



## Cheek list of ethno botanical plants of tehsil colony, Samarbagh, District Dir lower, Khyber Pakhtunkhwa Pakistan

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### Abstract

A comprehensive survey of Ethno medicinal plants was carried out in Tehsil Colony Samar Bagh Khyber Pakhtunkhwa. A total of 50 plant species were collected from March to September along with their local name, botanical name, English name, family, habit, part use, method of use and Ethno medicinal uses. The data were collected through questionnaires and interviews of local peoples. Complete information was collected about the uses of plants in the current study. Many of the plants were observed to be used for multipurpose like *Allium sativum* of Amaryllidaceae and *Coriandrum sativum* of Apiaceae. Herbaceous cover was dominated with 20 species (40%) followed by trees with 17 species (34%) and then by shrubs with 13 species (26%). About 25 different families were recorded that use for the treatment of different diseases like constipation, diarrhea, digestion, dysentery and blood sugar. Herbaceous cover was dominated with 21 species followed by trees with 09 species and then by shrubs with 10 species. The local area Tehsil Colony Samar Bagh is rich in medicinal plants and can be used for curing different diseases instead of using imported medicines. But unfortunately due to unawareness of the indigenous peoples these plants Species are going to be endangered because they uproot and demolish these plants for burning purposes. The local area (Dir Lower) is rich in medicinal plants and can be used for curing different diseases instead of using imported medicines. The extraction of different chemicals from the local plants can also be done to support Pakistan's health issues and economy. But unfortunately due to unawareness of the indigenous peoples these plants are going to be endangered because they uproot and demolish these plants for burning purposes mostly. Indigenous knowledge regarding medicinal plants collection and their proper mode of administration should be collect from the local people to preserve these plants properly.

**Keywords:** Ethno botanical, tehsil colony, Samarbagh and district Dir Lower

### Introduction

Khyber Pakhtunkhwa is located in the North-West part of Pakistan. Khyber Pakhtunkhwa consists of eight divisions. In the West and North of Khyber Pakhtunkhwa Afghanistan is located, in the East it is linked with Azad Jammu, Kashmir and Punjab while in the South it is connected with Baluchistan. The tribal areas are present in between the settled district and Afghanistan on the Western side and the total area is 74521sq. km (Abbasi *et al.*, 2010) <sup>[1]</sup>. Different parts of the province have significantly varied climatic condition. The mountainous areas are very cold in winter while summer is pleasant. The plain areas are very hot in summer while very cold in winter. Summer season begins in April and last up to September. The hottest months are, June and July. Winter season begins in October and last till early April (Adnan *et al.*, 2013) <sup>[3]</sup>. District Lower Dir, situated in the Khyber Pakhtunkhwa Province of Pakistan, is one of the most important regions, both historically and culturally. It is one of the 26 districts of Khyber Pakhtunkhwa. The district came into existence in 1996 when District Dir was divided into two separate districts i.e. District Lower Dir and District Upper Dir. Lower Dir lies between 34° 37' to 35° 07' north latitudes and 71° 31' to 72° 14' east longitudes. The altitude of the district ranges from 600 m to 3000 m (Ahmad *et al.*, 2012) <sup>[4]</sup>. Hill tops are covered with sparse forests, Pine, Oak, *Eucalyptus*, *Acacia*, *Ailanthus* and *Olea* are the dominant trees in these forests (Khan *et al.*, 2009) <sup>[45]</sup>. Samar Bagh is one of the most important Tehsil of Dir Lower. Population of the area is 378608 according to the census 2017. Its area is about

284 km<sup>2</sup> and density is 1,334 / km<sup>2</sup>. The Tehsil is composed of six union councils. Location of Samar Bagh is towards North of the District which links with Tehsil Munda on South. It is linked with Afghanistan on West side by this way it has a great importance. While, Upper Dir and Chitral lies on North to Samar Bagh and on East side Tehsil Maidan is located (Ajaib *et al.*, 2010) <sup>[18]</sup>. The farmers in the study area mostly dependent on sowing of cereal crops for their survival. In winter season wheat is sown while in summer season maize is cultivated on agricultural land as well on mountainous areas. The average wheat production per Kanal land is 150 kg while that of maize is 200 kg. Besides this, People of the area are interested to grow orchards trees including Pomegranate, apricot, peach, walnut and grapes and vegetables such as pumpkins, long gourds, okra, tomato and beans for their house consumption (Ibrar *et al.*, 2007) <sup>[6]</sup>. The study area lies in subtropical dry temperate areas of Pakistan with rich biodiversity. The common species are *Olea ferruginea*, *Monotheca buxifolia*, *Acacia modesta*, *Punica granatum*, *Dalbergia sissoo*, *Ficus palmata* and *Quercus baloot*. Based on the ecological aspects of the forest communities and quantitative analysis of forest vegetation of the area the upper areas were densely dominated by Chir, Fir, Spruce, Deodar, Kail, Pholai, Babul, Bekanrh, Loor, Zaitoon, Akhroot and Enjeer (Ahmed *et al.*, 2009) <sup>[46]</sup>. (Khan *et al.*, 2010) <sup>[43]</sup>. the weed vegetation was mostly dominated by *Convolvulus arvensis*, *Avena sativa*, *Fumaria indica*, *Tulipa*

*stellata* and *Stellaria media* respectively (Jan *et al.*, 2011) [47]. It is the study of association as well as connection among plants and peoples in space with time (Kaur and Vashistha, 2014) [16]. Ethno botanical definition can be make shower in four words vegetation, persons, use and association. The origin of ethno botany is attached to basic botany because the botanical study initiated with the aim of using vegetation for the cure of diseases (Hinesburg and Neubert, 2005). Human cannot live without plants. Without plants no life on the earth is possible (Harvey *al.*, 2010) [15]. The villagers have more knowledge of about the advantage of plants. Poverty is common here so, they use plant for medical purposes (Gupta and Dubey, 2016) [12]. Though from the start it is much criticized word but due to its effortlessly comprehensible background as well as articulacy of its main concepts, it is well-liked among the whole scientists of the world (Davis, 2000) [9]. In most part of the Khyber Pakhtunkhwa people is still used medical plant for the cure of various disease a complete list of medicinal plant was collected from Chinghai Valley. The basic structure of Ethiopian research is the study of understanding and understanding of human populations, cultural norms, and plant relationships, knowing which invades plants in many feature of society, both materially and figuratively, and natural supplies with each other.

## 2. Materials and Methods

Present study was being carried out during April 2021 to April 2022. During the study time the project area was visited once a month for collection of data pertinent to Ethno botany, conservation and plant diversity of the area. Each study trip was plan and executed effectively. The research project was complete in three phases. These include literature collection, field trips for data collection and documentation of the data obtained from Tehsil Colony Samarbagh Dir Lower different site.

### 2.1. Field Work

Field work was carry out in order to investigate the ethno botany, plant diversity and conservation status of the flora of Tehsil Colony Samarbagh Dir Lower. The field work were includes interviews, observations and guided field walks / transects walks. Two methods were frequently use during the field work.

### 2.2. Observations

This method was being based on observations in the field conditions. These observations were make while visiting different villages. During this process, local methods of medicinal plants collection, storage, drying, harvesting time, processing and utilization were observed and noted. In the meantime, all the plants during flowering / fruiting stage, was collected, pressed and preserved.

### 2.3 Botanical Identification

Plant samples are collected throughout the field work were taxonomically identified by using Flora of Pakistan, and placed in the Herbarium of Govt. Ghazi Umara khan Degree College Samar bagh. The voucher specimens were kept after broad documents for future references. From Medicinal Plant Names Services (mpns.kew.org / mpns) the correct name of plant were confirmed.

### 2.4. Interviews

During field work, interviews was conducted with the local inhabitants, selected informants, the herbalists 'hakims' (local physicians of eastern system of medicine), pansaries (medicinal plants sellers in the local markets). Questionnaires was adopted during the surveys in order to get qualitative and participatory approach about the plant resources and their utilization by the local people. Questions concerning the utility of different plants, quantity of plants used, rate of consumption, availability, economics/market value and fuel wood / fodder head loads were asked.

### 2.5. Ethno botany

The plants of ethno botanical importance will have collected and classified on the basis of their utility in the area. Local people including plant collectors and other on the basis of age group will interviewed for ethno botanical information of the area. The timings for field work will selected according to the growth and collection season of the plants. Population size and its distribution, languages, ethnic affiliation, history of settlement, major social groups or classes, productive activities, subsistence crops, migration trends etc. will also explored during the field work.

**Table 1:** List of plants of the research area

S. no	Botanical name	Local name	Family
1.	<i>Euphorbia helioscopia</i> L.	Mandarro	Euphorbiaceae
2.	<i>Allium cepa</i> L.	Piyaz	Liliaceae
3.	<i>Allium sativum</i> L.	Ooga	Liliaceae
4.	<i>Avena sativum</i> L	Jawdar	Poaceae
5.	<i>Achyranthes aspera</i> L	Geshay	Amaranthaceae
6.	<i>Ajuga bracteosa</i> Wall. Ex Benth	Goatee	Lamiaceae
7.	<i>Calotropis procera</i> (Willd.) R. Br.	Spulmay	Apocynaceae
8.	<i>Berberis lycium</i> Royle	Kowary	Berberidaceae
9.	<i>Micromeria biflora</i> Benth	Shomaky	Lamiaceae
10.	<i>Mentha longifolia</i> (L.)	Villanay	Lamiaceae
11.	<i>Cannabis sativum</i> Linn	Bhang	Canabiaceae
12.	<i>Juglans regia</i> L.	Ghooz	Juglandaceae
13.	<i>Ficus carica</i> L.	Inzar	Moraceae
14.	<i>Indigofera heterantha</i> Wall. Ex Brand	Ghoraja	Fabaceae
15.	<i>Brassica campestris</i> Linn	Sharsham	Brassicaceae
16.	<i>Chenopodium album</i> L.	Sarmay	Amaranthaceae

17.	<i>Luffa cylindrica</i> (Linn.) Roem	Torai	Cucurbitaceae
18.	<i>Maytenus royleana</i> (Wall. ex Lawson) Cuf	Spin azghakay	Celastraceae
19.	<i>Morus alba</i> L	Spin Toot	Moraceae
20.	<i>Morus nigra</i> L	Toor Toot	Moraceae
21.	<i>Mirabilis jalapa</i> L.	Gul-e-Abbasi	Nyctaginaceae
22.	<i>Monothecha buxifolia</i> (Falc.) A. D	Gorgowara	Sapotaceae
23.	<i>Nerium oleander</i> Linn	Ganderay	Apocynaceae
24.	<i>Olea ferruginea</i> Royle	Khona	Oleaceae
25.	<i>Oxalis corniculata</i> L	Manzakeen tarookay	Oxalidaceae
26.	<i>Platanus orientalis</i> L.	Chenor	Platanaceae
27.	<i>Acacia Modesta</i>	Palousa	Fabaceae
28.	<i>Datura innoxia</i> Mill	Batura	Solanaceae
29.	<i>Dodonaea viscosa</i> L	Ghwaraskay	Sapindaceae
30.	<i>Debregeasia saeneb</i> . F	Karwarra	Urticaceae
31.	<i>Eucalyptus camaldulensis</i> deh	Laachi	Myrtaceae
32.	<i>Quercus ineama</i> Roxb	Serray	Fagaceae
33.	<i>Convolvulus arvensis</i>	Perwathy	Convolvulaceae
34.	<i>Ricinus communis</i> L	Arhanda	Euphorbiaceae
35.	<i>Calendula arvensis</i> L.	Zyarguly	Asteraceae
36.	<i>Verbascum Thapsus</i> L	Khurdug	Scrophulariaceae
37.	<i>Cedrus deodara</i> (Roxb. ex D. Don) G. Don	Diyar	Pinaceae
38.	<i>Coriandrum sativum</i> L	Dania	Apiaceae
39.	<i>Salix Alba</i> L.	Walla	Salicaceae
40.	<i>Mentha arvensis</i> L	Pudina	Lamiaceae
41.	<i>Citrus limon</i> L. Osbeck	Limbo	Rutaceae
42.	<i>Citrus medica</i> L	Nakhtar, Ghwargai	Pinaceae
43.	<i>Artemisia vulgaris</i> L	Tarkha	Asteraceae
44.	<i>Cucumis sativus</i> L.	Badrang	Cucurbitaceae
45.	<i>Cucurbita maxima</i> Duch. Ex Lam	Khog kadoo	Cucurbitaceae
46.	<i>Celtis caucasica</i> Willd	Taghaga	Cannabaceae
47.	<i>Isodon rugosus</i> (Wall. ex Bth.) Codd	Spairkay	Lamiaceae
48.	<i>Nasturtium officinale</i> R.Br.	Tarmira	Brassicaceae
49.	<i>Sonchus asper</i> L.	Shawda pai	Asteraceae
50.	<i>Citrus medica</i> L	Too rang	Rutaceae

Table 2: Plants used for Fuels

S. no	Botanical name	Local name	Family
1.	<i>Euphorbia helioscopia</i> L.	Mandarro	Euphorbiaceae
2.	<i>Achyranthes aspera</i> L	Geshay	Amaranthaceae
3.	<i>Calotropis procera</i> (Willd.) R. Br.	Spulmay	Apocynaceae
4.	<i>Berberis lycium</i> Royle	Kowary	Berberidaceae
5.	<i>Micromeria biflora</i> Benth	Shomaky	Lamiaceae
6.	<i>Cannabis sativa</i> Linn	Bhang	Canabiaceae
7.	<i>Juglans regia</i> L.	Ghooz	Juglandaceae
8.	<i>Ficus carica</i> L.	Inzar	Moraceae
9.	<i>Indigofera heterantha</i> Wall. Ex Brand	Ghoraja	Fabaceae
10.	<i>Chenopodium album</i> L.	Sarmay	Amaranthaceae
11.	<i>Morus alba</i> L	Spin Toot	Moraceae
12.	<i>Morus nigra</i> L	Toor Toot	Moraceae
13.	<i>Monothecha buxifolia</i> (Falc.) A. D	Gorgowara	Sapotaceae
14.	<i>Olea ferruginea</i> Royle	Khona	Oleaceae
15.	<i>Platanus orientalis</i> L.	Chenor	Platanaceae
16.	<i>Acacia Modesta</i>	Palousa	Fabaceae
17.	<i>Dodonaea viscosa</i> L	Ghwaraskay	Sapindaceae
18.	<i>Eucalyptus camaldulensis</i> deh	Laachi	Myrtaceae
19.	<i>Quercus ineama</i> Roxb	Serray	Fagaceae
20.	<i>Celtis caucasica</i> Willd	Taghaga	Cannabaceae

Table 3: Plants used for Furniture

S. no	Botanical Name	Local name	Family
1.	<i>Juglans regia</i> L.	Ghooz	Juglandaceae
2.	<i>Olea ferruginea</i> Royle	Khona	Oleaceae
3.	<i>Platanus orientalis</i> L.	Chenor	Platanaceae
4.	<i>Acacia Modesta</i>	Palousa	Fabaceae
5.	<i>Quercus ineama</i> Roxb	Serray	Fagaceae
6.	<i>Cedrus deodara</i> (Roxb. ex D. Don) G. Don	Diyar	Pinaceae
7.	<i>Salix Alba</i> L.	Walla	Salicaceae

**Table 4:** Plants used for Fodder

S. no	Botanical NAME	Local name	Family
1.	<i>Avena sativa</i> L	Jawdar	Poaceae
2.	<i>Achyranthes aspera</i> L	Geshay	Amaranthaceae
3.	<i>Mentha longifolia</i> (L.)	Villanay	Lamiaceae
4.	<i>Indigofera heterantha</i> Wall. Ex Brand	Ghoraja	Fabaceae
5.	<i>Brassica campestris</i> Linn	Sharsham	Brassicaceae
6.	<i>Maytenus royleana</i> (Wall. Lawson)	Spin azghakay	Celastraceae
7.	<i>Morus alba</i> L	Spin Toot	Moraceae
8.	<i>Morus nigra</i> L	Toor Toot	Moraceae
9.	<i>Monothecha buxifolia</i> (Falc.) A. D	Gorgowara	Sapotaceae
10.	<i>Oxalis corniculata</i> L	Manzakeen tarookay	Oxalidaceae
11.	<i>Celtis caucasica</i> Willd	Taghaga	Cannabaceae

**Table 5:** Plant used as vegetable

S. no	Botanical name	Local name	Family
1.	<i>Allium cepa</i> L.	Piyaz	Liliaceae
2.	<i>Allium sativum</i> L.	Ooga	Liliaceae
3.	<i>Brassica campestris</i> Linn	Sharsham	Brassicaceae
4.	<i>Luffa cylindrica</i> (Linn.) Roem	Torai	Cucurbitaceae
5.	<i>Coriandrum sativum</i> L	Dania	Apiaceae
6.	<i>Mentha arvensis</i> L	Pudina	Lamiaceae
7.	<i>Cucumis sativus</i> L.	Badrang	Cucurbitaceae
8.	<i>Cucurbita maxima</i> Duch. Ex Lam	Khog kadoo	Cucurbitaceae
9.	<i>Nasturtium officinale</i> R.Br.	Tarmira	Brassicaceae

**Table 6:** Plants used for shelter

S. no	Botanical Name	Local name	Family
1.	<i>Juglans regia</i> L.	Ghooz	Juglandaceae
2.	<i>Ficus carica</i> L.	Inzar	Moraceae
3.	<i>Indigofera heterantha</i> Wall. Ex Brand	Ghoraja	Fabaceae
4.	<i>Morus alba</i> L	Spin Toot	Moraceae
5.	<i>Morus nigra</i> L	Toor Toot	Moraceae
6.	<i>Monothecha buxifolia</i> (Falc.) A. D	Gorgowara	Sapotaceae
7.	<i>Olea ferruginea</i> Royle	Khona	Oleaceae
8.	<i>Platanus orientalis</i> L.	Chenor	Platanaceae
9.	<i>Acacia Modesta</i>	Palousa	Fabaceae
10.	<i>Dodonaea viscosa</i> L	Ghwaraskay	Sapindaceae
11.	<i>Debregeasia saeneb</i> . F	Karwarra	Urticaceae

**Table 7:** Plants used for Ornamentals

S. no	Botanical Name	Local name	Family
1.	<i>Mirabilis jalapa</i> L.	Gul-e-Abbasi	Nyctaginaceae
2.	<i>Nerium oleander</i> Linn	Ganderay	Apocynaceae
3.	<i>Convolvulus arvensis</i>	Parvathy	Convolvulaceae
4.	<i>Calendula arvensis</i> L.	Zyarguly	Asteraceae
5.	<i>Artemisia vulgaris</i> L	Tarkha	Asteraceae

**Table 8:** Plants Used for Food

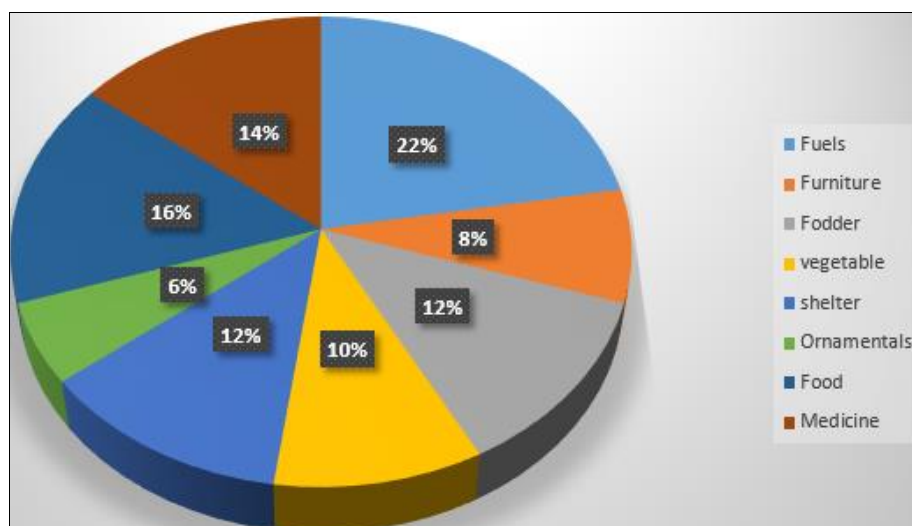
S. no	Botanical Name	Local name	Family
1.	<i>Allium cepa</i> L.	Piyaz	Liliaceae
2.	<i>Allium sativum</i> L.	Ooga	Liliaceae
3.	<i>Juglans regia</i> L.	Ghooz	Juglandaceae
4.	<i>Ficus carica</i> L.	Inzar	Moraceae
5.	<i>Luffa cylindrica</i> (Linn.) Roem	Torai	Cucurbitaceae
6.	<i>Monothecha buxifolia</i> (Falc.) A. D	Gorgowara	Sapotaceae
7.	<i>Olea ferruginea</i> Royle	Khona	Oleaceae
8.	<i>Coriandrum sativum</i> L	Dania	Apiaceae
9.	<i>Mentha arvensis</i> L	Pudina	Lamiaceae
10.	<i>Citrus limon</i> L. Osbeck	Limbo	Rutaceae
11.	<i>Citrus medica</i> L	Malta	Rutaceae
12.	<i>Cucumis sativus</i> L.	Badrang	Cucurbitaceae
13.	<i>Cucurbita maxima</i> Duch. Ex Lam	Khog kadoo	Cucurbitaceae
14.	<i>Nasturtium officinale</i> R.Br.	Tarmira	Brassicaceae

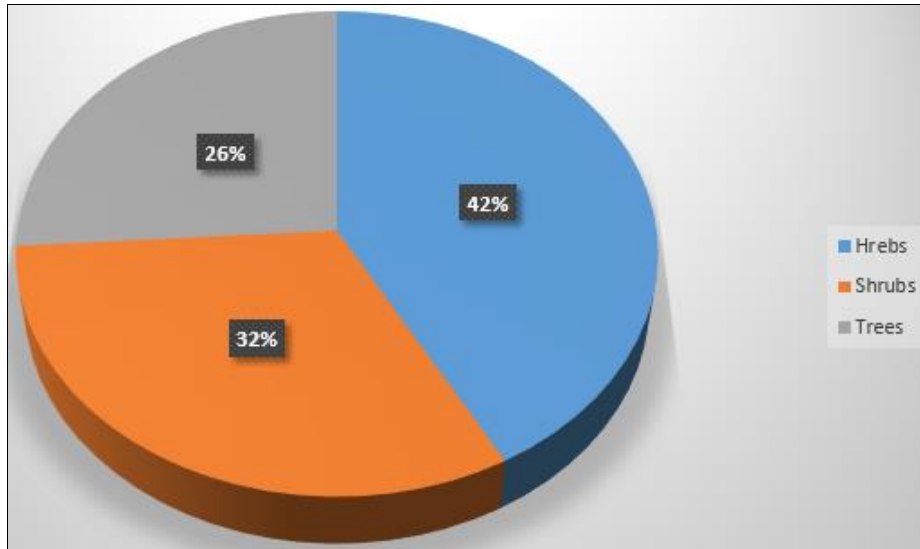
**Table 9:** Plants used for Medicine

S. no	Botanical name	Local name	Family
1.	<i>Ajuga bracteosa</i> Wall. Ex Benth	Goatee	Lamiaceae
2.	<i>Berberis lycium</i> Royle	Kowary	Berberidaceae
3.	<i>Micromeria biflora</i> Benth	Shomaky	Lamiaceae
4.	<i>Mentha longifolia</i> (L.)	Villanay	Lamiaceae
5.	<i>Cannabis sativa</i> Linn	Bhang	Canabiaceae
6.	<i>Ficus carica</i> L.	Inzar	Moraceae
7.	<i>Mirabilis jalapa</i> L.	Gul-e-Abbasi	Nyctaginaceae
8.	<i>Datura innoxia</i> Mill	Batura	Solanaceae
9.	<i>Ricinus communis</i> L	Arhanda	Euphorbiaceae
10.	<i>Verbascum Thapsus</i> L	Khurdug	Scrophulariaceae
11.	<i>Mentha arvensis</i> L	Pudina	Lamiaceae
12.	<i>Isodon rugosus</i> (Wall. ex Bth.) Codd	Spairkay	Lamiaceae
13.	<i>Sonchus asper</i> L.	Shawda pai	Asteraceae

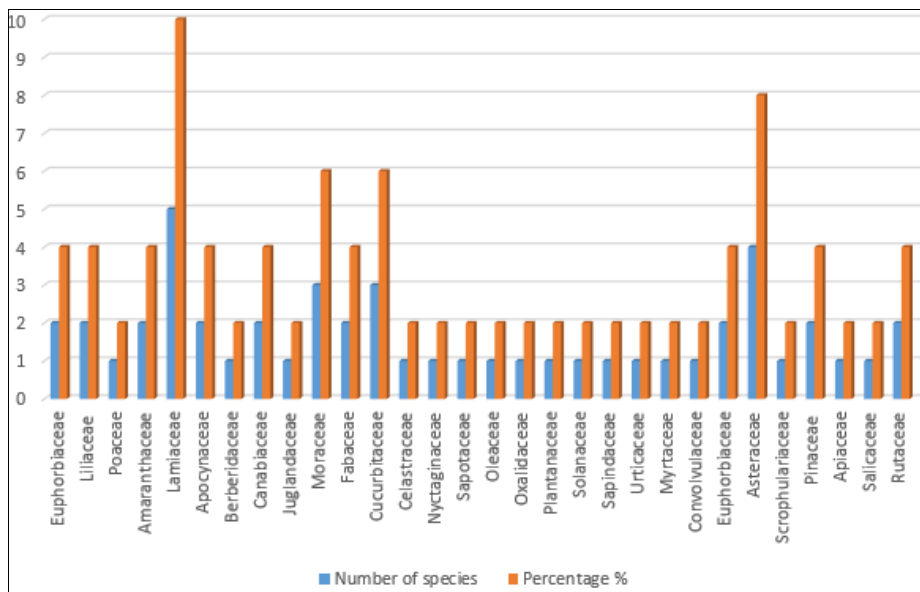
**Table 10:** Plants Families and Their Percentage

S. no	Family	Number of species	Percentage %
1	Euphorbiaceae	2	4
2	Liliaceae	2	4
3	Poaceae	1	2
4	Amaranthaceae	2	4
5	Lamiaceae	5	10
6	Apocynaceae	2	4
7	Berberidaceae	1	2
9	Canabiaceae	2	4
10	Juglandaceae	1	2
11	Moraceae	3	6
12	Fabaceae	2	4
13	Cucurbitaceae	3	6
14	Celastraceae	1	2
15	Nyctaginaceae	1	2
16	Sapotaceae	1	2
17	Oleaceae	1	2
18	Oxalidaceae	1	2
19	Platanaceae	1	2
20	Solanaceae	1	2
21	Sapindaceae	1	2
22	Urticaceae	1	2
23	Myrtaceae	1	2
24	Convolvulaceae	1	2
25	Euphorbiaceae	2	4
26	Asteraceae	4	8
27	Scrophulariaceae	1	2
28	Pinaceae	2	4
29	Apiaceae	1	2
30	Salicaceae	1	2
31	Rutaceae	2	4

**Graph 1:** Representation of Plants used for, Fuels, Furniture, Fodder, Vegetable, Shelter, Ornamentals, Food and Medicine



Graph 2: Representation of Herbs, Shrubs and Trees



Graphs 3: Representation of families and their percentage

#### 4. Discussion

Traditional medicines are a vital and often underestimated part of health care. Nowadays, it is practiced in almost every country of the world. Its demand is currently increasing rapidly in the form of alternative medicine (Aziz, 2018). Ethno medicinal plants have been widely applied in traditional medicine systems to treat various ailments. About 80% of the populations in developing countries rely on medicinal plants to treat diseases, maintaining and improving the lives of their generation (Tuasha, 2018) [18]. Traditional knowledge has a long historical cultural heritage and rich natural resources that has accumulated in the indigenous communities through oral and discipleship practices (Ouelbani, 2016) [31]. Traditional indigenous knowledge is important in the formulation of herbal remedies and isolates bioactive constituents which are a precursor for semisynthetic drugs. It is the most successful criterion for the development of novelties in drugs (Hassaine and Benmalek, 2022) [49]. A total of 50 medicinal species including 40 vascular plant species belonging to 26 families. The current study reveals that the family Asteraceae represents eight species followed by seven species of Lamiaceae and Rosaceae each which showed a

higher number of medicinal plants. Three species were contributed by each of Moraceae, Asclepiadaceae, Polygonaceae, Brassicaceae, Solanaceae, Cucurbitaceae, and Amaryllidaceae. While the remaining eight families, namely, Poaceae, Zingiberaceae, Chenopodiaceae, Plantaginaceae, Apiaceae, Fabaceae, and Zygophyllaceae, contributed two species each. Asteraceae, Lamiaceae, and Rosaceae were also reported with a high number of plants used for medicinal purposes. The high dependency on traditional healers is due to limited and inaccessible health facilities. Most people either take recipes from local healers or select wild medicinal plants prescribed by them. Some elders also knew how to preserve medicinal plant parts for future use. Traditional knowledge of medicinal plants is declining in the area due to lack of interest in the young generation to acquire this traditional treasure. Furthermore, most traditional health healers and knowledgeable elders hesitate to disseminate their recipes. Therefore, traditional knowledge in the area is diminishing as aged persons are passing away. Vernacular names of plants are the roots of ethno medicinal diversity knowledge (Khasbagan, 2008) [22]. They can clear the ambiguity in the identification of medicinal

plants within an area. It also helps in the preservation of indigenous knowledge of medicinal plants. The medicinal plants were mostly reported with one specific vernacular name in the investigated area. The species with high use value need conservation for maintaining biodiversity in the study area. However, in the present case, no project or programs for the conservation of forest or vegetation are operating. Grazing and unsustainable medicinal uses were observed as the chief hazard to highly medicinal plant species. The higher use of herbs can be attributed to their abundance, diversity, and therapeutic potentials as anti-diabetic, antimalarial, antipyretic, antiulcerogenic, antipyretic, blood purifier, and emollient and for blood pressure, hepatitis, stomach pain, and itching. *Aloe Vera*, cultivated for ornamental purpose, is used as wound healing agent. Among the plant parts, the higher use of fruit may relate to its nutritional value. The aerial parts of the herbaceous plants were mostly collected in abundance and frequently used for medicinal purposes. In many recipes, more than one part was used. The utilization of roots, rhizomes, and the whole plant is the main threat in the regeneration of the medicinal plants (Ahmad *et al.*, 2009) <sup>[46]</sup>. A roasted bulb of *Allium cepa* is wrapped on the spine-containing wound to release the spine. Furthermore, its fruit is used as brain tonic, and its roasted form is useful in the treatment of dysentery. The whole plant decoction of *Ajuga bracteosa* is used for blood purification. Dried leaves and flowers of *Mentha longifolia* are used as a remedy for jaundice, fever, asthma, and high blood pressure (Khan, 2008) <sup>[20]</sup>. The antiulcer effect of *Solanum nigrum* fruit extract on cold restraint stress, indomethacin, pyloric ligation, and ethanol-induced gastric ulcer models and ulcer healing activity on acetic acid-induced ulcer model in rats. The information was collected and recorded for different conservation attributes by following International Union for Conservation and Nature. It was reported that seven species (8.7%) were endangered due to the much collection, anthropogenic activities, adverse climatic conditions, small size population and distribution in limited area, specificity of habitat, and over grazing in the research area. However, the below-mentioned species were found to be endangered. Traditional knowledge can also contribute to conservation and sustainable use of biological diversity.

## 5. Conclusion

The current medicinal survey was carried out on medicinal plants of Tehsil Colony Samar Bagh Khyber Pakhtunkhwa. A total of 50 plant species were collected from March to September along with their local name, botanical name, English name, family, habit, part use, method of use and medicinal use. Herbaceous cover was dominated with (40%) species followed by trees with (22%) species and then by shrubs with (25%) species. We concluded that the studied area is rich floristically with medicinal plants and is important medicinally and economically. But unfortunately due to unawareness some medicinally and economically important plants like *Pinus* species having high market value which are cutting with an alarming rate. Because of over utilization, over collection, over exploitation, habitat degradation, overharvesting, deforestation, population explosion, over grazing and deforestation the area is under high biotic pressure.

## 6. References

1. Abbasi AM, Khan MA, Ahmad M, Zafar M, Jahan S, Sultana S. Ethno pharmacological application of medicinal plants to cure skin diseases and in folk cosmetics among the tribal communities of North-West Frontier Province, Pakistan. *Journal of ethno pharmacology*. 2010;128(2):322-335.
2. Adiaratou T, Drissa D, Seydou D, Hilde B, Berit SP. Ethno pharmacological survey of different uses of seven medicinal plants from Mali, (Western Africa) in the regions Doila, Kolokani and Siby. *Journal of Ethno biology and Ethno medicines*. 2005;1(7).
3. Adnan ullah, Khan K, Khan MI, Khan A, Alam A. Prevalence of *Fasciola hepatica* in domesticated cattle of Distt: Lower Dir, Khyber Pakhtunkhwa, Pakistan. *Int. J Biosci*. 2013;3(12):73-80.
4. Ahmad H, Sirajuddin. Ethno botanical profile of Swat. In *Proc.First Train. Workshop Ethnobotany*. Appl. Conserve; c2012. p. 202-206.
5. Ahmad KS, Kayani WK, Hameed M, Ahmad F, Nawaz T. Floristic diversity and ethno botany of senhsa, district Kotli, Azad Jammu & Kashmir (Pakistan). *Pak J Bot*. 2012;44(SI):195-201.
6. Badshah L, Ibrar M, Hussain F. An ethno botanical study on the usage of wild medicinal herbs from Malana hills, Parachinar, Kurram Valley. *J Biol. Biotech*. 2010b;7(3):267-271.
7. Bahuguna YM, Sharma J, Gairola S. *int. J Environ. Sci*. 2011;1(7):1448-1458.
8. Bibi T, Ahmad M, Tareen RB, Tareen NM, Jabeen R, Rehman SU, *et al.* Ethno botany of medicinal plants in district Mastung of Baluchistan Province-Pakistan. *Journal of ethno pharmacology*. 2014;157:79-89.
9. Davis W. Towards a new synthesis in ethno botany. In Rios, M. and Pedersen, H. B,(eds.), *Las plantas yel hombre – Memorias del primer Simposio ecuatoriano de Ethno botanical Botanical Economical*; c2000. p. 339-357
10. Ghazala B, Shameel M. Description and Structure of *Olea ferruginea* (Royle) forests of Dir lower District of Pakistan. *Pak. J. Bot*. 2005;41(6):2683-2695.
11. Ghazala B, Shameel M. Phytochemistry and bioactivity of some freshwater green algae from Pakistan. *Pharmaceutical biology*. 2006;43(4):358-369.
12. Gupta D, Dubey J, Kumar M. Phytochemical analysis and antimicrobial activity of some medicinal plants against selected common human pathogenic microorganisms. *Asian Pacific Journal of Tropical Disease*. 2016;6(1):15-20.
13. Hamayun M, Khan MA, Iqbal I. Ethno botanical profile of Utror-Gabral Valleys, Swat, Pakistan. *J Ethnobot. Leaflets*; c2004.
14. Haq F, Ahmad H, Alam M. Traditional uses of medicinal plants of Nandiar Khuwarr catchment (District Battagram), Pakistan. *Journal of Medicinal Plants Research*. 2011;5(1):39-48.
15. Harvey AL, Clark RL, Mackay SP, Johnston BF. Current strategies for drug discovery through natural products. *Expert opinion on drug discovery*. 2010;5(6): 559-568.

16. Kaur R, Vashistha BD. Ethno botanical Studies on Karnal District, Haryana, India. *Int. Res. J Biological Sci.* 2014;3(8):46-55.
17. Kayani S, Ahmad M, Zafar M, Sultana S, Khan MPZ, Ashraf MA, *et al.* Ethno botanical uses of medicinal plants for respiratory disorders among the inhabitants of Gallies–Abbottabad, Northern Pakistan. *Journal of ethno pharmacology.* 2014;156:47-60.
18. Khan N, Ahmed M, Ahmed A, Shaukat SS, Wahab M, Ajaib M, *et al.* Important medicinal plants of chitral gol National park (cgnp) Pakistan. *Pak. J Bot.* 2011;43(2): 797-809.
19. Khan N, Ahmed M, Wahab M, Ajaib M, Hussain SS. Studies along an Altitudinal gradient in *Monotheca buxifolia* (Falc.) A. D, Forest, District Lower Dir, Pakistan. *Pak. J Bot.* 2010;42(5):3029-3038.
20. Khan SW, Khatoon surayya. Ethno botanical studies on some useful herbs of Haramosh and Bugrote valleys in Gilgit, northern areas of Pakistan. *Pakistan Journal of Botany.* 2008;40(1):43.
21. Khan N, Bibi S. Phyto-ecological and ethno-botanical study of intercropping weeds in wheat of Adenzai valley district Lower Dir, Pakistan. *Sky Journal of Medicinal Plant Research.* 2013;2(2):5-17.
22. Khasbagan S. Indigenous knowledge for plant species diversity: a case study of wild plants' folk names used by the Mongolians in Ejina desert area, Inner Mongolia, PR China. *Journal of Ethno biology and Ethno medicine.* 2008;4:2.
23. Kimmel K, Kull A, Salm JO, Mander U. The status, conservation and sustainable use of Estonian wetlands. *Wetlands Ecology & Management.* 2009;18(4):375-395.
24. Kumari S, Batish DR, Singh HP, Negi K, Kohli RK. An ethno botanical survey of medicinal plants used by Gujjar Community of Trikuta Hills in Jammu and Kashmir, India. *Journal of Medicinal Plants Research (JMPR).* 2013;7(28):2111-2121.
25. Lucy H, Edgar JD. Medicinal plants are re-emerging health aid. *Electronic Journal of Biotechnology.* 1999, 2 (2).
26. Martin AJS. Medicinal Plants in Central Chile. *Econ. Bot.* 1983;37(2):216-217.
27. Marwat SK, Khan MA, Rehman FU, Ahmad M, Zafar M. Biodiversity and importance of floating weeds of Dera Ismail Khan, District of KPK, Pakistan. *Afr. J. Tradit Complement Altern Med.* 2011;8(S):97-107.
28. Marwat SK, Khan MS, Ghulam S, Anwar N, Mustafa G, Usman K. Phytochemical constituents and pharmacological activities of sweet *Basil-Ocimum basilicum* L. (Lamiaceae). *Asian Journal of Chemistry.* 2011;23(9):3773.
29. Meagher LP, Beecher GR, Flanagan VP, Li BW. Isolation and characterization of the lignans, isolaricresinol and pinoresinol, in flaxseed meal. *Journal of agricultural and food chemistry.* 1999; 47(8):3173-3180.
30. Noman Champion, Harry G, Seth SK. Forest types of Pakistan. *Pakistan Forest Institute, Peshawar;* c2018. p. 233.
31. Ouelbani R, Bensari S, Mouas TN, Khelifi D. Ethnobotanical investigations on plants used in folk medicine in the regions of Constantine and Mila (North-East of Algeria). *Journal of Ethno pharmacology.* 2016;194:196-218.
32. Perveen A, Ijaz S, Ghaffar N. Comparative phytochemical and physicochemical study of seeds of the genus angelica l. from neelum valley azad kashmir, pakistan. *Pak. J Bot.* 2020;52(1):257-260.
33. Qasim M, Gulzar S, Shinwari ZK, Aziz I, Khan MA. Traditional ethno botanical uses of halophytes from Hub, Baluchistan. *Pak. J Bot.* 2010;42 (3):1543-1551.
34. Qureshi RA, Ghufuran MA, Gilani SA, Yousaf Z, Abbas G, Batool A. Indigenous medicinal plants used by local women in southern Himalayan regions of Pakistan. *Pak J Bot.* 2009;41(1):19-25.
35. Rahim G, Qureshi R, Arshad M, Gulfraz M. Phytochemical analysis and antioxidant properties of *Teucrium stocksianum* flower from Malakand Division, Pakistan. *International Journal of Agriculture and Biology.* 2013;15(2).
36. Ramirez-Rodrigues MM, Plaza ML, Azeredo A, Balaban MO, Marshall MR. Physicochemical and phytochemical properties of cold and hot water extraction from *Hibiscus sabdariffa*. *Journal of food science.* 2011;76(3):428-435.
37. Rashid S, Ahmad M, Zafar M, Sultana S, Ayub M, Khan MA, *et al.* Ethno botanical survey of medicinally important shrubs and trees of Himalayan region of Azad Jammu and Kashmir, Pakistan. *Journal of Ethno pharmacology.* 2015;166:340-351.
38. Rashid A, Swati MF, Sher H, Al-Yemeni MN. Phytoecological evaluation with detail floristic appraisal of the vegetation around Malam Jabba, Swat, Pakistan. *Asian Pacific Journal of Tropical Biomedicine.* 2011;(SI):461-467.
39. Rhyu MR, Lu J, Webster DE, Fabricant DS, Farnsworth NR, Wang ZJ. Black cohosh (*Actaea racemosa*, *Cimicifuga racemosa*) behaves as a mixed competitive ligand and partial agonist at the human  $\mu$  opiate receptor. *Journal of agricultural and food chemistry.* 200654(26):9852-9857.
40. Shinwari ZK, Gilani SS. Sustainable harvest of medicinal plants at Bulashbar Nullah, Astore (northern Pakistan). *Journal of Ethno pharmacology.* 2003;84(2-3):289-298.
41. Shinwari ZK, Medicinal plants research in Pakistan. *Journal of medicinal plants research.* 2010;4 (3):161-176.
42. Swati S, Kanungo VK. Ethno botanical Survey of Surguja District with Special Reference to Plants Used By Uraon Tribe in Treatment of Diarrhea. *International Journal of Herbal Medicine.* 2014;1(5):19-22.
43. Tareen RB, Bibi T, Khan MA, Ahmad M, Zafar MD. Indigenous knowledge of folk medicine by the women of Kalat and Khuzdar regions of Balochistan, Pakistan. *Pak. J Bot.* 2010;42(3):1465-1485.
44. Thouri A, Chahdoura H, El Arem A, Hichri AO, Hassin RB, Achour L. Effect of 2017.
45. Khan S, Khan MA, Hanjra MA, Mu J. Pathways to reduce the environmental footprints of water and energy inputs in food production. *Food policy.* 2009 Apr 1;34(2):141-9.
46. Ahmed SA, Diffenbaugh NS, Hertel TW. Climate volatility deepens poverty vulnerability in developing countries. *Environmental research letters.* 2009 Aug 20;4(3):034004.



47. Jan S, Benoit D, Becheva E, Carlier T, Cassol F, Descourt P, Frisson T, Grevillot L, Guigues L, Maigne L, Morel C. GATE V6: a major enhancement of the GATE simulation platform enabling modelling of CT and radiotherapy. *Physics in Medicine & Biology*. 2011 Jan 19;56(4):881.
48. Tuasha N, Petros B, Asfaw Z. Medicinal plants used by traditional healers to treat malignancies and other human ailments in Dalle District, Sidama Zone, Ethiopia. *Journal of ethnobiology and ethnomedicine*. 2018 Dec;14(1):1-21.
49. Hassaine S, Benmalek S. Medicinal plants traditionally used in the Algerian Sahara: an ethnobotanical study. *Vegetos*. 2022 Jul 25:1-27.