THE INDIGENOUS KNOWLEDGE DIVERSITY REGARDING MEDICINAL PLANTS AMONG DIFFERENT INHABITANT OF DISTRICT BUNER, KP, PAKISTAN AN ETHNOBOTANICAL SURVEY

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ABSTRACT

Background: Data on the use of medicinal plants in the treatment of various diseases by indigenous community was collected for Two-year period.

Objective: The objective of current study to record, document, and preserve the indigenous ability of plants and develop natural remedies for medicinal plant species. Also to evaluate different aspects and medicinal plant preferences among the four distinct valleys (Chinglai, Chamla, Gokand, and Chagharzai) of Buner, Khyber Pakhtunkhwa, Pakistan.

Method: We figured out the use value (UV) and conservation status (CS) of every single plant species. In the present study,

Result: we found a total of 142 species from 65 families that could potentially be utilized to treat a variety of ailments. Our study indicates that leaves are the most common plant part used by an indigenous community. The UV varied from 0.05 *Sorghum halepense* reported in Gokand. To 0.91 *Azadirachta indica*. Reported in Chagharzai. The medicinal plant conservation status indicated that 38 plant species were Infrequent, followed by 37 Rare, similarly, 35 species and 6 species respectively declared as Vulnerable and Endangered due to their respective utilization.

Conclusions: The study found that the traditional knowledge of medicinal plants is largely held by elderly people and is mainly transmitted orally from generation to generation. Each valley had its own unique set of medicinal plants, which reflects the diversity of the local flora and the cultural diversity of the communities living in these valleys. Traditional plant applications necessitate conservation techniques and more research in order to make more efficient use of environmental assets.

Keywords: *Comparative study; indigenous; ethnobotanical; diversity of medicinal plant; Buner; Pakistan*

INTRODUCTION

Plants are considered an integral part of the environment and social participants and players in the society in which they support life on earth as well as benefits humans greatly. it offered food, shade, timber, ornament, fuel, and also provides viable alternative to the primary health-care system (Laldingliani, Thangjam, Zomuanawma, Bawitlung, & Pal, 2022). Because of the widespread use of conventional allopathic therapy and the scarcity of modern pharmaceuticals, The utilization of medicinal plants has been a common practice in traditional medicine systems across the world. The diversity of medicinal plants and their associated indigenous knowledge varies greatly among different regions and communities. In this context, the study of medicinal plants and their traditional uses, commonly referred to as ethnobotany, is of great importance (Aziz M. A., Adnan, Khan, & Ullah, 2018) (Sofowora, Ogunbodede, & Onayade, 2013) (Ekor, The growing use of herbal medicines: Issues relating to adverse reactions and challenges in monitoring safety, 2014) The people of rural areas mostly rely on folk medicine, where access to modern medicine is limited, (Fokunang, Ndikum, Tabi, & Lohoue, Traditional Medicine: Past, present and future research and development prospects and integration in the National Health System of Cameroon, 2011) traditional plants provide about 80% of healthcare needs to the worldwide population (Hosseinzadeh, Jafarikukhdan, Hosseini, & Armand, 2015). In the world according to the scientist's estimation, up to now, 391000 vascular plants species have been reported, out of which 50,000 to 80,000 plants species are used for remedial purposes (Chen, et al., 2016) (SHINWARI, JAN, KHALIL, & ZAHRA, 2018).

The international community has affirmed that folk medicine imparts a cheap and alternate source of the healthcare system in developing nations. In many developing countries even today round about 80% of a resident of the remote region depends on traditional medicine for primary healthcare due to the scarcity of modern healthcare provision (Aziz, Adnan, & Khan, Traditional uses of medicinal plants practiced by the indigenous communities at Mohmand Agency, FATA, Pakistan, 2018) (Ekor, The growing use of herbal medicines: issues relating to adverse reactions and challenges in monitoring safety, 2014) (Alves & Rosa, 2005) (Stevens & Huys, 2017). This herbal medicine is affordable, safe, cheap, unharmed, and of suitable quality. Therefore, indigenous heritage is a fast-thriving phenomenon in many developing countries which is also implemented by many countries throughout the world (Ethnomedicinal uses of the local flora in Chenab riverine area, Punjab province Pakistan, 2019) (Umair, Altaf, Bussmann, & Abbasi, 2019). Almost all of the Asian countries harvest medicinal plant species for their internal therapeutic use, but many of them use it for the source of income, like Bangladesh, China, Indonesia, Iran, Nepal, India, and Pakistan (Sulaiman, Shah, Khan, Bussmann, & Ali, 2020). Pakistan ranks in 7th position in all over Asia by producing medicinal plants. In Pakistan round, about 6000 plant species were documented, which are mainly known for Himalaya, Hindukush, and Karakorum region, out of all of them 400 to 600 plants species were used for common ailments in the remote region (Amjad, et al., Ethnobotanical survey of the medicinal flora of Harighal, Azad Jammu & Kashmir, Pakistan, 2020) (Bano, et al., 2014) (Alamgeer, et al., 2018) (Islam, et al., 2021) (Bano, et al., 2014).

Northern Pakistan is known to be rich in medicinal diversity while some of the traditional medicine is found in north-western and other regions of Pakistan (Akhtar, Rashid, Murad, & Bergmeier, 2013) (Amjad, et al., Ethnobotanical survey of the medicinal flora of Harighal, Azad Jammu & Kashmir, Pakistan, 2020). In Pakistan, there are approximately 50,000 Tabibs, Ayurvedic doctors, specialists of Unani medicine and some unregister Hakeem, are work in remote region mountainous and non-rural areas, use about 200 herbal plants species for medication (Alamgeer, Uttra, Ahsan, Hasan, & Chaudhary, 2018). Some institutes and industries like (Hamdard, Lasani, and Qarshi) aim to develop the herbal Sector in the country, In Pakistan, there are about 4k herbal marketable product manufacturers (Usmanghani, 2017). The residential knowledge about medicinal plants is conveyed from generation to generation through oral, social, and cultural

experiences (Ali & Qaiser, 2009) (Ahmad, et al., 2014). The district of Buner in Khyber Pakhtunkhwa (KPK), Pakistan is known for its rich cultural and biologicaldiversity.

The current study looks at ethnobotanically significant plants as a potential source of therapy for a variety of diseases. As well as contribute to the development of sustainable health care practices in the region. The study will also help to conserve the valuable plant species and traditional knowledge by documenting it for future generations.

The main objective of this study is.

1. To record, document, and preserve the indigenous ability of plants and also develop natural remedies for medicinal plant species.
2. To evaluate different aspects and medicinal plant preferences between the four distinct valleys of Buner
3. Document the traditional knowledge and use of medicinal plants in the different valleys of Buner district.
4. Assess the level of knowledge and awareness of the local communities regarding medicinal plant diversity and their traditional uses.
5. Compare and contrast the traditional knowledge and use of medicinal plants in the different valleys of the district.

MATERIAL AND METHODS

Study Area and Climate

This comparative study was carried out in four distinct valleys of the Buner district. These four are distinguished from each other by their altitude. Gokand and Chagharzai are located in the district top portion and are primarily hilly. The other two (Chinglai and Chamla) are in the lower section, primarily low altitude and grounded area. Buner is a lush and green mountainous valley, consisting of lofty elevation and dense forests, located in the north of Khyber Pakhtunkhwa. It lies between 34o-09 to 34o-43 latitude 72o-10 to 72o- 47 longitude and covered an area of 1760 km square (Zaman, et al., 2018). Buner shared boundaries with district Swat and Shangla on the north, on the west by Malakand agency, District Mardan and Swabi on the south, and Hazara division & Indus River on the East (Akhtar, Saeed, & Khan, Current status of mammals in district Buner Khyber Pakhtunkhwa, Pakistan, 2014). The elevation range extends from 1200 ft in the south to 9550 ft in the North. The climate of the lower region remained normal while in the upper region, the summer is moderate and short but the winter is cool and long due to high rain and snowfalls. The dense forests and rich diversity of plants are the main cause of the natural beauty of the study area. The whole population of the district belongs to the Sunni sect of Islam however the Sikhs and Hindus are also living in the Buner. The traditional dress of the area is Shalwar, Qamees, and Chaddar. Yousafzai and Gujar are the main tribe resident of the area. And again divide into subtribe known as Khel. Marble of the area is famous and prominent all over the country. The economically greater part of the area consists of poverty while some engaged with the marble business comparatively rich (Khan, Ali, & Dr. Syed Raza Shah Gilani, 2021) (Mulk, Azizullah, Korai, & Khattak, 2015). The region is surrounded by hills that are covered with full of pine trees. There are three main water channels namely Barandu, Chamla, and Budal. Most of the population of the area is related to the field of agriculture directly or indirectly. The main crop of the area is wheat, Maize, and Tobacco (REHAMAN, KHAN, & TARIQ, 2012).

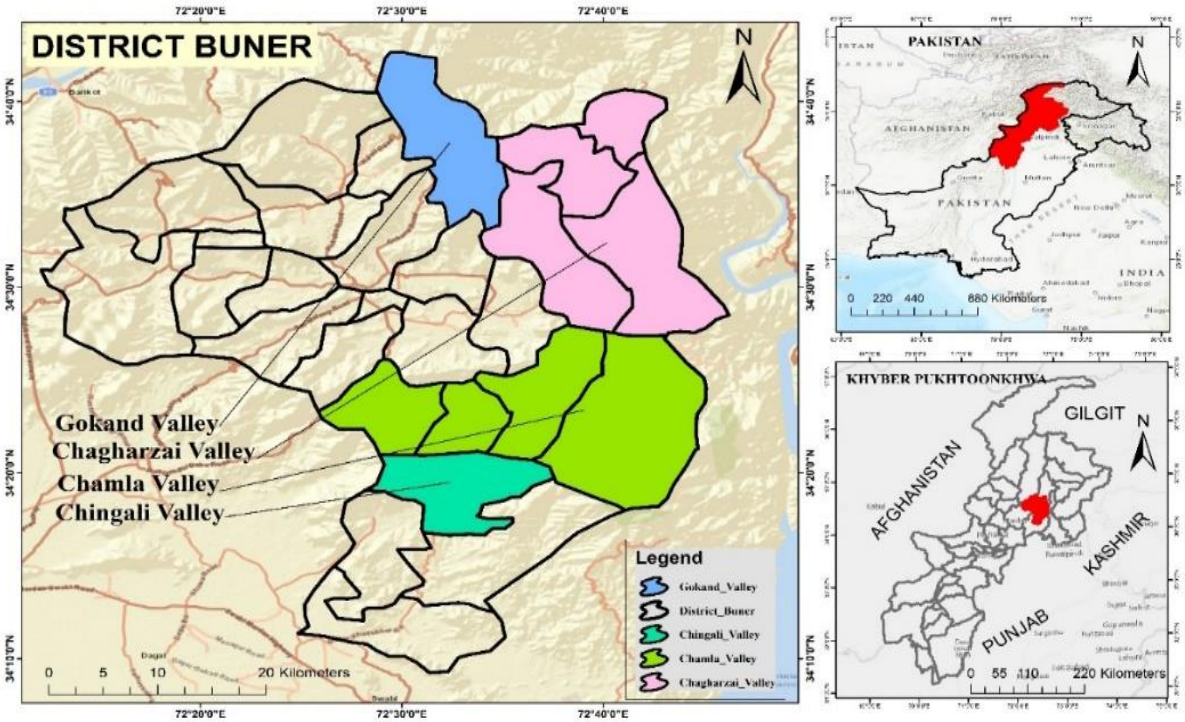

Fig 1. Study Area Map

Data Collection

The ethnobotanical survey was started from June 2021 to the end of March 2023. The information was collected from the local people of the area and Hakeem who have knowledge about plant medicine. Based on the questionnaire, open group discussion, and personal interview with the individual participant. The communicator was updated about the aim and importance of the study. All the interviews and discussions were conducted in the Pashto language. The local language of the area. The questionnaire was set by different data information which are biodata of informant, plant medicinal use, part use, and disease treatment, his mode of preparation, availability, and local names of plants.

Demographic Data of Locl Participants

A semi-structured interview, and group discussion with randomly selected the inhabitant of rural community were conducted to collect the information about the medicinal plant and treat for ailment from 360 respondents including Farmers, shopkeepers, pastorals, traditional healers, gardeners, drivers, hunters, dealers, salesperson, plants gatherers, and Hakeem. Among the participant 270 were male and 90 were female as shown in table 1. The total respondent's males and females ranged age-wise from 18 to above 85 years. Among the 5 groups of informants 45 were aged from 18- 30, 81 from 31-50, 83 from 51-70, 85 from 71 to 85, and 66 from above 85 years. The majority of people of this area were defendants on agricultural production. The majority of the local population belonged to rural areas (78.57%) and depended mainly on agricultural production.

Table 1; Demographic details.

Parameter	Classes	Frequency of respondent in each class	Percentage
Gender	Male	270	75
	Female	90	25
Age range	18 to 30 years	45	12.50
	31 to 50 years	81	22.50
	51 to 70 years	83	23.05
	71 to 85 years	85	23.61
	above 85 years	66	18.33
Respondent profession	Farmers	29	8.05
	shopkeepers	18	5.00
	pastorals	48	13.33
	traditional healers	51	14.17
	gardeners	21	5.83
	salesperson	39	10.83
	plants gatherers	35	9.72
	Hakeem	37	10.28
	drivers	25	6.94
	hunters	23	6.39
	dealers	34	9.44
education Background	Illiterate	152	42.22
	Matriculate	98	27.22
	Intermediate	77	21.39
	Graduate	21	5.83
	postgraduate	12	3.33
experience in relevant field	3 to 10 years	51	14.17
	11 to 17 years	65	18.05
	17 to 25 years	102	28.33
	above 25 years	142	39.44

Plants Collection and Identification

The region's plant species that had been linked to a particular illness were gathered, pressed, and mounted on herbarium sheets for accurate identification. With the assistance of a plant taxonomist, the specimens were recognized. Confirmed by using Flora of Pakistan and for further verification using Royal Botanic Gardens KEW. And placed at the University Of Peshawar Herbarium Department Of Botany.

Conservation Status

Plant conservation status varies based on species and geographical area. The International Union for Conservation of Nature (IUCN) Red List is a comprehensive assessment of the conservation status of plant and animal species worldwide.

Depending on the likelihood that they will go extinct, plant species have been divided into various categories on the IUCN Red List. These groups include:

Table 2: Conservative status of plant

Conservation status of plants	
Availability	**Collection**
0- Uncommon or very rare	0- More than 1000 kg/year
1- Less common or more	1- Consumed from 500-1000 kg/year
2- Occasional	2- Consumed from 200-500 kg/year
3- Abundant	3- Consumed from 100-200 kg/year
Part used	**Growth**
0- Root, whole plant	4- Re-growth in season
1- Bark	3- Re- growth in one years
2- Seeds, fruits	2- Re-growth in two years
3- Flowers	1- Re-growth in three years
4- Gum, latex	0- Re-growth in more than three years
Total score	
0.4	Endangered
5-8	Vulnerable
9-12	Rare
12-14	Infrequent
15-16	Dominant

RESULTS

Taxonomy and Physical Appearance of Medicinal Plant.

The result of the ethnobotanical survey on indigenous knowledge and diversity of medicinal plants in the different valleys of district Buner, KPK, Pakistan showed that the area is rich in plant diversity with a total of 142 plant species belonging to 65 families reported to be used for medicinal purposes. (Presented in table 3) These plants were found to be used for the treatment of Diuretic (10species), followed by Abdominal pain (8 species), Kidney stone (6 species), Blood pressure (4 species), and 4 species use for blood purifier. All species listed with their Botanical name, local name, voucher number, use part , plant form, Preparation of Remedies, Routes of administration , Medicinal uses, Use value, and conservation status in table 3…

Asteraceae, Moraceae, Rosaceae, and Euphorbiaceae, which each have six species, were the highest taxa reported families. After which Fabaceae, Amaranthaceae, Amaryllidaceae, Solanaceae have 5 taxa at all. Out of 142 taxa forty-four plant species were reported commonly in all 4 valleys of Buner which have, *Ziziphus oxyphylla*, *Stellaria media*, *Romex dentatus*, *Jacobaea analoga*, *Morus nigra*, *Justicia adhatoda* and other.

Leaves are the mostly plant part used to treat ailment which report 70 time. Followed by fruits 30 time, whole plant 24 and seed 19 time reported subsequent to this Root, Gum, Rhizome, Bark, Bulb, Frond, Flower, Cone, Resin, Shoot, Grains were least reported.

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Table 3; Medicinal plant species of four distinct valleys of Buner, Khyber Pakhtunkhwa, Pakistan

Scientific Name Family Voucher No.	Local Names	Part Use	Plant form	Status	Preparation of Remedies	Routes of administration	Medicinal Uses	UV				CS
								Chinglai (X)	Chamla (Z)	Gokand (G)	Chaghar zai (Y)	
Abelmoschus esculentus (L.) Moench. Malvaceae A. Khu. 001.UOP	**Bhindaye**	Fruits [G, Y]	H	C	Cooked	O	Diuretic [G, Y]	Ab	Ab	0.25	0.34	R
Acacia modesta Wall. Fabaceae A. Khu. 002.UOP	**Paloosa**	Gum[G, Y, X]	T	W	Direct	O	Relaxant [G, Y], hepatitis [G, Y, X]	0.32	Ab	0.41	0.45	V
Achyranthes aspera L. Amaranthaceae A. Khu. 003.UOP	**Nary ghishkay**	Whole plant [Y], leaves [G, X]	H	W	Juice	O	Stomachache [G], abdominal pain [X], kidney stone [Y]	0.27	0.30	0.49	0.40	V
Aconitum violaceum Jacquem. Ex Stapf. Ranunculaceae A. Khu. 004.UOP	**Zahar mora**	Roots [G]	H	W	Powder, Juice	O	Arthritis [G]	Ab	Ab	0.51	Ab	E
Acorus calamus L. Acoraceae A. Khu. 005.UOP	**Skha waja,bekan**	Whole plant [Z], Rhizome [G, Y, X]	H	W	Decoction	O	Menstrual cycle regulating [G, X, Z], dyspepsia [G, X] ,emetic [Y], carminative [Y]	0.30	0.41	0.57	0.47	R
Adiantum capillus-veneris L. Pteridaceae A. Khu. 006.UOP	**Sumbal**	Whole plant [G, Y, Z]	H	W	Cooked	O	Constipation [G, Z], Scorpion bite [Y, Z], Pneumonia [G]	0.21	0.31	0.25	0.40	E
Adiantum venustum D. Don Pteridaceae A. Khu. 007.UOP	**Parsohan**	Fronds [G], whole plant [Y]	H	W	Cooked	O	Diuretic [G], expectorant [Y], Scorpion sting [Y]	Ab	Ab	0.38	43	V
Aesculus Indica (Wall.ex Cambess.) Hook. Sapindaceae A. Khu. 008.UOP	**Jooz**	Bark [G, Z], seed [G]	T	C	Direct, Powder	O	Vermifuge [G, Z]	0.51	0.55	0.68	AB	-
Ailanthus altissima (Mill.) Swingle.	**Spena backyanra**	Bark [G, Y, Z]	T	W	Juice	O	Pimples [G, Y, Z], abdominal pain	Ab	0.34	0.28	0.50	I

Simaroubaceae A. Khu. 009.UOP							[G]					
Allium cepa L. Amaryllidaceae A. Khu. 010.UOP	**Piaz**	Bulb [G, Y, X, Z], leaves [G, Z]	H	C	Direct, Juice	O,T.	Diuretic [G, Z], better immunity [G, X, Z], hair growth [G, X], ant poison [Y, X, Z]	0.35	0.29	0.45	0.37	I
Allium jacquemontii Kunth. Amaryllidaceae A. Khu. 011.UOP	**Orakay**	Leaves [G]	H	W	Decoction	O	Blood pressure [G], abdominal pain [G], hypertension [G]	0.53	0.29	0.22	0.43	R
Allium sativum L. Amaryllidaceae A. Khu. 012.UOP	**Oga**	Bulb [G, Y, X, Z], leaves [G]	H	C	Direct	O	Blood pressure [G,Y,X,Z], diuretic [G], hypertension [X]	0.41	0.44	0.61	0.73	I
Alnus nitida (Spach) Endl. Betulaceae A. Khu. 013.UOP	**Geiray**	Catkins [Y]	T	W	Decoction	T	Cosmetic [Y], emollient [Y]	Ab	Ab	Ab	0.24	---
Aloe vera (L.) Burm.f. Asphodelaceae A. Khu. 014.UOP	**Manzarepanra**	Leaves [G, X], young shoot [Y, Z]	H	C	Gel	T	Anti-inflammation [G, Y], Heal wounds [Z, X]	0.40	0.57	0.23	0.78	I
Amaranthus caudatus L. Amaranthaceae A. Khu. 015.UOP	**Chalweray**	Leaves [Y], shoot [G, Y]	H	W	Cooked	O	Anthelmintic [Y], diuretic [G, Y]	0.37	0.23	0.48	0.53	I
Amaranthus spinosus L. Amaranthaceae A. Khu. 016.UOP	**Chalweray**	Leaves [G, Y]	H	W	Cooked	O	Diuretic [G, Y], stomach disorder [Y]	0.50	Ab	0.35	0.57	R
Amaranthus viridis L. Amaranthaceae A. Khu. 017.UOP	**Chalveray**	Leaves [G, X] whole plant [Y]	H	W	Juice, Cooked	O,T.	Urinary diseases [G, X], tonic [G, Y, X], Emollient [Y]	0.19	0.27	0.47	0.34	I
Visnaga daucoides Gaertn. Apiaceae A. Khu. 018.UOP	**Gangahi**	Fruits [Y]	H	W	Oil	O	Asthma [Y], cough [Y]	Ab	Ab	Ab	0.24	---

Arisaema jacquemontii Blume. Araceae A. Khu. 019.UOP	**Marjarai**	Rhizoms [G, Y]	H	W	Powder	O	respiratory problems [G, Y]	Ab	Ab	0.43	0.53	R
Artemisia scoparia Waldst. & Kitam. Asteraceae A. Khu. 020.UOP	**Jaukay**	Shoots [G], leaves [Y]	H	W	Cooked	O	Respiratory stimulant [G], laxative [Y]	Ab	Ab	0.25	0.30	R
Artemisia vulgaris L. Asteraceae A. Khu. 021.UOP	**Tarkha**	Whole Plant [X, Y], leaves [G], roots [G]	S	W	plaster	T	Intestinal worms [G, Y], colic [X, Y], skin disease [G, X]	0.42	0.49	0.32	0.23	E
Asparagus racemosus Willd. Asparagaceae A. Khu. 022.UOP	**Jangra boty**	Leaves [G, Y]	H	W	Decoction	O,T.	Skin diseases [G, Y], arthritis [G]	Ab	Ab	0.67	0.61	V
Asparagus officinalis L. Asparagaceae A. Khu. 023.UOP	**Tendoray**	Whole plant [Y], root [G, X], Young shoot [G]	S	W	Juice	O	Tonic [Y], kidney stone [G, X], Fever [X], latulence [G]	0.49	Ab	0.57	0.27	V
Asphodelus tenuifolius Cav. Asphodelaceae A. Khu. 024.UOP	**Oogakay**	Leaves [G,Y]	H	C	Decoction	O	Antihypertensive [Y], Blood pressure [G], Tension [G]	Ab	Ab	0.59	0.69	R
Avena sativa L. Poaceae A. Khu. 025.UOP	**Jamdaray**	Fruits [G], grains [Y]	H	C	Extract	O	Anxiety [G], astringent [Y]	Ab	Ab	0.27	0.40	---
Azadirachta indica A. Juss. Meliaceae A. Khu. 026.UOP	**Meem**	Leaves [G, Y]	T	W	Decoction	O	Hepatitis [G, Y], vermicide [G, Y], Suger [Y]	Ab	Ab	0.85	0.91	V
Berberis lycium Royle. Berberidaceae A. Khu. 027.UOP	**Kwaray**	Root [G, X, Z], Bark [G, Y, X, Z],	S	W	Decoction, Plaster	O,T.	Stomachache [Y, Z], diabetic [G, X], wound healing	0.79	0.72	0.77	85	V

		Leaves [G]					[G, Y, X, Z], tonic [X], bone fracture [G, Z]					
Boerhavia diffusa L. Nyctaginaceae A. Khu. 028.UOP	**Zakham boty**	Roots [G]	H	W	Plaster	T	Ulcer [G], skin inflammation [G]	Ab	Ab	0.41	Ab	R
Bombax ceiba L. Malvaceae A. Khu. 029.UOP	**Badar**	Bark [Z]	T	C	plaster	T	Fracture [Z]	Ab	0.14	Ab	Ab	V
Rhamphospermum nigrum (L.) Al-Shehbaz Brassicaceae A. Khu. 030.UOP	**Thor sharsham**	Seeds [X, Z], Leaves [Z]	H	C	Oil	T	Common cold [X, Z], Painful joint [X]	0.34	0.42	Ab	Ab	R
Broussonetia papyrifera (L.) L'Her. Ex Vent. Moraceae A. Khu. 031.UOP	**Shah toot**	Leaves [G, X, Z]	T	W	Powder	O	Diarrhea [G, Z, X]	0.12	0.48	0.25	Ab	---
Butea monosperma (Lam.) Taub. Fabaceae A. Khu. 032.UOP	**Palay**	Seed [X, Z]	T	W	Extract	O	Anthelmintic [X], jaundice [X, Z]	0.48	0.32	Ab	Ab	---
Buxus wallichiana Baill. Buxaceae A. Khu. 033.UOP	**Shamshad**	Leaves [G, Y, Z]	S	W	Decoction, Powder	O,T.	Bone fracture [G, Z], Purgative [G, Y, Z], Arthritis [G]	Ab	0.42	0.23	0.61	V
Calotropis procera (Aiton) W.T.Aiton. Apocynaceae A. Khu. 034.UOP	**Spalama**	Latex [Y], flower [X], leaves [G, X, Z]	S	W	Powder	O	Dog bite [Y], flatulence [G, Z], Digestion [G, X]	0.62	Ab	0.37	0.68	R
Cannabis sativa L. Cannabaceae A. Khu. 035.UOP	**Bang**	Seed [X], Leaves [G, Y, X, Z]	H	W	Plaster, Smoke	O	Boils [X], Sedative [G, X], Narcotic [G, Y, X, Z], excitation [Y, Z], pain killer [G, Z]	0.68	0.49	0.34	0.72	I
Capsella bursa-pastoris (L.) Medik Brassicaceae	**Bambesa**	Whole plant [X], leaves [G],	H	W	Juice	O	Sedative [X], amxiolytic [G], tension [G]	0.23	0.61	0.42	Ab	V

A. Khu. 036.UOP		root [G]										
Capsicum annuum L. Solanaceae A. Khu. 037.UOP	**Marchakkay**	Fruits [G, X, Z, Y]	H	W	Powder	O	Whooping cough [G, X, Z, Y]	Ab	0.21	0.37	0.28	R
Caudanthera edulis (Edgew.) Meve & Liede. Apocynaceae A. Khu. 038.UOP	**Famankay**	Whole plant [G, Y]	H	W	Powder, Decoction	O	Otitis media [G], tonic [Y], earache [Y], Anti-peristalsis [G]	Ab	Ab	0.73	0.47	R
Cassia fistula L. Fabaceae A. Khu. 039.UOP	**Amaltas**	Flower [X], Fruits [G, X, Y, Z]	T	W	Decoction	O	Fever [G, X], Skin infection [G, X, Y], Constipation [G, Y, Z]	0.60	0.47	0.73	0.78	R
Cedrus deodara (Roxb.ex D. Don) G. Don Pinaceae A. Khu. 040.UOP	**Achrr**	Oil [G], gum [G, Y]	T	W	Direct	O	Antiseptic [G], antipyretic [G, Y]	Ab	Ab	0.25	0.43	E
Celtis australis L. Cannabaceae A. Khu. 041.UOP	**Tagha**	Fruits [G, Y], bark [G]	T	W	Decoction	O	Colic [G], anti-allergic [G, Y]	Ab	Ab	0.19	0.38	---
Celtis caucasica Willd. Cannabaceae A. Khu. 042.UOP	**Tagha**	Bark [G], Fruits [G]	T	W	Decoction, Plaster	O,T.	Wound healing [G], Burning [G]	Ab	Ab	0.11	0.18	V
Chenopodium album L. Amaranthaceae A. Khu. 043.UOP	**Sarmay**	Whole plant [X], young Shoot [G, Y]	H	W	Decoction	O	Abdominal [X], Hapatitis [G, Y], constipation [G, X, Y]	0.61	0.47	0.23	0.38	R
Cichorium intybus L. Asteraceae A. Khu. 044.UOP	**Harn**	Whole plant [Y], leaves [G]	S	W	Decoction	O	Tonic [Y], asthma [G], indigestion [G]	Ab	Ab	0.20	0.13	V
Colchicum luteum Baker. Colchicaceae A. Khu. 045.UOP	**Qiamat guallay**	Whole plant [G]	Perennial H	W	Paste	T	Laxative [G]	0.15	0.32	Ab	Ab	---

Convolvulus arvensis L. Convolvulaceae A. Khu. 046.UOP	**Prewatai**	Leaves [G, X]	H	W	Powder	O	Constipation [X], inflammtion [X], pimple [G], stomach problem [G]	0.42	0.28	0.62	Ab	I
Coriandrum sativum L. Apiaceae A. Khu. 047.UOP	**Dhanyal**	Leaves [Y, Z, X], seed [Y]	H	C	Cooked	O	Diuretic [Y, Z], digestive [Y], carminative [Y, X]	0.75	0.52	Ab	0.64	R
Cuscuta reflexa Roxb. Convolvulaceae A. Khu. 048.UOP	**Nary zaila**	Whole plants [Y], Young shoot [G]	H	W	Juice	O	Blood purification [G, Y], arthritis [G]	Ab	Ab	0.67	0.50	I
Cynodon dactylon (L.) Pers. Poaceae A. Khu. 049.UOP	**Kabaal**	Whole Plant [G, Y, Z, X]	H	W	Plaster	T	Astringent [Y, Z, X], wound healing [G, X]	0.12	0.15	0.10	0.39	I
Datura innoxia Mill. Solanaceae A. Khu. 050.UOP	**Datora**	Leaves [G, X], seed [X], fruits [G]	H	W	Plaster	T	Pimple [G], narcotic [G, X], softening the boils [X]	0.45	Ab	0.38	Ab	R
Datura stramonium L. Solanaceae A. Khu. 051.UOP	**Batora**	Leaves [G], Flower [G], seeds [G]	H	W	Juice	O	Stomach [G], wounds [G], fever [G]	0.20	Ab	0.33	Ab	R
Debregeasia saeneb (Forssk.) Hepper & J.R.I Wood. Urticaceae A. Khu. 052.UOP	**Ajalay**	Leaves [G]	S	W	Powder	T	Dry skin [G], fatigue [G]	Ab	Ab	0.39	Ab	R
Sunhangia elegans (DC.) H.Ohashi & K.Ohashi Fabaceae A. Khu. 053.UOP	**Lada sparkay**	Leaves [Y]	H	W	Direct	O	Rheumatism [Y]	Ab	Ab	Ab	0.65	---
Diospyros kaki L.f. Ebenaceae A. Khu. 054.UOP	**Sur Amluk**	Fruits [G, Y]	T	C	Direct	O	Anti-inflammatory [G, Y]	Ab	Ab	0.21	0.40	V

Diospyros lotus L. Ebenaceae A. Khu. 055.UOP	**Toor Amluk**	Fruits [Y, Z]	T	C	Direct	O	Carminative purgative [Y, Z]	Ab	0.19	Ab	0.47	V
Dodonaea viscosa Jacq. Sapindaceae A. Khu. 056.UOP	**Ghoraskay**	Leaves [G, Y, X, Z]	S	W	Plaster	T	Wound healing [G, Y, X], fungal infection [X, Z], bone fracture [G, Z], Sprain [G, Y]	0.39	Ab	0.62	0.43	I
Dryopteris juxtaposita Christ. Polypodiaceae A. Khu. 057.UOP	**Kwanjay**	Young shoot [G, Y]	H	W	Juice	O	Boon weakness [G, Y], dyspepsia [G, Y]	Ab	Ab	0.31	0.23	E
Potentilla indica (Andrews) Th.Wolf. Rosaceae A. Khu. 058.UOP	**Zmaky toot**	Fruits [G, X], leaves [X]	H	W	Decoction, Direct	O	Coughing [G, X], sore throat [G]	0.48	0.23	0.37	0.68	I
Elaeagnus umbellata Thunb. Elaeagnaceae A. Khu. 059.UOP	**Ganam ranga**	Flower [G, Y], fruits [G, Y]	S	W	Decoction	O	heart diseases [G, Y], cough [G, Y],	Ab	Ab	0.11	0.09	---
Equisetum arvense L. Equisetaceae A. Khu. 060.UOP	**Bandakay**	Whole plant [G, Y, X, Z]	H	W	Juice	O	Kidney stone [G, Y, X, Z]	0.49	0.25	0.57	0.35	V
Euphorbia helioscopia L. Euphorbiaceae A. Khu. 061.UOP	**Mandanoo**	Latex [G, Y], seed [X]	H	W	Powder	O	Kidney stone [G], cholera [G, X], laxative [Y]	0.23	0.14	0.39	0.19	I
Euphorbia hirta L. Euphorbiaceae A. Khu. 062.UOP	**Wrmaga**	Whole plant [X, Y], latex [G]	H	W	Plaster, Juice	O,T.	Cough [X, Y], asthma [X], kidney stone [G, Y], bronchitis [G, Y], constipation [G]	0.55	Ab	0.35	0.23	I
Euphorbia prostrata Aiton. Euphorbiaceae A. Khu. 063.UOP	**Wrmaga**	Latex [X], whole plant [Y]	H	W	Direct, Powder	T,O	Ringworm [X] kidney stone [X], skin disease [Y]	0.52	Ab	Ab	0.62	---

Euphorbia wallichii Hook. f. Euphorbiaceae A. Khu. 064.UOP	**Shangla**	Whole plant [Y], leaves [Y]	H	W	Decoction	O	bowel complains [Y], ringworm [Y]	Ab	Ab	Ab	0.31	---
Zygophyllum indicum (Burm.f.) Christenh. & Byng Zygophyllaceae A. Khu. 065.UOP	**Azghakay**	Whole plant [G, Y]	H	W	Decoction	O	Smallpox [G], anticancer [G, Y]	Ab	Ab	0.89	0.79	V
Ficus carica L. Moraceae A. Khu. 066.UOP	**Inzar**	Latex [G, X, Y, Z], Fruits [G, X, Y]	T	W	Direct	O	Worts [G, X, Y, Z], Stomach disease [G, X, Y]	0.48	0.23	0.58	0.52	V
Ficus palmata Forssk. Moraceae A. Khu. 067.UOP	**Inzer**	Latex [X, Y]	T	W	Direct	T	Wasp sting [X, Y]	0.19	Ab	Ab	0.17	I
Ficus racemosa L. Moraceae A. Khu. 068.UOP	**Ormal**	Latex [G, Y], fruits [G]	T	C	Direct	O,T.	Inflammation due to wasp bites [G, Y]	Ab	Ab	0.31	0.18	R
Foeniculum vulgare Mill. Apiaceae A. Khu. 069.UOP	**Kaga vanalay**	Leaves [G, Y, Z, X], Seed [Y, Z, X]	H	C	Direct	O	Diuretic [G, Y, Z, X], digestive [Y, Z, X], aromatic [Y]	0.41	0.28	0.49	0.62	R
Fumaria indica (Hausskn.) Pugsley. Papaveraceae A. Khu. 070.UOP	**Papra**	Young shoot [G, X, Y]	H	W	Juice, Decoction	O	Fever [G, X, Y], vomiting [X, Y], Antispasmodic [G, X], blood pressure [G, Y]	0.61	0.35	0.55	0.23	I
Gymnosporia royleana Wall. Ex M.A Lawson. Celastraceae A. Khu. 071.UOP	**Sor azghay**	Whole plant [Y], Fruits [G, X]	S	W	Direct	O	Tootache [Y, X], jaundice [X], gum pain [G], Blood purifier [G, X]	0.38	0.28	0.44	0.35	I
Hedera helix L. Araliaceae A. Khu. 072.UOP	**Pyo zela**	Leaves [G, Y, Z]	S	W	Decoction	O	Tonic [Y, Z], arthritis [G], Diabetes [G, Y]	0.57	0.48	0.23	0.43	V

Hedera nepalensis K. Koch. Araliaceae A. Khu. 073.UOP	**Prwata**	Leaves [G, Y]	H	W	Powder	O	Diabetes [G, Y], Blood purifier [G], urinary troubles [Y]	0.34	0.28	0.18	0.11	---
Heracleum candicans Wall. ex Dc. Apiaceae A. Khu. 074.UOP	**Kado panra**	Leaves [Y]	H	W	Juice	O	Tonic [Y], Colling agent [Y]	0.28	0.35	Ab	0.44	I
Hypericum oblongifolium Choisy. Hypericaceae A. Khu. 075.UOP	-	Whole plant [X]	S	W	Extract	O	Diarrhea [X], Urinary troubles [X]	0.37	Ab	Ab	Ab	---
Jasminum humile L. Oleaceae A. Khu. 076.UOP	**Rambil chambil**	Leaves [X, Z]	S	W	Juice	T	Ringworm [X, Z]	0.25	0.24	Ab	Ab	---
Juglans regia L. Juglandaceae A. Khu. 077.UOP	**Ghoz**	Bark [G, Y]	T	C	Juice, Decoction	O	Wound healing [G], cleaning teeth [G, Y]	Ab	Ab	0.81	0.69	R
Justicia adhatoda L. Acanthaceae A. Khu. 078.UOP	**Baikar**	Flower [X], leaves [G, Y, X]	S	W	Plaster	O,T.	Wound [G, Y], Arthritis [G], bone fracture [G], expectorant [X], antipasmodic [Y]	0.51	0.32	0.39	0.55	I
Mallotus philippensis (Lam.) Müll.Arg. Euphorbiaceae A. Khu. 079.UOP	**Kambela**	Bark [G, X, Z], seed [G], fruits [Y, Z]	T	W	Juice, Direct	O	Stomach pain [G, X, Z], growth of hairs [Y, Z]	0.55	0.37	0.68	0.53	R
Melia azedarach L. Meliaceae A. Khu. 080.UOP	**Tora bakyana**	Leaves [G, X, Z, Y], seed [G,Y]	T	W	Decoction	O	Antiseptic [G, X, Z, Y], liver disease [G, Z, Y], laxative [G, Y], insect repellent [X]	0.23	0.27	0.49	0.21	R
Mentha longifolia (L.) L. Lamiaceae	**Welanay**	Leaves [G, X, Z, Y]	H	W	Powder, Juice	O	Diarrhea [G, Z, Y], vomiting [G, X, Z,	0.83	0.68	0.73	0.75	I

A. Khu. 081.UOP							[Y], abdominal pain [G, X, Z]					
Mentha piperita L. Lamiaceae A. Khu. 082.UOP	**Podena**	Leaves [G, X, Y, Z]	H	W	Powder, Juice	O	Diarrhea [G, X, Y, Z], nausea [G, Y, Z], indigestion [G, Z], abdominal pain [G, X, Y]	0.60	0.50	0.78	0.57	I
Mentha spicata L. Lamiaceae A. Khu. 083.UOP	**Podena**	Leaves [G, X, Z]	H	W	Juice, Powder	O	Antipyretic [G, Z], vomating [G, X], Hemorrhoid [G, Z]	0.55	0.37	0.68	Ab	I
Morchella deliciosa Fr. Morchellaceae A. Khu. 084.UOP	**Ghuchy**	Whole plant [G, Y]	H	W	Decoction	O	Anti-cholesteric [G, Y], pain [G], infertility [G]	Ab	Ab	0.79	0.89	E
Morchella esculenta Fr. Morchellaceae A. Khu. 085.UOP	**Ghuchy**	Whole plant [G, Y]	H	W	Decoction	O	Tonic [G], infertility [G, Y]	Ab	Ab	0.74	0.88	V
Morus alba L. Moraceae A. Khu. 086.UOP	**Spen toot**	Fruits [G, X, Y, Z]	T	W	Direct	O	Increase digestion [G, X, Y], Constipation [G, X, Z]	0.45	0.41	0.55	0.35	V
Morus nigra L. Moraceae A. Khu. 087.UOP	**Toor toot**	Fruits [G, X, Y, Z]	T	W	Direct	O	Laxative [X, Y], cooling agent [G, X, Y], coughing [G, Z]	0.51	0.34	0.28	0.67	V
Myrsine africana L. Primulaceae A. Khu. 088.UOP	**Marlorang**	Fruits [G, X], leaves [G]	S	W	Direct	O	Expulsion of worms [G, X], abdominal pain [G]	0.22	Ab	0.39	Ab	R
Narcissus poeticus L. Amaryllidaceae A. Khu. 089.UOP	**Gul-e-nargas**	Bulb [G, Y]	H	W	Juice	O	Skin allergic [Y], pimples [G], tumer treatment [Y]	Ab	Ab	0.25	0.45	---

Narcissus tazetta L. Amaryllidaceae A. Khu. 090.UOP	**Gul-e-nargas**	Flower [G, Y]	H	W	Decoction	O	Purgative [G, Y], emetic [G]	0.23	0.47	0.18	0.11	---
Nerium oleander L. Apocynaceae A. Khu. 091.UOP	**Ganderay**	Leaves [G]	S	C	Cooked	O	Anti-microbial [G], Toothache [G]	Ab	Ab	0.37	Ab	---
Olea ferruginea Wall. Ex Aitch. Oleaceae A. Khu. 092.UOP	**Khona**	Leaves [G, Y, X], Seed [G, X]	T	W	Direct	Toothbrush	Toothache [G, Y], oil for massage [Y, X]	0.44	Ab	0.57	0.39	R
Opuntia dillenii (Ker Gawl.) Haw. Cactaceae A. Khu. 093.UOP	**Tohar**	Fruits [G, X, Y, Z]	H	W	Juice	O	For guinea worms [Y, Z], tonic [X], demulucent [Y], Anemia [G, Z], diabetics [Z]	0.55	0.35	0.43	0.63	I
Oxalis corniculata L. Oxalidaceae A. Khu. 094.UOP	**Tarokay**	Leaves [G, X, Y, Z]	H	W	Plaster, Juice	O,T.	Skin inflamation [G, X, Y, Z], scorpion sting [X, Y, Z], stomach disorder [G, X, Z]	0.60	0.63	0.40	0.32	I
Papaver rhoeas L. Papaveraceae A. Khu. 095.UOP	**Zangaly qashqash**	Leaves [X], Seed [G, Y]	H	W	Decoction	O	Diarrhea [X], stomachache [G, Y], indigestion [G]	0.57	0.42	0.58	0.29	R
Papaver somniferum L. Papaveraceae A. Khu. 096.UOP	**Qashqash**	Seeds [X]	H	C	Decoction	O	Fever [X], tonic flu [X]	0.52	Ab	Ab	Ab	V
Peganum harmala L. Nitrariaceae A. Khu. 097.UOP	**Spelany**	Leaves [G, Y]	H	W	Direct	O	Obesity [G, Y]	Ab	Ab	0.72	0.59	V
Pinus roxburghii Sarg. Pinaceae A. Khu. 098.UOP	**Nakhtar**	Bark [G, Y, Z], cone [X], Resin [G, Y, Z]	T	W	Direct, Decoction	O,T.	Antipyretic [G, Y], diabetis [X], scorpion sting [X, Z],	0.18	0.25	0.32	0.14	R

							wound healing [G, Y, Z]					
Pinus wallichiana A.B. Jacks. Pinaceae A. Khu. 099.UOP	**Pewoch**	Resin [G, Y], seed [G]	T	W	Direct	T	Antipyretic [G], pimples [G, Y]	Ab	Ab	0.24	0.40	I
Pistacia chinensis Bungue. Anacardiaceae A. Khu. 100.UOP	**Shnaye**	Leaves [Y, X], bark [X]	T	W	Powder	O	Antiseptic [X], jaundice [Y], liver diseases [Y]	0.31	0.23	Ab	0.49	V
Plantago lanceolata L. Plantaginaceae A. Khu. 101.UOP	**Jabai**	Leaves [G, Y]	H	W	Juice	T	Anti-inflammatory [G, Y], wound healing [G]	Ab	Ab	0.72	0.81	I
Plantago major L. Plantaginaceae A. Khu. 102.UOP	**Ghwa jabai**	Leaves [G, Y]	H	W	Juice	T	Wound healing [G, Y], skin diseases [G]	Ab	Ab	0.79	0.68	R
Polygonatum multiflorum (L.) All Asparagaceae A. Khu. 103.UOP	**Noorealam**	Whole plant [G, Y]	H	W	Decoction, Cooked	T,O	Stomach [G, Y], skin tonic [Y]	Ab	Ab	0.30	0.50	R
Polygonatum verticillatum (L) All. Asparagaceae A. Khu. 104.UOP	**Noorealam**	Leaves [G], young shoot [Y]	H	W	Decoction, Cooked	T,O	Tonic [G, Y], diuretic [Y]	Ab	Ab	0.21	0.17	R
Portulaca oleracea L. Portulacaceae A. Khu. 105.UOP	**Wrkharay**	Shoots [G, Y]	H	W	Cooked	O	Constipation [G, Y]	Ab	Ab	0.69	0.63	I
Prunus armeniaca L. Rosaceae A. Khu. 106.UOP	**Khubanai**	Fruits [G, Y, Z]	T	C	Direct	O	Cardiac problem [G, Y, Z]	Ab	Ab	0.41	0.54	---
Prunus domestica L. Rosaceae A. Khu. 107.UOP	**Alucha**	Fruits [G, Y, Z]	T	C	Direct	O	Sedative [G], febrifuge [Y, Z]	Ab	Ab	0.48	0.63	I

Pteridium aquilinum (L) Kuhn. Dennstaedtiaceae A. Khu. 108.UOP	**Kunjay**	Fronds [Y]	H	W	Cooked	O	Vegetables [Y]	Ab	Ab	Ab	0.41	R
Punica granatum L. Lythraceae A. Khu. 109.UOP	**Anar**	Fruits Bark [G, Y, Z]	T	C	Powder, Direct	O	Sugar patient [G, Y, Z]		0.32	0.39	0.64	I
Pyrus pashia Buch. – Ham. ex D. Don Rosaceae A. Khu. 110.UOP	**Tangaye**	Fruits [G, Z, Y, Z]	T	C	Direct	O	Weakness [G, Z, Y], coughing [G, Z]	Ab	0.45	0.31	0.58	---
Quercus incana W.Bartram. Fagaceae A. Khu. 111.UOP	**Toor Banj**	Fruits [X], bark [G]	T	W	Plaster, Powder	O,T.	Bone fracture [G, X], chest [X], urinary disorder [G, X]	0.55	Ab	0.45	0.69	V
Quercus oblongata D. Don Fagaceae A. Khu. 112.UOP	**Banj**	Fruit [G, Y]	T	W	Decoction	O	urinary infection [G, Y]	Ab	Ab	0.57	0.40	V
Rhododendron arboreum Sm. Ericaceae A. Khu. 113.UOP	**Gul-namaire**	Flower [G, Y]	S	W	Decoction	O	Antipyretic [G], refrigerant [Y], flavoring agent [Y]	Ab	Ab	0.52	0.70	I
Ricinus communis L. Euphorbiaceae A. Khu. 114.UOP	**Harhanda**	Seed [Y], oil [Y]	S	W	Oil	O	Constipation [Y], sedative [Y]	Ab	Ab	Ab	0.49	R
Robinia pseudoacacia L. Fabaceae A. Khu. 115.UOP	**Kikar**	Leaves [G, Y]	T	C	Decoction, Plaster	O,T.	Diabetes [G], spasm [G, Y]	Ab	Ab	0.19	0.32	V
Rosa damascena Herrm. Rosaceae A. Khu. 116.UOP	**Palwarai**	Petals [G]	S	W	Juice	O	Diabetes [G]	Ab	Ab	0.25	Ab	---

Rosa webbiana Wall. Ex Royle. Rosaceae A. Khu. 117.UOP	**Zangaly gulab**	Fruits [G, X]	S	W	Direct, powder	O	Memory stimulant [G], antipasmodic [G, X]	0.35	Ab	0.30	Ab	I
Rumex dentatus L. Polygonaceae A. Khu. 118.UOP	**Shalkhay**	Leaves [G, X, Y, Z]	H	W	Decoction, Plaster	O,T.	Skin rash [G, Y], wound healing [G, X, Y], Skin inflammation [X, Z]	0.57	0.41	0.29	0.72	I
Rumex hastatus D. Don. Polygonaceae A. Khu. 119.UOP	**Nra shalkhay**	Leaves [G, X, Y, Z], roots [X]	H	W	Juice, Direct	O,T	Purgative [G, X, Y, Z], arthritis [G, Y], Skin inflammation [X]	0.52	0.32	0.50	0.57	V
Jacobaea analoga (DC.) Veldkamp Asteraceae A. Khu. 120.UOP	**Sra jaby**	Leaves [G, X, Y], Rhizome [G, X]	H	W	Plaster	T	Wound healing [G, X], piles [X], Swelling [G, Y]	0.47	0.31	0.68	0.38	I
Skimmia laureola (DC.) Decne. Rutaceae A. Khu. 121.UOP	**Nazar panra**	Leaves [G]	S	W	Extract	T	Smallpox [G]	Ab	Ab	0.72	Ab	V
Solanum virginianum L. Solanaceae A. Khu. 122.UOP	**Marraghon ay**	Root [G, X], leaves [G, X, Z]	H	W	Decoction, Direct, Plater	O,T.	Bone fracture [G, X, Z], cough [C], bronchitis [G, Z], antipyretic [G]	0.50	0.68	0.74	Ab	V
Sonchus asper L. Hill Asteraceae A. Khu. 123.UOP	**Shodapay**	Leaves [G, X]	H	W	Decoction	O	Fever [X], constipation [X], stomach problem [G], antipyretic [G]	0.47	0.73	0.54	Ab	R
Sorghum halepense (L.) Pers. Poaceae A. Khu. 124.UOP	**Dadam**	Rhizome[G, Y, Z, X]	H	W	Juice, Powder	O,T.	Snake bite [G, X, Z], anti venom[Y, X] Anti-inflammatory [G,	0.10	0.11	0.05	0.07	I

							[Z]					
Stellaria media (L .) Vill. Caryophyllaceae A. Khu. 125.UOP	**Spin guly**	Whole plant [X, Y], leaves [G]	H	W	Plaster	T	Swellings [X, Y], bone fracture [G, X]	0.35	0.23	0.50	0.43	I
Tamarix aphylla (L.) H. Karst. Tamaricaceae A. Khu. 126.UOP	**Ghaz**	Bark [G], roots [G]	T	C	Decoction	O,T	Anti-inflammatory [G], toothache [G]	Ab	Ab	0.29	Ab	---
Taxus baccata L. Taxaceae A. Khu. 127.UOP	**Banrya**	Bark [G], leaves [G]	T	W	Powder	O	Pneumonia [G], hepatitis [G], diabetes [G]	Ab	Ab	0.27	Ab	V
Tribulus terrestris L. Zygophyllaceae A. Khu. 128.UOP	**Makunday**	Resin [G], seed [G], leaves [X]	H	W	Juice	O	Antipyretic [G], Pimples [G], chronic cough [X]	0.39	0.51	0.57	Ab	R
Trichodesma indicum (L.) Sm. Boraginaceae A. Khu. 129.UOP	**Ghwa jaby**	Leaves [X, Y], Root [G, X]	H	W	Plaster	T	Anti-inflammatory [G, Y], Snake bite [G, X]	0.54	Ab	0.35	0.64	R
Vincetoxicum hirsutum (Wall.) Kuntze. Apocynaceae A. Khu. 130.UOP	**Gilo**	Leaves [Y, Z]	H	W,C	Decoction	O	Asthma [Y], jaundice [Y], blood purifier [Y, Z]	Ab	0.52	Ab	0.40	---
Verbascum Thapsus L. Scrophulariaceae A. Khu. 131.UOP	**Kharghogy**	Leaves [G, X, Z]	H	W	Juice	Eardrop	Woung healing [G, X, Z]	0.20	0.30	0.13	Ab	R
Verbena officinalis L. Verbenaceae A. Khu. 132.UOP	**Shamakai**	Whole Plant [G, Y]	H	W	Gargle	O	Tonic [G] , gum disease [G, Y]	Ab	0.57	0.42	0.34	---
Viola canescens Wall. Violaceae A. Khu. 133.UOP	**Banafsha**	Rhizome [G], leaves [G, X], whole plant [X, Y]	H	W	Plaster	T	Wound healing [G, X], Arthritis [G, Y]	0.57	0.32	0.72	0.18	V

Viola odorata L. Violaceae A. Khu. 134.UOP	**Banafsha**	Leaves [G, X]	H	W	Decoction	O,T.	Itchy throat [G], Cough [X], respiratory problem [X]	0.63	Ab	0.41	Ab	V
Vitex negundo L. Lamiaceae A. Khu. 135.UOP	**Marwanday**	Young shoot [G], Seeds [X], leaves [X]	S	W	Juice	O	Rheumatism [G, X], cramps [G], Arthritis [X]	0.09	Ab	0.18	Ab	I
Withania somnifera (L) Dunal. Solanaceae A. Khu. 136.UOP	**Kotilal**	Leaves [G], fruits [X]	S, H	W	Powder	O	Diuretic [G], pneumonia [G], TB patients [G]	0.71	0.74	0.88	Ab	I
Woodfordia fruticosa (L.) Kurz Lythraceae A. Khu. 137.UOP	-	Flower [X]	S	W	Powder	O	Depurative [X], ulcer [X], wound [X], headache [X]	0.07	Ab	Ab	Ab	---
Xanthium strumarium L. Asteraceae A. Khu. 138.UOP	**Ghiskay**	Leaves [G, X], seed [G]	S	W	Plaster, Decoction	O,T.	Indigestion [G], diarrhea [G], stomach disease [G], smallpox [G, X]	0.37	0.50	0.64	Ab	I
Zanthoxylum armatum DC. Rutaceae A. Khu. 139.UOP	**Dambara**	Fruits [G, X, Z]	S	W	Direct, Powder	O	Abdominal pain [G, Z], stomach problem [X, Z], gum pain [G], cooling agent [G, Z]	0.55	0.42	0.59	Ab	V
Ziziphus jujuba Mill. Rhamnaceae A. Khu. 140.UOP	**Bera**	Leaves [X, Z]	T	W	Direct	O	Diabetes [X, Z]	0.20	0.35	Ab	Ab	I
Ziziphus nummularia (Burm.f.) Wight & Arn. Rhamnaceae A. Khu. 141.UOP	**Bera**	Fruits [G, X, Z], leaves [G, X]	T	C	Decoction	O	Ulcer [G, X, Z], skin infection [G, Z]	0.47	0.43	0.53	Ab	R
Ziziphus oxyphylla Edgew.	**Elany**	Fruits [G, Y], roots [G, X]	S	W	Decoction, Powder	O	Diabetes [G, X, Y], loss of appetite	0.52	0.30	0.40	0.62	V

Rhamnaceae A. Khu. 142.UOP							[G], constipation [G, Y], jaundice[X]					

Abbreviation key*: UV, use value; X, chinglai; Z, chamla; G, gokand; Y, chagharzai; O, oral; C, cultivated; W, wild; H, herb; T, tree; S, shrub; CS, conservation status.*

Plant Life Form

Based on reports of a total of 142 specimens, the most prevalent plant life form was herb, which accounted for 78 (54.9%), followed by trees (26.0%) and shrubs (19.01%). Compared to other living forms, herbs are more easily accessible and effective at treating a variety of ailments, which may account for their widespread use.

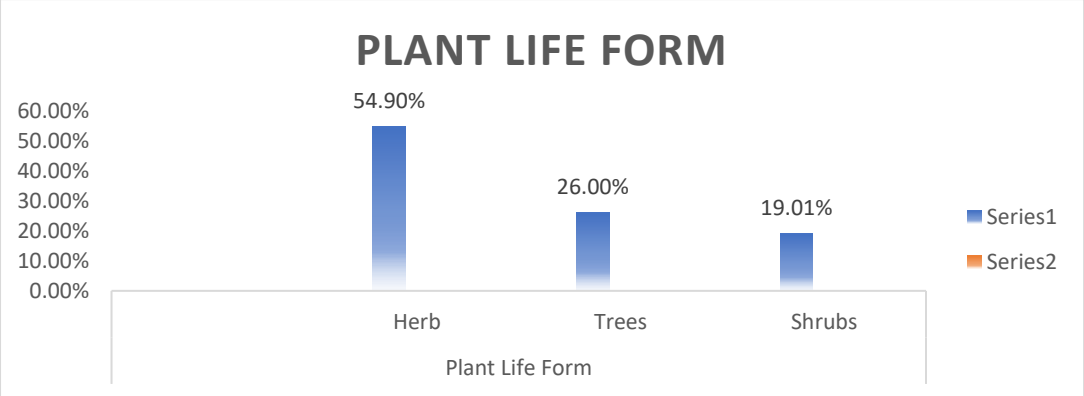

Figure 1; plant life form.

Collection and Mode of Administration

This data was gathered from a variety of habitat, including mountains, deserts, and woodland areas. The most common method of administration (72.25%) was oral, followed by topical (27.17%) and toothbrush usage (1%).

Preparation of Remedies.

The most prevalent form of preparation was decoction (23.33%), followed by used Direct (17.77%), Juice (17.22%), Powder (13.88), Plaster (11.66%), Cooked (7.22%), Oil (4.44%), Extract (2.22%), and the rest of Smoke, (shown in Figure 3)

Paste, Gargle, Gel use (0.55%). Decoction is a commonly used method of preparing herbal remedies in many cultures around the world. It involves boiling plant material in water to extract its active compounds, and the resulting liquid is then consumed as a tea or infusion.

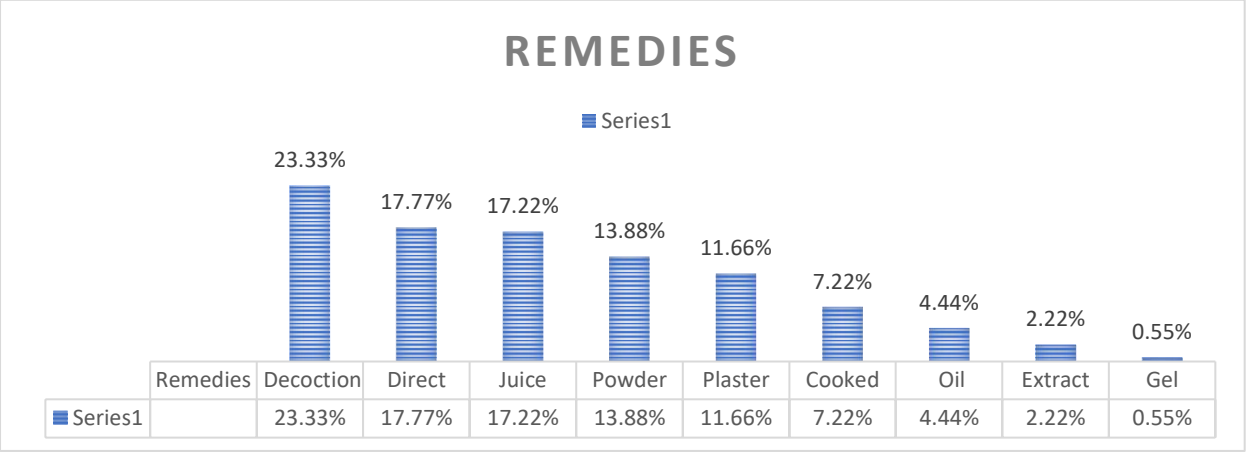

Figure 2; Preparation of Remedies

Conservation Status of the Medicinal Flora

The conservation status of medicinal flora varies widely, depending on the specific plant species and their natural habitats. Many medicinal plants are threatened or endangered due to habitat destruction, over-harvesting, and climate change. Yet no effort has yet been launched to protect the forests or the plants. As illustrated in Figure 4, 38 species were discovered to be infrequent, followed by 37 species that have been rare, and 35 species that were vulnerable. Due to urbanization, a limited population, human activities, extensive collecting, marble mining, and unfavorable climatic factors,

we discovered that six species were threatened in the study region. Their recovery has already been hampered by an inadequate environment and unsustainable use, placing them in the endangered category. Moreover, indigenous knowledge can support the conservation and sustainable usage of significant species of medicinal plants.

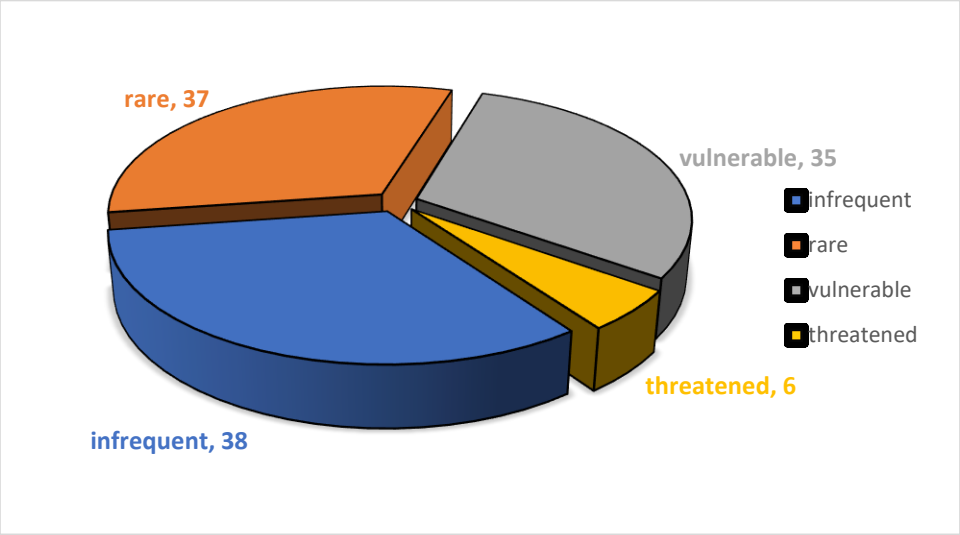

Figure 3; Conservation Status of the Medicinal Flora

DISCUSSION

An ethnobotanical survey would be highly valuable given its rich history of traditional medicinal practices. Traditional Asian medicine and ethnobotanical research are getting more attention globally (Lu, et al., 2022). In light of its several functions in assisting with health care and alleviating poverty. Traditional therapies are frequently a gender-based profession carried out by both men and women. This knowledge conveys mostly orally from generation to generation (Ahmad, et al., 2014). Our findings showed that women practitioners (25%) were underrepresented compared to men (75%); this is becouse of there cultural restriction. We can suggest that female have lesser knowledge as male. Among freelance people there are 8.05% Farmers, 5.00% shopkeepers, 13.33 pastorals, 14.17% traditional healers, 5.83% gardeners, 10.83% salesperson, 9.72% plants gatherers, 10.28% Hakeem, 6.94% drivers, 6.39% hunters, 9.44% dealers. All the people of the area have almost identical knowledge about medicinal plant due to some issue. Financial, lack of higher education and the modern medicine access is statistically low to the area. Due to certain challenges, they were compelled to rely on folk remedies, cultivating and using them more frequently than others while also contributing significantly to their conservation. Mansehra, Mardan, Swabi, Malakand, Shangla, and Swat, as well as other nearby places, have already been extensively researched for their medicinal plant resources. And therapeutic plant species were widely employed (Hussain, et al., 2022) (Shah, Shah, Ullah, Badshah, & Ullah, 2016) (Musharaf, 2014) (Sher, 2013) (Barkatullah, Ibrar, Rauf, Ben Hadda, & Patel, 2015), the same as in our research region. In their previous study, Herbal remedies were often made from a single plant species (Umair, Altaf, Bussmann, & Abbasi, 2019). Nonetheless, some traditional recipes utilized more than one plant species (Morvin Yabesh, Prabhu, & Vijayakumar, 2014). *Azadirachta indica* A. Juss. Was the most pertinent species and had the greatest used value, according to the quantitative study. Or other species which have the highest UV necessary defense for preserving biodiversity in the study area. Marble mining (Khan, Ali, & Dr. Syed Raza Shah Gilani, 2021), urbanization,overharvesting, and grazing were found to be the greatest threats to medicinal plant species in the research region, but there is no programme or initiative in place to maintain and conserve the flora and vegetation there.

Relevance with Other Studies

Traditional medicinal practices have a long history and have gained significant cultural and historical significance in the world (Fokunang, Ndikum, Tabi, & Ngameni, Traditional Medicine: Past, present and future research and development prospects and integration in the National Health System of Cameroon, 2011), these practices often involve the use of herbs, plants, and other natural substances for healing purposes. Numerous studies back up the claim that certain species are therapeutic in nature. *Allium cepa* bulb are use as antipoison also use for weakness. (Khan, Gilani, Hussain, & Durrani, 2003) . *Datura stramonium* is use againt stomach problems (Wali, Khan, Mahmood, Qureshi, & Mashwani, 2022). *Berberis lyceum* leaves, root, and Bark use for joint fracture and powder use for stomach problem (Wali, Khan, Mahmood, Qureshi, & Mashwani, 2022) (Ahmad, et al., 2014) *Convolvulus arvensis* are the plant which use for constipation. Fresh plants boiled in water as a vegetable and eaten with wheat bread twice a day (Abbas, Khan, Abbasi, Pieroni, & Ullah, 2016) *Ricinus communis* it is a poisonous plant but oil extract from seed is use against Constipation (Hussain, Nisar, Majeed, & Nawaz, 2010) In Chinese medicine, *Broussonetia papyrifera* has been traditionally employed to address inflammation, specifically targeting respiratory inflammation. Particularly to treat Diarrhea. (Ko, Kwon, Jin, Son, & Kim, 2013) Approximately four to five leaves of *Zizyphus jujube* chewed can lower blood glucose level. (AHMAD, QURESHI, ARSHAD, & KHAN, 2009) Cannabinoids are chemical which extract from the *Cannabis sativa* plant this plant mostly use for drugs but some time use as a medicine also. (Asati, Sahoo, Sahu, & Dwivedi, 2017) *Plantago lanceolate* juice which extract from leaves are use for Wound inflammation as well as against Constipation. (Amjad, et al., Ethnobotanical survey of the medicinal flora of Harighal, Azad Jammu & Kashmir, Pakistan, 2020) The survey can provide valuable insights into the local flora and its significance in the daily lives of people. Furthermore, it can help in preserving and promoting traditional knowledge, and provide a foundation for future research and conservation efforts.

Conclusions:

The survey revealed that the local people of Buner have a rich knowledge of medicinal plants, and they have been using these plants for generations to treat various ailments. The study found that the traditional knowledge of medicinal plants is largely held by elderly people and is mainly transmitted orally from generation to generation. The use of medicinal plants is deeply embedded in the cultural practices of the local people, and they have a strong belief in the efficacy of these plants. The study also found that there was a high level of diversity in the use of medicinal plants among the different valleys of Buner district. Each valley had its own unique set of medicinal plants, which reflects the diversity of the local flora and the cultural diversity of the communities living in these valleys. The most commonly used medicinal plants in the different valleys of Buner district included *Azadirachta indica*, *Foeniculum vulgare*, *Berberis lycium*, *Ficus carica*, *Mentha longifolia*, *Morus nigra*, and *Justicia adhatoda*.The study highlights the importance of documenting and preserving the traditional knowledge of medicinal plants in Buner district. The use of medicinal plants is an important part of the healthcare system in the region, and the loss of this knowledge could have serious implications for the health and wellbeing of the local communities. The study also underscores the need for further research on the pharmacological properties of these plants to validate their traditional use and to develop new medicines from these natural sources.

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