole Plant, Use categories: I:Dye, II:Fodder, III:Food, IV:Fuelwood, V:Medicine, VI:Oil, VII:Others, VIII:Poison, IX:Social and Religious, X:Timber)*

The people of Khas community are bound by cultural and religious traditions in their use of local plants. For instance, the leaves of *Daphniphyllum himalayense* were used to make leaf plates locally known as tapari. Similarly, the leaves of *Primula glomerulata*, were used as plates for offering rice pudding during religious festivals. The leaves of *Scutellaria scandens* were used as fodder. Seeds of *Aesculus indica* were used for cattle's wounds, flowers of *Erigeron karvinskianus, Reinwardtia indica, Prinsepia utilis,* and *Rhododendron campanulatum* are used for worshiping God, wood of *Lyonia ovalifolia* used for burning dead bodies, and the stem of *Pyracantha crenulata* used for making police stick.

Conclusion

The study revealed that the Khas Community in Ramaroshan rural municipality, Achham district, West Nepal possessed rich ethnobotanical knowledge. Even though most of the local healers were reluctant to participate in the study and share their knowledge on medicinal plants, novel use reports for twenty-eight species of plants in the study area is a proof their high dependence on local plant resources. It also indicates their rich ethnobotanical knowledge. Therefore, further studies on ethnobotany of the Khas community in the far Western Nepal representing wider audience and large geographical area are suggested. These studies will help unravel the novel ethnobotanical uses of the plants in those areas.

Declarations

List of abbreviations: FL: Fidelity Level, ICF: Informant Consensus Factor, UV: Use Values, WHO: World Health Organization, NSO: National Statistics Office, RRMP: Ramaroshan rural municipality

Ethics approval and consent to participate: All the participants were informed in advance about the aim of the study and the data were gathered with proper consent.

Consent for publication: Not applicable

Availability of data and materials: Data available in the manuscript is provided within the article.

Competing interests: The authors declare no conflict of interest

Funding: Not applicable

Author contributions: GTM and DRP conceived the idea and designed the research. SN collected data in the field. SC contributed with data analysis and SN, SC, and DRP contributed to draft manuscript preparation. All the authors contributed to the final editing and approval.

Acknowledgments

The authors are thankful to Mrs. Durga Shahi and the local inhabitants for plant collection. We also extend our gratitude to Mr. La Dorchee Sherpa, Mrs. Pratikshya Chalise, Mrs. Sajita Dhakal, and Mr. Hem Raj Poudel for plant identification and to Mr. Shiva Gaire for preparing a study map area in Python programming. And also, thanks to Mr. Sagar Subedi, Scientific Officer at NAST, for his contribution in generating the dendrogram.

Literature Cited

Acharya KP, Acharya R. 2010. Eating from the Wild: Indigenous knowledge on wild edible plants in Parroha VDC of Rupandehi Ddistrict, Central Nepal. International Journal of Social Forestry 3(1):28-48.

Acharya R, Acharya KP. 2009. Ethnobotanical study of medicinal plants used by Tharu community of Parroha VDC, Rupandehi district, Nepal. Scientific World 7(7):80-84.

Adhikari K, Uprety Y, Pyakurel D, Thagunna K, Bhatta LD, Chaudhary RP. 2021. Healthcare choices and use of medicinal plants: An ethnobotanical study in Kanda area of Bajhang district, Kailash Sacred Landscape, Nepal. In: Abbasi AM, Bussman RW. (eds). Ethnobiology of Mountain Communities in Asia. Ethnobiology, Springer, Pp. 381-407. doi: 10.1007/978-3-030-55494-1_18

Adhikari M, Thapa R, Kunwar RM, Devkota HP, Poudel P. 2019. Ethnomedicinal uses of plant resources in the Machhapuchchhre rural municipality of Kaski district, Nepal. Medicines 6(69):1-30. doi: 10.3390/medicines6020069

Ale R, Raskoti BB, Shrestha K. 2009. Ethnobotanical knowledge of Magar community in Siluwa VDC, Palpa district, Nepal. Journal of Natural History Museum 24:59-72.

Ambu G, Chaudhary RP, Mariotti M, Cornara L. 2020. Traditional uses of medicinal plants by ethnic people in the Kavrepalanchok district, Central Nepal. Plants 9(6):759. doi: 10.3390/plants9060759

Ansari AA, Shalini Saggu SS, Al-Ghanim SM, Abbas ZK, Gill SS, Khan FA, Irfan M, Dar MI, Khan AK. 2017. Aquatic plant biodiversity: A biological indicator for the monitoring and assessment of water quality. In: Ansari AA. (ed). Plant Biodiversity: Monitoring, Assessment and Conservation. CABI International, UK, Pp. 218-27.

Bajracharya MB. 1979. Ayurvedic medicinal plants and general treatment. Piyusavarshi Ausadhalaya, Kathmandu.

Balami NP. 2004. Ethnomedicinal uses of plants among the Newar community of Pharping village of Kathmandu district, Nepal. Tribhuvan University Journal 24(1):13-19.

Bekalo TH, Woodmatas SD, Woldemariam ZA. 2009. An ethnobotanical study of medicinal plants used by local people in the lowlands of Konta special woreda, Southern Nations, Nationalities and Peoples Regional State, Ethiopia. Journal of Ethnobiology and Ethnomedicine 5(26):1-15. doi: 10.1186/1746-4269-5-26.

Bhaila A, Shakya S, Kunwar B, Baral B, Chaudhary S, Munankarmi NN. 2022. Ethnomedicinal exploration of plants utilized by the people of Suryabinayak municipality in Bhaktapur district, Nepal. Vegetos 35(3):763-74. doi: 10.1007/s42535-021-00339-2.

Bhandari P, Gurung MB, Subedi CK, Chaudhary RP, Basnet K, Gurung J, Uprety Y, Neupane A, Shrestha KK. 2021. Traditional use of medicinal plants in the Chyangthapu-Phalaicha biological sub-corridor, Panchthar district, Kangchenjunga Landscape, Nepal. Ethnobotany Research and Applications 22(25):1-43. doi: 10.32859/ERA.22.25.1-43.

Bhat RB, Jacobs TV. 1995. Traditional herbal medicine in Transkei. Journal of Ethnopharmacology 48:7-12. doi: 10.1016/0378-8741(95)01276-J

Bhatt MD, Adhikari YP, Kunwar RM. 2021. Ethnomedicinal values of weeds in Kanchanpur district, Far-Western Nepal. Ethnobotany Research and Applications 21(19):1-19. doi: 10.32859/era.21.19.1-19.

Bhatt MD, Kunwar RM. 2020. Distribution pattern and ethnomedicinal uses of plants in Kanchanpur district, Far-Western Nepal. Ethnobotany Research and Applications 20:1-21. doi: 10.32859/era.20.14.1-21.

Bhattarai KR. 2018. Ethnobotanical study of plants used by Thami community in Ilam district, Eastern Nepal. Our Nature 16(1):55-67. doi: 10.3126/on.v16i1.22123.

Bhattarai KR. 2020. Ethnobotanical survey on plants used in Mai municipality of Ilam district, Eastern Nepal. Banko Janakari 30(2):11-35. doi: 10.3126/banko.v30i2.33476.

Bhujel D, Chhetri G, Rai YK. 2020. Notes on ethno-biological aspect of Mankar Sankranti celebrated by Nepali community of Darjeeling and Sikkim Himalayas. NeBio 11(1):20-26.

Bibi T, Ahmad M, Tareen RB, Tareen NM, Jabeen R, Rehman SU, Sultana S, Zafar M, Yaseen G. 2014. Ethnobotany of medicinal plants in district Mastung of Balochistan Province-Pakistan. Journal of Ethnopharmacology 157:79-89. doi: 10.1016/j.jep.2014.08.042.

Bridson D, Forman L. 1989. The Herbarium Handbook. Royal Botanic Gardens, Kew UK.

Budha-Magar S, Bhandari P, Ghimire SK. 2020. Ethno-medicinal survey of plants used by Magar (Kham) community, Rolpa district, Western Nepal. Ethnobotany Research and Applications 19:1-29. doi: 10.32859/era.19.18.1-29.

Budha-Magar S. 2020. Ethnic uses of plant species among Magar people in Nepal. In: Rai M, Bhattarai S, Feitosa CM. (eds). Wild Plants: The Treasure of Natural Healers. CRC Press, Pp. 64-89

Castagnetti F, Bhatta J, Greene A. 2021. An offering of grain: The agricultural and spiritual cycle of a food system in the Kailash Sacred Landscape, Darchula, Far Western Nepal. Frontiers in Sustainable Food Systems 5:646719. doi: 10.3389/fsufs.2021.646719

Chaachouay N, Benkhnigue O, Fadli M, El Ibaoui H, Zidane L. 2019. Ethnobotanical and ethnopharmacological studies of medicinal and aromatic plants used in the treatment of metabolic diseases in the Moroccan Rif. Heliyon 5. doi: 10.1016/j.heliyon.2019.e02191.

Chaudhary MI, He Q, Cheng YY, Xiao PG. 2006. Ethnobotany of medicinal plants from Tian Mu Shan Biosphere Reserve, Zhejiang-province, China. Asian Journal of Plant Sciences 5(4):646-53.

Chaudhary S, Aryal B. 2025. Diversity and distribution of tree species with respect to edaphic and physical factors in Shorea robusta Gaertn. forests along the altitudinal gradient. Vegetos 38(2):813-824. doi: 10.1007/s42535-024-00854-y

Chaudhary S, Thapa Magar G, Sah SN, Parajuli S. 2020. Ethnic plants of Tharu community of Eastern Nepal. International Journal of Applied Sciences and Biotechnology 8(2):223-30. doi: 10.3126/ijasbt.v8i2.28325.

Chaudhary SK, Rai SK. 2017. Ethnobotany of Tharu community of Pakali, Sunsari, Nepal. Nepalese Journal of Biosciences 7(1):58-71. doi: 10.3126/njbs.v7i1.41767.

Christensen M, Devkota S, Bhattarai S. 2008. Use of wild edible mushrooms in the Annapurna Conservation Area, Nepal. Journal of Mycology and Phyotopathology Society Nepal 1:1-6.

Corlett RT. 2016. Plant diversity in a changing world: status, trends, and conservation needs. Plant Diversity 38(1): 10-16.

Dangol DR, Maharjan KL, Maharjan SK, Acharya AK. 2017. Wild edible plants in Nepal. In: Joshi BK, KC HB, Acharya AK. (eds). Conservation and utilization of agricultural plant genetic resources of Nepal: Proceedings of Second National Workshop, Dhulikhel 22-23 May 2017. NAGRC, FDD, DOA, MOAD, Kathmandu, Nepal, Pp. 390-407.

Dewan K, Shrestha N, Sapkota R, Rai J, Lama S, Shrestha BB. 2023. Medicinal ethnobotany of the Yakkha community in Eastern Nepal. Ethnobotany Research and Applications 26:1-34.

Dulal K, Chaudhary S, Uprety Y, Shrestha N, Shakya S, Munankarmi NN. 2022. Ethnomedicinal plants used by the local people of Changunarayan municipality, Bhaktapur, Nepal. Ethnobotany Research and Applications 23:1-27. doi: 10.32859/era.23.37.1-27.

Friedman J, Yaniv Z, Dafni A, Palewitch D. 1986. A preliminary classification of the healing potential of medicinal plants, based on a rational analysis of an ethnopharmacological field survey among Bedouins in the Negev desert, Israel. Journal of Ethnopharmacology 16(2-3):275-87.

Gautam SK, Thapa Magar G, Chhetri MK, Chaudhary S. 2022. Ethnobotanical study of Janachana community forest in Rautahat district, Nepal. Himalayan Journal of Science and Technology 6:51-62. doi: 10.3126/hijost.v6i1.50653.

Gebashe F, Moyo M, Aremu AO, Finnie JF, Van Staden J. 2019. Ethnobotanical survey and antibacterial screening of medicinal grasses in KwaZulu-Natal province, South Africa. South African Journal of Botany 122:467-74. doi: 10.1016/j.sajb.2018.07.027.

Gewali, M. B., & Awale, S. (2008). Aspects of traditional medicine in Nepal. Institute of Natural Medicine University of Toyama, Japan. Pp 140-142.

Ghimire SK, Bista G, Lama NS, Craig SR, Lama W, Gurung TN, Bista T, Gurung N, Gurung TD, Zangpo T, Lama TC. 2021. Without the plants we have no medicine: Sowa Rigpa, ethnobotany, and conservation of threatened species in Nepal. WWF Nepal and Himalayan Amchi Association, Kathmandu Nepal.

Giday M, Teklehaymanot T, Animut A, Mekonnen Y. 2007. Medicinal plants of the Shinasha, Agew-Awi and Amhara peoples in northwest Ethiopia. Journal of Ethnopharmacology 110:516-25. doi: 10.1016/j.jep.2006.10.011.

Gurung M. 2023. Ethnomedicinal study of plants used by Newar community in Sindhupalchowk district, Nepal. Journal of Plant Resources 21(1):32-39. doi: 10.3126/bdpr.v21i1.57205.

Harshberger JW. 1896. The purposes of Ethno-Botany. Botanical Gazette 21(3):146-54.

International Society of Ethnobiology. 2006. ISE code of ethics (with 2008 Additions). http://ethnobiology.net/code-of-ethics/

Jain SK, Saklani A. 1991. Observations on the ethnobotany of the Tons valley region in the Uttarkashi district of the northwest Himalaya, India. Mountain Research and Development 11:157-61.

Jiang LM, Sattar K, Lü GH, Hu D, Zhang J, Yang XD. 2022. Different contributions of plant diversity and soil properties to the community stability in the arid desert ecosystem. Frontiers in Plant Science 13:969852.

Jnawali B, Neupane, A. 2021. An assessment of floristic diversity and uses of plant resources in Madane Protected Forest Gulmi, Western Nepal. Journal of Plant Resources 19:62-74

Joshi AR, Joshi K. 2005. Ethnobotanical study of Bagmati and Langtang watershed, Nepal: Raw materials of plant origin and their indigenous uses. Journal of Non-Timber Forest Products 12(2):76-82.

Kafle, DR. 2024. Uncovering the indigenous Khas legacy of resilience and transformation in Western Nepal. KMC Journal 6(1):57-70.

Karmacharya SB, Shrestha A. 2019. Ethnobotany of Bhaktapur municipality. Bagiswori Journal 1(1):1-6. doi: 10.3126/bagisworij.v1i1.56313.

KC M, Phoboo S, Jha PK. 2010. Ecological study of Paris polyphylla Sm. Ecoprint: An International Journal of Ecology 17:87-93.

Khanal A, Devkota HP, Kaundinnyayana S, Gyawali P, Ananda R, Adhikari R. 2021. Culinary herbs and spices in Nepal: A review of their traditional uses, chemical constituents, and pharmacological activities. Ethnobotany Research and Applications 21: 1-18. doi: 10.32859/era.21.40.1-18.

Kharal DK, Oli BN, Poudel I. 2011. Distribution and availability of raw materials for production of Nepali handmade paper from Daphne species in Darchula district, Nepal. Banko Janakari 21(2):24-30.

Kunwar RM, Adhikari N. 2005. Ethnomedicine of Dolpa district, Nepal: The plants, their vernacular names and uses. Lyonia 8(1): 43-49.

Kunwar RM, Bussmann RW. 2006. Ficus (Fig) species in Nepal: A review of diversity and indigenous uses. Lyonia 11(1): 85-97.

Kunwar RM, Duwadee NP. 2003. Ethnobotanical notes on Flora of Khaptad National Park (KNP), far-Western Nepal. Himalayan Journal of Sciences 1(1):25-30. doi: 10.3126/hjs.v1i1.182.

Kunwar RM, Mahat L, Acharya RP Bussmann RW. 2013. Medicinal plants, traditional medicine, markets and management in Far-West Nepal. Journal of Ethnobiology and Ethnomedicine 9(24):1-10. doi: 10.1186/1746-4269-9-24.

Kunwar RM, Mahat L, Sharma LN, Shrestha KP, Kominee H, Bussmann RW. 2012. Underutilized plant species in far west Nepal. Journal of Mountain Science 9(5):589-600. doi: 10.1007/s11629-012-2315-8.

Kunwar RM, Nepal BK, Kshhetri HB, Rai SK, Bussmann RW. 2006. Ethnomedicine in Himalaya: A case study from Dolpa, Humla, Jumla and Mustang districts of Nepal. Journal of Ethnobiology and Ethnomedicine 2(27):1-6. doi: 10.1186/1746-4269-2-27.

Kunwar RM, Shrestha KP, Bussmann RW. 2010. Traditional herbal medicine in far-west Nepal: A pharmacological appraisal. Journal of Ethnobiology and Ethnomedicine 6(35):1-18. doi: 10.1186/1746-4269-6-35.

Kunwar, RM, Uprety Y, Burlakoti C, Chowdhary CL, Bussmann RW. 2009. Indigenous use and ethnopharmacology of medicinal plants in far-west Nepal. Ethnobotany Research and Applications 7:005-028. Doi: 10.17348/era.7.0.5-28

Kunwar, RM, Baral B, Luintel S, Uprety Y, Poudel RC, Adhikari B,….. Bussmann RW. 2022. Ethnomedicinal landscape: Distribution of used medicinal plant species in Nepal. Journal of Ethnobiology and Ethnomedicine 18(1):34. doi: 10.1186/s13002-022-00531-x

Kurmi PP, Baral SR. 2017. Ethnomedical uses of plants from Salyan district, Nepal. Banko Janakari 14(2): 35-39.

Kutal D, Kunwar RM, Baral K, Sapkota P, Sharma HP, Rimal B. 2021. Factors that influence the plant use knowledge in the middle mountains of Nepal. PLoS ONE 16(2):e0246390. doi: 10.1371/journal.pone.0246390.

Lama YC, Ghimire SK, Aumeeruddy-Thomas A. 2001. Medicinal plants of Dolpo: Amchi's knowledge and conservation. WWF Nepal Program.

Magar RA, Mallik AR, Chaudhary S, Parajuli S. 2022. Ethno-medicinal plants used by the people of Dharan, Eastern Nepal. Indian Journal of Traditional Knowledge 21(1):72-80.

Maharjan M, Khadgi P, Vaidya S. 2020. Phyto-cultural heritage of Newah community in Chapagaun, Nepal. Journal of Plant Resources 18(1):235-43.

Mahwasane ST, Middleton L, Boaduo N. 2013. An ethnobotanical survey of indigenous knowledge on medicinal plants used by the traditional healers of the Lwamondo area, Limpopo province, South Africa. South African Journal of Botany 88:69-75. doi: 10.1016/j.sajb.2013.05.004.

Malla B, Chhetri RB. 2009. Observations on some ethnomedicinal plants in Kavrepalanchowk district, Nepal. Ethnobotany 21:41-45.

Malla B, Gauchan DP, Chhetri RB. 2015. Ethnobotanical study on medicinal plants in Parbat district of Western Nepal. PhD Thesis, Department of Environmental Science and Engineering, School of Science, Kathmandu University, Dhulikhel, Kavre, Nepal.

Mallik AR, Chaudhary S, Shrestha S. 2020. Useful valuable plants of Maithili community in Eastern Nepal: An ethnobotanical study. Bangladesh Journal of Plant Taxonomy 27(2): 439-446.

Manandhar NP. 2002. Plants and People of Nepal. Timber Press, USA.

Miehe G, Miehe S, Boehner J, Baeumler R, Ghimire SK, Bhattarai K, Chaudhary RP, Subedi M, Jha PK, Pendry C. 2015. Vegetation Ecology. In G. Miehe, C. Pendry, Chaudhary R. (eds). Nepal: An introduction to the natural history, ecology and human environment of the Himalayas Royal Botanic Garden Edinburgh, UK, Pp. 385-472.

Milliken W, Albert B, Gomez GG. 1999. Yanomami: A Forest People. Royal Botanic Gardens, Kew. UK.

Munankarmi NN, Chaudhary S, Neupane S, Shyaula SL, Zhang W, Gauchan DP. 2025. Ethnomedicinal uses of plant resources in Bethanchowk rural municipality of Kavrepalanchowk district, Central Nepal. Ethnobotany Research and Applications 30:1-47.

Niroula G. 2016. The Religious Use and Protection of Plants among the Brahmin and Limbu People of Ilam, Nepal. MSc dissertation, Norwegian University of Life Sciences.

Njoroge GN, Bussmann RW, Gemmill B, Newton LE, Ngumi VW. 2004. Utilization of weed species as source of traditional medicines in Central Kenya. Lyonia 7(2): 71-87.

NSO. 2023. National Population and Housing Census 2023. National Statistics Office, Thapathali, Kathmandu.

Ojha Khatri S, Chaudhary S, Shrestha N, Munankarmi NN. 2021. Ethnomedicinal study and phytochemical screening of selected plants in Jhule, Dolakha district, Nepal. Vegetos 34(4):834-46. doi: 10.1007/s42535-021-00266-2.

Panthi MP. 2013. Indigenous knowledge on use of local fodder trees in mid hills of west Nepal. Tribhuvan University Journal 28(1-2):171-80. doi: 10.3126/tuj.v28i1-2.26239.

Paudel PK., Bhattarai BP, Kindlmann, P. 2011. An overview of the biodiversity in Nepal. In: Kindlmann P. (ed). Himalayan Biodiversity in the Changing World. Springer, Pp 1-40.

Phillips O, Gentry AH. 1993. The useful plants of Tambopata, Peru: II. Additional Hypothesis Testing in Quantitative Ethnobotany. Economic Botany 47(1):33-43. doi: 10.1007/BF02862204.

Poffenberger M., McGean B, Khare A, Campbell J (eds.). 1992. Field methods manual. Volume II. Community forest economy and use Patterns: Participatory rural appraisal (PRA) methods in south Gujarat, India. Society for Promotion of Wastelands Development, New Delhi.

Polunin O, Stainton A. 1984. Flowers of the Himalayas. Oxford University Press. New Delhi, India.

Pradhan SP, Chaudhary RP, Sigdel S, Pandey BP. 2020. Ethnobotanical knowledge of Khandadevi and Gokulganga rural municipality of Ramechhap district of Nepal. Ethnobotany Research and Applications 20(7):1-32. doi: 10.32859/era.20.07.1-32.

Rai SK. 2004. Medicinal Plants Used by Meche People of Jhapa District, Eastern Nepal. Our Nature 2(1):27-32. doi: 10.3126/on.v2i1.321.

RBG. 2016. State of the World's Plants. Royal Botanic Gardens, Kew, UK.

Rijal A. 2011. Surviving on knowledge: Ethnobotany of Chepang community from midhills of Nepal. Ethnobotany Research and Applications 9:181-215. doi: 10.17348/era.9.0.181-215.

Rokaya MB, Münzbergová Z, Timsina B. 2010. Ethnobotanical Study of Medicinal Plants from the Humla District of Western Nepal. Journal of Ethnopharmacology 130:485-504. doi: 10.1016/j.jep.2010.05.036.

Rokaya MB, Uprety Y, Poudel RC, Timsina B, Münzbergová Z, Asselin H, Tiwari A, Shrestha SS, Sigdel SR. 2014. Traditional uses of medicinal plants in gastrointestinal disorders in Nepal. Journal of Ethnopharmacology 158(PART A):221-29. doi: 10.1016/j.jep.2014.10.014.

RRMP. 2018. Ramaroshan rural municipality profile. Ramaroshan rural municipality, Ramaroshan, Achham, Nepal.

Schippmann U, Leaman DJ, Cunningham AB. 2002. Impact of cultivation and gathering of medicinal plants on biodiversity: global trends and issues. In: FAO, Biodiversity and the ecosystem approach in agriculture, forestry and fisheries. Satellite event on the occasion of the ninth regular session of the Commission on Genetic Resources for Food and Agriculture. Rome, 12-13 October 2002. Inter-Departmental WorkingGroup on Biological Diversity for Food and Agriculture. Rome.

Sharma PR. 2004. The state and society in Nepal: Historical foundations and contemporary trends. 3rd edition. Himal Books, 353p

Sharma LN, Bastakoti R. 2009. Ethnobotany of Dioscorea L. with emphasis on food value in Chepang Communities in Dhading district, Central Nepal. Botanica Orientalis: Journal of Plant Science 6:12-17. doi: 10.3126/botor.v6i0.2905.

Shrestha D. 2013. Indigenous vegetables of Nepal for biodiversity and food security." International Journal of Biodiversity and Conservation 5(3):98-108. doi: 10.5897/IJBC11.124.

Shrestha N, Shrestha S, Koju L, Shrestha KK, Wang Z. 2016. Medicinal plant diversity and traditional healing practices in Eastern Nepal. Journal of Ethnopharmacology 192:292-301. doi: 10.1016/j.jep.2016.07.067.

Shrestha PM, Dhillion SS. 2003. Medicinal plant diversity and use in the highlands of Dolakha district, Nepal. Journal of Ethnopharmacology 86:81-96. doi: 10.1016/S0378-8741(03)00051-5.

Shrestha S, Rai SK. 2013. Survey of marketable vegetables and edible fruits in Dharan, Eastern Nepal. Nepalese Journal of Biosciences 2:134-47. doi: 10.3126/njbs.v2i0.7501.

Shrestha KK, Bhattarai S, Bhandari P. 2018. Handbook of flowering plants of Nepal (Vol. 1 Gymnosperms and Angiosperms: Cycadaceae-Betulaceae). Scientific publishers, Jodhpur, India.

Sigdel SR, Rokaya MB, Timsina B. 2013. Plant inventory and ethnobotanical study of Khimti hydropower project, Central Nepal. Scientific World 11(11):105-12. doi: 10.3126/sw.v11i11.8563.

Sigdel SR, Rokaya MB. 2011. Utilization of plant resources in Dang district, west Nepal. Banko Janakari 21(2):45-54.

Silwal Gautam R, Joshi Shrestha S, Shrestha I. 2022. Ethnobotanical review of wild edible plants of Nepal. Journal of Natural History Museum 32: 87-136.

Silwal Gautam R, Joshi Shrestha S, Shrestha I. 2023. Ethnomedicinal plant resources of Tamang community in the Konjyosom rural municipality, Central Nepal. Ethnobotany Research and Applications 25:1-29.

Singh AG, Panthi MP, Tewari DD. 2011. Ethno medicinal plants used by the Tharu and Magar communities of Rupandehi district, Western Nepal. Current Botany 2(2):30-33.

Singh AG, Singh MP, Tewari DD. 2012. Wild plants used as vegetable in Rupandehi district of Nepal and their ethnomedicinal importance. Journal of Natural History Museum 26:111-25. doi: 10.3126/jnhm.v26i0.14135.

Singh B, Rai KM, Bhatt KC, Chaudhury R, Dubey SK, Ahlawat SP. 2022. Ethnobotanical notes on some potential wild edible fruits used by the Bhotia community of Niti valley, Uttarakhand, India. Indian Journal of Traditional Knowledge 21(1):135-44. doi: 10.56042/ijtk.v21i1.35647.

Singh J, Rajasekaran A, Negi AK, Pala NA, Panwar VP, Bussmann RW, Malik ZA. 2023. Potential of wild edible fruits for nutrition in indigenous communities of northwest Himalaya, India. Ethnobotany Research and Applications 25:1-15. doi: 10.32859/era.25.9.1-15.

Singh MP, Malla SB, Rajbhandari SB, Manandhar A. 1979. Medicinal plants of Nepal — retrospects and prospects. Economic Botany 33(2):185-98. doi: 10.1007/BF02858287.

Singh S. 2015. Ethno botanical study of Some wild herb species Parsa District forest of Nepal. Journal of Pharmacognosy and Phytochemistry 4(1):32-40.

Singh S. 2017. Ethnobotanical study of wild plants of Parsa district, Nepal. Ecoprint: An International Journal of Ecology 24:1-12. doi: 10.3126/eco.v24i0.20641.

Singh S. 2020. Wild food plants of Shivapuri Nagarjun National Park in Central Nepal. Pleione 14(1):37-48. doi: 10.26679/pleione.14.1.2020.037-048.

Srithi K, Balslev H, Wangpakapattanawong P, Srisanga P, Trisonthi C. 2009. Medicinal plant knowledge and its erosion among the Mien (Yao) in northern Thailand. Journal of Ethnopharmacology 123(2):335-342. Doi: 10.1016/j.jep.2009.02.035

Tahir M, Gebremichael L, Beyene T, Van Damme P. 2021. Ethnobotanical study of medicinal plants in Adwa district, dentral zone of Tigray regional state, northern Ethiopia. Journal of Ethnobiology and Ethnomedicine 17(71):1-13. doi: 10.1186/s13002-021-00498-1.

Thapa S. 2013. Medico-ethnobotany of Magar community in Salija VDC of Parbat district, Central Nepal. Our Nature 10:176-90.

Trotter RT, Logan MH. 2019. Informant Consensus: A new approach for identifying potentially dffective medicinal plants. In: Etkin NL. (ed). Plants in Indigenous medicine and Diet: Behavioural approaches. Redgrave Publishing Company, Bedford Hills, New York, USA, Pp.91-112.

Upadhyay AK, Gogoi R, Mitra PK. 2021. Ethnobotany of the genus Elatostema J.R. Forster & G. Forster (Urticaceae). Ethnobotany Research and Applications 21:1-24.

Uprety Y, Asselin H, Boon E, Yadav S, Shrestha KK. 2010. Indigenous use and bio-efficacy of medicinal plants in the Rasuwa district, Central Nepal. Journal of Ethnobiology and Ethnomedicine 6(3):1-10.

Uprety Y, Poudel RC, Shrestha KK, Rajbhandary S, Tiwari NN, Shrestha UB, Asselin H. 2012. Diversity of use and local knowledge of wild edible plant resources in Nepal. Journal of Ethnobiology and Ethnomedicine 8(1):16. doi: 10.1186/1746-4269-8-16.

Verpoorte R, Contin A, Memelink J. 2002. Biotechnology for the production of plant secondary metabolites. Phytochemistry Reviews 1:13-25. doi: 10.1023/A:1015871916833.

Watson MF, Akiyama S, Ikeda H, Pendry CA, Rajbhandari KR, Shrestha KK. 2011. Flora of Nepal Volume 3. Royal Botanic Garden Edinburgh, UK.

WHO. 2016. Traditional medicine fact sheet oo. 134. 2008.URL: Http://www.who. Int/Mediacentre/Factsheets/Fs134/En/(Accessed 10.09. 09).

Wondimu T, Asfaw Z, Kelbessa E. 2007. Ethnobotanical study of medicinal plants around ‘Dheeraa’ town, Arsi zone, Ethiopia. Journal of Ethnopharmacology 112:152-61. doi: 10.1016/j.jep.2007.02.014

Appendix 1. Ethnobotanical uses of plants by the local people of Ramaroshan rural municipality with family, local name, life form, part used and uses

S. N	**Botanical Names**	**Family**	**Nepali Name**	**Voucher No**	**Life Form**	**Parts Used**	**Use Category**	**Use Value**	**Uses**	**Similar Use Reports**
1	*Aconitum lethale* Griff.	Ranunculaceae	**Bikh**	SG 52	Herb	F	VIII	1	Anti-poisonous	(Kunwar & Duwadee, 2003)
2	*Acorus calamus* L.	Acoraceae	**Bojho**	SG 61	Herb	I	V	2.35	Rhizome for cough and common cold	(Budha-Magar *et al*. 2020)
3	*Aesculus indica* (Wall. ex Cambess.) Hook.	Sapindaceae	**Paagar**	SG 34	Tree	G, D, H	X, II, V	1	Timber, fodder. Seeds for the treatment of cattle´s wounds	(Kunwar & Duwadee, 2003)
4	*Agave vivipra* L.	Asparagaceae	**Hattibado**	SG 63	Shrub	A, G,	V, III	1	Fiber from leaves used for backpain, and ropes. Young shoot used as vegetables for mouth allergies	(Ambu *et al.* 2020)
5	*Ageratina adenophora* (Spreng.) R.M.King & H.Rob.	Asteraceae	**Mawobadi bhad**	SG 51	Herb	D	V	1	Leaf juice used for eye problems/ pain and stopping blood from cuts and wounds. Leaf for curing eyes	(Ambu *et al*. 2020), (Budha-Magar *et al.* 2020)
6	*Allium carolinianum* Redouté	Amaryllidaceae	**Bhaisey lasun**	SG 70	Herb	I, D	V, III	1	Leaves as vegetables. Bulb for cattle's swollen legs	(Lama *et al*. 2001)
7	*Allium cepa* L.	Amaryllidaceae	**Pyaaj**	SG 73	Herb	I, D	V, III	1	Bulb for stomach pain and leaves as vegetable	(Rokaya *et al.* 2014), (Singh *et al.* 2011)
8	*Allium sativum* L.	Amaryllidaceae	**Lasun**	SG 15	Herb	D, I	V	1	Leaves and bulb for fever	(Khanal *et al.* 2021)
9	*Alnus nepalensis* D.Don	Betulaceae	**Uttis**	SG 102	Tree	G, D	X, V	1	Timber and furniture. Bark pastes for leg injury	(Malla & Chhetri, 2009)
10	*Aloe vera* (L.) Burm.f.	Asphodelaceae	**Gheuri kumeli**	SG 155	Herb	D	V	1	Leaf gel for burns	(Dulal *et al.* 2022)
11	*Arisaema jacquemontii* Blume	Araceae	**Baako**	SG 139	Herb	D	III	1	Leaf edible	(Shrestha 2013)
12	*Artemisia indica* Willd.	Asteraceae	**Paati**	SG 130	Herb	D, B	V, IX	1	Leaf paste for skin disease and flowers for worshiping God	(Bhattarai 2018, Singh *et al.* 2012)
13	*Asparagus racemosus* Willd.	Asparagaceae	**Kurilo**	SG 94	Herb	F, G	V, III	1	Roots for stomach disorders and young shoot as vegetables	(Budha-Magar *et al.* 2020, Rokaya *et al.* 2014)
14	*Astilbe rivularis* Buch.-Ham. ex D.Don	Saxifragaceae	**Jhusey**	SG 38	Herb	F	V	1	Root of *Astilbe rivularis* mixed with *Paris polyphylla* and *Thalictrum cultratum* for improve immunity of women after childbirth	
15	*Berberis aristata* DC.	Berberidaceae	**Trikhula/ Chotra**	SG 88	Shrub	C, F, A	III, V	1	Edible, root juice for stomach pain, fever and diarrhea for children, and bark powder as lowering pressure	(Adhikari *et al.* 2019), (Budha-Magar *et al.* 2020), (Gurung 2023)
									Root juice for mouth allergies	(Ghimire *et al.* 2021)
									Root juice as leech repellent	
16	*Berberis napaulensis* (DC.) Spreng.	Berberidaceae	**Mayeni/ Maina**	SG 65	Shrub	C	III	1	Edible fruits	(Budha-Magar 2020)
17	*Bergenia ciliata* (Haw.) Sternb.	Saxifragaceae	**Silpaadi**	SG 124	Herb	F, D	V	1	Root powder for post-natal women, diarrohea and fever and leaf for body pain	(Bhattarai 2018, Kunwar & Duwadee, 2003, Malla *et al.* 2015)

18	*Betula alnoides* Buch.-Ham. ex D.Don	Betulaceae	**Saud**	SG 116	Tree	G	IV, X	1.25	Stem used for fuelwood and construction purposes	(Malla *et al.* 2015)
19	*Brassaiopsis hainla* (Buch.-Ham.) Seem.	Araliaceae	**Chindey/ Chindeya/Churato**	SG 25	Tree	D	II	1	Fodder	(Jnawali & Neupane, 2021)
20	*Bistorta amplexicaulis* (D.Don) Greene	Polygonaceae	**Chama phool**	SG 28	Herb	D, F	V	1	Root Paste used for cuts, wounds, and gastro-intestinal problems	(Budha-Magar *et al.* 2020)
21	*Brassica* sp	Brassicaceae	**Barsaley**	SG 98	Herb	D, H	III, VI	1	Leaf as vegetables and seeds as oil	(Rijal 2011)
22	*Buddleja asiatica* Lour.	Scrophulariaceae	**Seutaaro**	SG 136	Shrub	D	IX	1	Leaf for worshiping God	(Bhattarai 2018)
23	*Cannabis sativa* L.	Cannabaceae	**Bhango**	SG 30	Herb	H	III	1	Seed as pickle	(Rijal 2011)
24	*Capsicum annuum* L.	Solanaceae	**Bhedey khursaani**	SG 129	Shrub	C	III	1.46	Fruit as vegetables	(Manandhar 2002)
25	*Castanopsis indica* (Roxb. ex Lindl.) A.DC.	Fagaceae	**Katus**	SG 41	Tree	G, C	IV, III	1	Fuelwood and construction purposes, edible fruits	(Malla *et al.* 2015, Manandhar 2002)
26	*Centella asiatica* (L.) Urb.	Apiaceae	**Ghodtaapre**	SG 153	Herb	D	V	1	Leaf paste used for skin diseases and fever	(Malla *et al.* 2015)
27	*Chenopodium album* L.	Amaranthaceae	**Bethu**	SG 144	Herb	J	II	1	Whole plants as vegetables	(Rijal 2011)
28	*Desmostachya bipinnata* (L.) Stapf	Poaceae	**Kush**	SG 152	Herb	J	IX	1	For worshiping God	(Niroula 2016)
29	*Cinnamomum tamala* (Buch.-Ham.) T.Nees & C.H.Eberm.	Lauraceae	**Dalchini**	SG 24	Tree	D, A	III	1	Leaf and barks used for spices	(Rijal 2011)
30	*Cirsium verutum* (D.Don) Spreng.	Asteraceae	**Thakaili**	SG 93	Herb	G	V	1	Young shoots used for rehydrating and urinary problems	(Balami 2004, Malla *et al.* 2015)
31	*Clematis buchananiana* DC.	Ranunculaceae	**Gadiulya**	SG 14	Climber	D	V	1	Cough and cold	(Balami 2004)
32	*Colocasia esculenta* (L.) Schott	Araceae	**Papdo**	SG 109	Herb	J	III	1	Whole plants were dried to make `masaura`and used for long time and also used for cusine	(Malla *et al.* 2015)
33	*Corallodiscus lanuginosus* (Wall. ex R.Br.) B.L.Burtt	Gesneriaceae	**Taampate**	SG 50	Herb	D	V	1	Urinary problems	(Ghimire *et al.* 2021)
34	*Coriandrum sativum* L.	Apiaceae	**Dhaniya**	SG 83	Herb	J, H	III	1	Leaf used in vegetables, and seed as spices	(Rijal 2011)
35	*Coriaria napalensis* Wall.	Coriariaceae	**Machaino**	SG 132	Shrub	C	III	1	Fruit edible	(Gautam *et al.* 2022)
36	*Cucurbita pepo* L.	Cucurbitaceae	**Kadu**	SG 121	Herb	D, C,	III	1	Leaf and fruit used as vegetables	(Manandhar 2002)
37	*Cuscuta reflexa* Roxb.	Convolvulaceae	**Aakash patali**	SG 143	Climber	J	V	1	Powder of whole plant used for jaundice	(Rai 2004)
38	*Cynodon dactylon* (L.) Pers.	Poaceae	**Dubo**	SG 114	Herb	D, G	IX, V	1	Leaf paste used for cuts and wounds, and worshiping Ganesh God in Hindu culture	(Bhatt and Kunwar 2020, Sigdel *et al.* 2013)

									Whole plant for diarrhea	(Manandhar 2002)
39	*Dactylorhiza hatagirea* (D.Don) Soó	Orchidaceae	**Hattajadi/Panchauley**	SG 86	Herb	F	V	1	Root orally used for common cold, stomachache	(Gautam *et al.* 2022), (Rokaya *et al.* 2010)
									Root paste for backpain, and joint pain	(Ghimire *et al.* 2021)
40	*Daphne bholua* Buch.-Ham. ex D.Don	Thymelaeaceae	**Lokta**	SG 39	Shrub	A	VII	1	Fibers from bark used in Nepalese paper production	(Malla *et al.* 2015)
41	*Daphne papyracea* Wall. ex G.Don	Thymelaceae	**Musey badu**	SG 40	Shrub	A	VII	1	Fibers from bark used in Nepalese paper production	(Kharal *et al.* 2011)
42	*Daphniphyllum himalense* (Benth.) Müll.Arg.	Daphniphyllaceae	**Ragatchana/Ragatchalno**	SG 32	Tree	D	VII	1	Leaf used for making traditional leaf plate (*Tapari*)	
43	*Debregeasia longifolia* (Burm.f.) Wedd.	Urticaceae	**Tusarey ghaas**	SG 42	Shrub	C	III	1	Fruit edible	(Singh 2020)
44	*Delphinium denudatum* Wall. ex Hook.f. & Thomson	Ranunculaceae	**Nirbisi**	SG 147	Shrub	F	V	1	Root powder used for joint pain, antidote and antivenom	
45	*Delphinium himalayae* Munz	Ranunculaceae	**Attesi**	SG 122	Herb	F	V	1	Anti-vomiting, cough and cold	(Rokaya *et al*. 2010)
46	*Delphinium vestitum* Wall. ex Royle	Ranunculaceae	**Mauramulo**	SG 64	Herb	F	V	1	Root paste used for curing wounds, and juice used for immunity for post-natal	(Budha-Magar *et al.* 2020)
									Root paste for cuts and backpain	
47	*Dicliptera bupleuroides* Nees	Acanthaceae	**Saanokaaley ayero**	SG 17	Herb	D	II	1	Fodder	
48	*Diplazium* sp	Athyriaceae	**Nigudo**	SG 67	Herb	D	III	1.5	Leaf as vegetables	(Manandhar 2002)
49	*Drepanostachyum falcatum* (Nees) Keng f.	Poaceae	**Nigalo**	SG 79	Shrub	G	VII	1	Agricultural tools locally termed as "Doko"	(Malla *et al.* 2015)
									Shoot for religious ceremony	
50	*Elaeagnus parvifolia* Wall. ex Royle	Elaeagnaceae	**Guenla**	SG 45	Tree	C	III	1.33	Fruit edible	(Budha-Magar *et al.* 2020)
51	*Elatostema sessile* J.R.Forst. & G.Forst.	Urticaceae	**Gaglagdo/ Golka**	SG 31	Shrub	D	III	1	Leaf as vegetables	(Upadhyay *et al.* 2021)
52	*Eleusine coracana* (L.) Gaertn.	Poaceae	**Kodo**	SG 62	Herb	C	III	1	Fruit as cereals	(Manandhar 2002)
53	*Erigeron karvinskianus* DC.	Asteraceae	**Khantey bhad**	SG 33	Herb	D, B	V, IX	1	Flower juice used for toothache, cuts and wounds	
									Worshiping God	
54	*Euphorbia royleana* Boiss.	Euphorbiaceae	**Seudi**	SG 72	Tree	J	IX, VII	1	Protecting house from lightning and thunderstorm, Hollow stem in making musical instrument "*Madal*"	(Bhattarai 2020), (Malla *et al.* 2015)
									Whole plant for removing evil spirits	
55	*Fagopyrum esculentum* Moench	Polygonaceae	**Phaprey saag**	SG 36	Herb	D	III	1.43	Leaf as vegetable	(Gautam *et al.* 2022)

56	*Falconeria insignis* Royle	Euphorbiaceae	**Khirro**	SG 90	Tree	G, E	VII, V	1	Stem used for making musical instruments "*Madal*" and "*Hudka*", Latex for fish poisoning	(Kurmi & Baral, 2017), (Malla *et al.* 2015), (Manandhar 2002)
57	*Ficus auriculata* Lour.	Moraceae	**Timilo/ Timila**	SG 43	Tree	E, D	V, VII	1	Resin used for snakebite and leaf-plate called as "Tapari"	(Malla *et al.* 2015), (Manandhar 2002)
58	*Ficus benghalensis* L.	Moraceae	**Bar**	SG 71	Tree	D	IX	1	For decorating mandaps in marriage ceremony	(Malla *et al.* 2015), (Sigdel & Rokaya, 2011)
59	*Ficus neriifolia* Sm.	Moraceae	**Dudhila/ Dudhelo**	SG 22	Tree	A, C	V, III	1.44	Anti vomiting, and edible fruits	(Malla *et al.* 2015), (Manandhar 2002)
60	*Ficus palmata* Forsk	Moraceae	**Bedu**	SG 27	Tree	D, C	II, III	1.32	Fodder and edible fruits	(Kunwar & Bussmann 2006)
61	*Ficus religiosa* L.	Moraceae	**Peepal**	SG 120	Tree	D	IX	1.87	Leaves used for decorating in marriage ceremony	(Singh 2017)
62	*Ficus sarmentosa* Buch.-Ham. ex Sm.	Moraceae	**Bedula/ Bedulo**	SG 29	Tree	D	II	1	Fodder	(Budha-Magar *et al.* 2020)
63	*Ficus semicordata* Buch.-Ham. ex Sm.	Moraceae	**Khanaya**	SG 110	Tree	D, C	II, III	1	Fodder, and edible fruits	(Kunwar *et al.* 2013)
64	*Fragaria nubicola* (Lindl. ex Hook.f.) Lacaita	Rosaceae	**Gadekaphal**	SG 26	Herb	C	III	1.36	Fruit edible	(Budha-Magar *et al.* 2020)
65	*Fraxinus floribunda* Wall.	Oleaceae	**Angaau**	SG 03	Tree	D, G	II, X	1.54	Fodder and timber	(Panthi 2013)
66	*Garuga pinnata* Roxb.	Burseraceae	**Dabdabey**	SG 81	Tree	G	IV	1	Fuelwood	(Ale *et al.* 2009)
67	*Girardinia diversifolia* (Link) Friis	Urticaceae	**Allo**	SG 133	Herb	A, D	V, VII, III	1	Fractured legs, making threads, ropes, bags, and Leaf as vegetables	(Budha-Magar *et al.* 2020), (Malla *et al.* 2015)
68	*Hedera nepalensis* K.Koch	Araliaceae	**Bogatey**	SG 19	Climber	D	II	1	Fodder	(Budha-Magar *et al.* 2020)
69	*Hippolytia longifolia* (Rech.f.) C.Shih	Asteraceae	**Bayojadi**	SG 142	Herb	F	V	**1**	Roots are used for curing common cold, stomach pain, gastritis, diarrhea	(Adhikari *et al*. 2021)
									Fine powder of roots mixed with ghee used for postnatal women	
70	*Hippophae salicifolia* D.Don	Elaeagnaceae	**Tarachuk**	SG 151	Shrub	C	III, V	1	Ripen fruits are edible and also for stomach problems	(Manandhar 2002), (Rokaya *et al.* 2010)
71	*Hordeum vulgare* subsp. *distichon* (L.) Korn	Poaceae	**Uwa/Uba**	SG 54	Herb	D, H	II, III	1	Fodder and seeds edible	(Castagnetti *et al.* 2021)
72	*Hordeum vulgare* L.	Poaceae	**Jahu**	SG 138	Herb	D, C	II, III	1	Fodder and edible grains	(Manandhar 2002)
73	*Hymenidium dentatum* (DC.) Pimenov & Kljuykov	Apiaceae	**Gadalno**	SG 119	Herb	F	V	1.24	Boiled root soup used for stomachache, indigestion, mouth allergies, and gastritis	(Adhikari *et al.* 2021)
									Root orally used for cough, cold, and fever	(Ghimire *et al.* 2021)
74	*Ilex dipyrena* Wall.	Aquifoliaceae	**Thinkya/ Thinkey**	SG 47	Tree	G	X	2	Stem for construction purposes	(Kunwar & Duwadee, 2003)
75	*Juglans regia* L.	Juglandaceae	**Okhhar**	SG 112	Tree	D, C	II, III	1	Fodder, edible fruits	(Budha-Magar *et al.* 2020)

76	*Juniperus recurva* Buch.-Ham. ex D.Don	Cupressaceae	**Dhupi salla**	SG 77	Shrub	G	IV	1.11	Fuelwood	(Sigdel *et al.* 2013)
77	*Justicia adhatoda* L.	Acanthaceae	**Asuro**	SG 60	Shrub	D	V	1	Leaves boiled used for fever and headache	(Ambu *et al.* 2020)
78	*Lecanthus peduncularis* (Royle) Wedd.	Urticaceae (Manandhar 2002)	**Galla**	SG 49	Herb	D	III	1	Leaf as vegetables	(Manandhar 2002)
79	*Lepidium sativum* L.	Brassicaceae	**Chamsur**	SG 44	Herb	J	III	1	Whole plant as vegetable	(Manandhar 2002)
80	*Lindera pulcherrima* (Nees) Benth. ex Hook.f.	Lauraceae	**Kiddicaulo**	SG 20	Tree	D, G	II, IV	1.62	Fodder and fuelwood	(Manandhar 2002)
81	*Lyonia ovalifolia* (Wall.) Drude	Ericaceae	**Ayer**	SG 10	Tree	D, G	X, IX	1	Wood for construction purposes	(Budha-Magar 2020)
									Wood for burning dead bodies in funeral Ceremony	
82	*Machilus duthiei* King ex Hook.f.	Lauraceae	**Kupey caulo/Mahilo caulo**	SG 46	Tree	D	II	1	Leaf as Fodder	
83	*Machilus gamblei* King ex Hook.f.	Lauraceae	**Kaulo**	SG 23	Tree	D, G	II, IV	1	Fuelwood	(Rijal 2011)
									Leaf as fodder	
84	*Malus domestica* (Suckow) Borkh.	Rosaceae	**Shyau**	SG 131	Tree	C	III	1	Edible fruits	(Singh *et al.* 2022)
85	*Mentha spicata* L.	Lamiaceae	**Pudino**	SG 141	Herb	D	III	1.2	Leaf for making pickles	(Budha-Magar 2020)
86	*Momordica charantia* L.	Cucurbitaceae	**Titey kareli**	SG 150	Herb	C	III, V	1	Vegetables and blood pressure	(Ambu *et al.* 2020), (Chaudhary & Rai 2017)
87	*Morus serrata* Roxb.	Moraceae	**Kimbu**	SG 128	Tree	C	III	1	Edible fruits	(Kunwar *et al.* 2012)
88	*Musa paradisiaca* L.	Musaceae	**Kela**	SG 111	Herb	J, C	IX, III	1.12	Decorating mandaps in marriage ceremony and edible fruits	(Chaudhary & Rai, 2017), (Pradhan *et al.* 2020)
89	*Myrica esculenta* Buch.-Ham. ex D.Don	Myricaceae	**Kaphal**	SG 91	Tree	C, G, D	III, IV, II	1.6	Edible fruits, fuelwood and fodder	(Bhattarai 2020), (Kunwar & Duwadee 2003), Malla *et al.* (2015)
90	*Nerium oleander* L.	Apocynaceae	**Parbati phool**	SG 140	Shrub	B	IX	1	For worshiping God	(Maharjan *et al.* 2020)
91	*Nicotiana tabacum* L.	Solanaceae	**Tamakhu/Tamu**	SG 125	Herb	D	V	1	Dried leaves are used mainly by women for smoking used in `Sulpa` Leaves are used as an insecticide.	(Manandhar 2002)
92	*Ocimum tenuiflorum* L.	Lamiaceae	**Tulasi**	SG 85	Herb	J	IX V	1	Leaf for worshiping God, cough and cold	(Manandhar 2002)
93	*Oryza sativa* L.	Poaceae	**Dhaan**	SG 146	Herb	C	V	1	Boiled husk of fruit for fever and indigestion	(Manandhar 2002)
94	*Oxalis corniculata* L.	Oxalidaceae	**Chadimaalo**	SG 134	Herb	D	V	1	Leaf paste for pimples and carbuncles	(Bhatt *et al.* 2021)
95	*Paris polyphylla* Sm.	Melanthiaceae	**Satuwa**	SG 149	Herb	F	V	1	Root for gastritis and cuts Fever and headache,	(Malla *et al.* 2015) (Bajracharya, 1979),

									Root paste for snakebite	(KC *et al.* 2010)
96	*Setaria parviflora* (Poir.) Kergeulen	Poaceae	**Furfurey ghaas**	SG 21	Herb	J	II	1	Fodder	(Manandhar 2002)
97	*Persicaria nepalensis* (Meisn.) H.Gross	Polygonaceae	**Tiley gayero**	SG 104	Herb	D	II	1	Fodder	(Budha-Magar *et al.* 2020)
98	*Picrorhiza scrophulariiflora* (Pennell) D.Y.Hong	Plantaginaceae	**Katuki**	SG 101	Herb	F	V	1	Root powder for fever, common-cold, cough and stomach pain	(Kunwar & Adhikari, 2005) Lama *et al.* 2001)
									Root paste applied on cuts	(Dewan *et al.* 2023)
99	*Pinus wallichiana* A.B.Jacks.	Pinaceae	**Salla**	SG 99	Tree	G, E	X, V	1	Woods are used for construction purposes and resin applied externally to treat crack skins	(Budha-Magar *et al.* 2020), (Rokaya *et al.* 2010)
100	*Pisum sativum* L.	Fabaceae	**Kala**	SG 84	Herb	D, H	III	1	Leaf as vegetable	(Manandhar 2002)
101	*Plantago asiatica* subsp. *erosa* (Wallich) Z. Y. Li	Plantaginaceae	**Dhanbaley**	SG 04	Herb	F	V	1	Root is used for stomach pain of children and also lose heat from body especially for children	
102	*Polygonatum verticillatum* (L.) All.	Asparagaceae	**Khiraula**	SG 66	Herb	D, G	II	1.17	Leaf as vegetables	(Budha-Magar *et al.* 2020)
103	*Pouzolzia rugulosa* (Wedd.) Acharya & Kravtsova	Urticaceae	**Githa/githi**	SG 82	Shrub	A	III	1	Bark paste /powder is mixed with rice flour to prepare selroti	(Acharya & Acharya, 2010)
104	*Primula glomerata* Pax	Primulaceae	**Dabey**	SG 07	Herb	D	VII	1	For making leaf plates for serving rice pudding	
105	*Prinsepia utilis* Royle	Rosaceae	**Dhatelo**	SG 115	Shrub	H, B	III, IX, V	1	Seeds in Cuisine	(Budha-Magar *et al.* 2020)
									Flower for worshiping God	
									Seeds for heart problems	
106	*Prunus armeniaca* L	Rosaceae	**Aarupokhara/ Kulum**	SG 11	Tree	D, C	II, III	1	Fodder and edible fruits	(Manandhar 2002)
107	*Prunus cerasoides* Buch.-Ham. ex D.Don	Rosaceae	**Painyu**	SG 76	Tree	D, G, C	II, IV, IX, III, VII	1	Fodder, fuelwood, edible fruits, and funeral ceremony	(Budha-Magar *et al.* 2020), (Malla *et al.* 2015)
									Stem for handicrafts	
108	*Prunus persica* (L.) Batsch	Rosaceae	**Aaru**	SG 103	Tree	D C	II III	1	Fodder and edible fruits	(Singh *et al.* 2023)
109	*Pyracantha crenulata* (D.Don) M.Roem.	Rosaceae	**Ghagaaru**	SG 06	Shrub	C, G	III, V VII	1.13	Edible fruits and also used for mouth allergies	(Budha-Magar *et al.* 2020)
									Stem for handicrafts	
110	*Pyrus pashia* Buch.-Ham. ex D.Don	Rosaceae	**Mel**	SG 12	Tree	C	III	1	Edible fruits	(Budha-Magar *et al.* 2020)
111	*Quercus leucotrichophora* A.Camus	Fagaceae	**Baanjh**	SG 13	Tree	D, G	II, IV, VII	1.57	Fodder, Wood for fuelwood, Wood for local handicraft	(Panthi 2013), (Manandhar, 2002)
112	*Quercus glauca* Thunb.	Fagaceae	**Falat**	SG 16	Tree	D, G	II, X, IV	1	Fodder, timber and fuelwood	(Malla *et al.* 2015), (Panthi 2013)

113	*Quercus semecarpifolia* Sm.	Fagaceae	**Bhedeya/ Thingaau/ Bhedey khasru**	SG 18	Tree	D, G	II, IV	1	Fodder and fuelwood	(Budha-Magar *et al.* 2020)
114	*Raphanus sativus* L.	Brassicaceae	**Mula**	SG 68	Herb	J	III	1	Whole plants for vegetables and dried leaf locally termed as "gundruk"	(Manandhar 2002)
115	*Reinwardtia indica* Dumort.	Linaceae	**Pyaali phool**	SG 118	Shrub	B	IX	1	Offerings to God during dry season	
116	*Rheum australe* D.Don	Polygonaceae	**Padamey/ Padamchaal**	SG 74	Herb	F, D	V, III	1	Root paste for muscle cramps, body pain, mouth allergies, and petioles for pickles	(Bhandari *et al.* 2021), (Budha-Magar 2020)
117	*Rhododendron arboreum* Sm.	Ericaceae	**Laaliguras**	SG 145	Shrub	G, B	IV, VII, V	1.39	Fuelwood and flowers orally used for removing fish bones from throat Stem for agricultural tools	(Bhandari *et al.* 2021), (Joshi & Joshi, 2005)
118	*Rhododendron campanulatum* D.Don	Ericaceae	**Chimal**	SG 78	Shrub	B, G	IX, IV	1	Fuelwood	(Budha-Magar *et al.* 2020)
									Flower for worshiping God	
119	*Rosa sp*	Rosaceae	**Gulab**	SG 01	Shrub	B	IX	1	Worshiping God	(Niroula 2016)
120	*Rosa sericea* Lindl.	Rosaceae	**Jangali gulab**	SG 80	Shrub	C	II	1	Edible fruits	(Kunwar *et al*. 2012)
121	*Rubia manjith* Roxb.	Rubiaceae	**Majitho**	SG 123	Herb	F	VII	1	Dye	(Rokaya *et al.* 2010)
122	*Rubus ellipticus* Sm.	Rosaceae	**Ainselu**	SG 56	Shrub	C	III	1	Edible fruits	(Malla *et al.* 2015)
123	*Rumex hastatus* D.Don	Polygonaceae	**Kapo**	SG 75	Herb	D	III	1	Leaf used for pickle	(Budha-Magar *et al.* 2020)
124	*Rumex nepalensis* Spreng.	Polygonaceae	**Hatelo/ Hadela**	SG 48	Herb	F	V	2	Root used for cuts, wounds and leg injury	(Kunwar & Adhikari 2005), (Shrestha & Dhillion, 2003)
125	*Saccharum officinarum* L.	Poaceae	**Ukhu**	SG 154	Shrub	G	IX, V	1.64	Decorating in ritual purposes and losing heat from body	(Manandhar 2002)
126	*Salix babylonica* L.	Salicaceae	**Bainsh**	SG 58	Tree	G	IV, VII	1	Fuelwood Wood for local handicraft	(Joshi & Joshi, 2005)
127	*Sarcococca saligna (D.Don)* Müll.Arg.	Buxaceae	**Telparo**	SG 02	Shrub	F	V	1	Root is used for fever	(Kunwar *et al.* 2012)
128	*Scutellaria scandens* D.Don	Lamiaceae	**Charikhutte**	SG 100	Herb	D	II	1	Fodder	
129	*Ligusticopsis wallichiana* (DC.) Pimenov & Kljuykov	Apiaceae	**Bhutkesh**	SG 107	Herb	D	VII	1	Dried smoke of leaf is used to remove evil spirits	(Thapa 2013)
130	*Skimmia anquetilia* N.P. Taylor & Airy Shaw	Rutaceae	**Narpaati**	SG 92	Herb	D	VII	1.45	Dried leaf used as incense for purifying air	(Kunwar *et al.* 2010)
131	*Solanum tuberosum* L.	Solanaceae	**Aalu**	SG 105	Herb	I	III	1.54	Underground parts as vegetable	(Rijal 2011)
132	*Spinacia oleracea* L.	Amaranthaceae	**Palungo**	SG 126	Herb	J	III	2.5	Leaf as vegetable	(Singh *et al.* 2012)
133	*Stauntonia latifolia* (Wall.) R.Br. ex Wall.	Lardizabalaceae	**Guphla**	SG 89	Climber	C	III	1	Edible fruits	(Budha-Magar *et al.* 2020)
134	*Stellaria media* (L.) Vill.	Caryophyllaceae	**Arimaley**	SG 05	Herb	G, D	III	1	Young shoot as vegetables	(Singh *et al.* 2023)

135	*Strobilanthes atropurpurea* Nees	Acanthaceae	**Kaaley aayero**	SG 117	Herb	D	V	1.08	Juice of the plant is used for cuts and wounds	(Manandhar 2002)
136	*Symplocos theifolia* D.Don	Symplocaceae	**Lodh**	SG 106	Tree	D	II	1	Fodder	(Joshi & Joshi 2005)
137	*Syzygium cumini* (L.) Skeels	Myrtaceae	**Jamun**	SG 55	Tree	C	III, V	1	Edible fruits,	(Ambu *et al.* 2020), (Malla *et al.* 2015)
									Fruits for stomach disorders	(Ghimire *et al.* 2021)
138	*Tagetes* sp.	Asteraceae	**Hajari phool**	SG 108	Shrub	B	IX	1	Worshiping God	(Pradhan *et al.* 2020)
139	*Taxus* sp.	Taxaceae	**Lauth salla**	SG 59	Tree	A	V	1	Bark is used for making tea and helps in preventing from cancer	(Kunwar *et al.* 2010)
140	*Thalictrum cultratum* Wall.	Ranunculaceae	**Chatarey**	SG 08	Herb	F	V	1	Root powder with boiled milk given to boost immunity for women after childbirth, Root powder mixed with rice flour for stopping excessive bleeding during mensuration	
141	*Thysanolaena latifolia* (Roxb. ex Hornem.) Honda	Poaceae	**Amliso**	SG 96	Shrub	B	VII	1.42	Brooms	(Gautam *et al.* 2022)
142	*Tinospora cordifolia* (Willd.) Hook.f. & Thomson	Menispermaceae	**Gurjo**	SG 127	Climber	G	V	1	Cough and cold and also used in Covid period	(Bhujel *et al.* 2020)
143	*Toona ciliata* M.Roem.	Meliaceae	**Tuni**	SG 57	Tree	D, G	II, X	1	Fodder and furniture	(Malla *et al.* 2015)
144	*Toxicodendron wallichii* (Hook.f.) Kuntze	Anacardiaceae	**Bhakamilo**	SG 156	Tree	C	III, V	1.19	Edible fruits, stomach pain, cough, common cold, and diarrhea	(Dangol *et al.* 2017)
145	*Triticum aestivum* L.	Poaceae	**Gahu**	SG 87	Herb	C, D,	III, II	1	Edible fruit and fodder	(Karmacharya & Shrestha, 2019)
146	*Tsuga dumosa* (D.Don) Eichler	Pinaceae	**Thegrey sallo**	SG 95	Tree	G	X	2.11	Construction purposes	(Malla *et al.* 2015)
147	*Urtica dioica* L.	Urticaceae	**Sanayu**	SG 137	Herb	J, D	III, V	1	Vegetables, cuts and wounds, and mensuration	(Rokaya *et al.* 2010), (Uprety *et al.* 2012)
148	*Valeriana hardwickei* Wall.	Caprifoliaceae	**Samayo/ Samaya**	SG 09	Shrub	F, D	V, III	1	Gastritis, vomiting, cuts, and vegetables Root for wounds	(Ambu *et al.* 2020)
149	*Vetiveria zizanoides* (L.) Roberty	Poaceae	**Khar**	SG 113	Herb	F	V	1	Root juice used for purifying blood	(Kunwar *et al.* 2012)
150	*Viburnum mullaha* Buch.-Ham. ex D.Don	Viburnaceae	**Gahumute**	SG 37	Shrub	C	III	1	Edible fruits	(Gautam *et al.* 2022)
151	Vitis vinifera L.	Vitaceae	**Dakh**	SG 135	Climber	C	III	1	Edible fruits	(Shrestha & Rai, 2013)
152	*Woodfordia fruticosa* (L.) Kurz	Lythraceae	**Dhapino**	SG 69	Shrub	B	III	1	Edible flowers	(Dangol *et al.* 2017)

153	*Zanthoxylum oxyphyllum* Edgew.	Rutaceae	**Laato timur**	SG 35	Shrub	C	V	1	Seed powder is used with boil water to cure stomachache pain, Seed boiled in water used for fever	(Shrestha *et al.* 2016)
154	*Zea mays* L.	Poaceae	**Makai**	SG 148	Herb	J, C	II, III	1	Fodder, and edible grains	(Pradhan *et al.* 2020)
155	*Zingiber officinale* Roscoe	Zingiberaceae	**Aduwa**	SG 53	Herb	I	III	1	Rhizome can be used directly or in the form of tea	(Rokaya *et al.* 2010)

***Legend**: Parts used: A: Bark, B:Flower, C:Fruit, D:Leaf, E:Plants exudates, F:Root, G: Shoot, H:Seed, I:Underground parts, J:Whole Plant, Use categories: I:Dye, II:Fodder, III:Food, IV:Fuelwood, V:Medicine, VI:Oil, VII:Others, VIII:Poison, IX:Social and Religious, X:Timber*