



## **Traditional knowledge of medicinal herbs among indigenous communities in Maidan Valley, Lower Dir, Pakistan**

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### **ABSTRACT**

*Traditional awareness about the use of herbal medicine for the treatment of various ailments is not well recognized from Maidan valley despite their widespread uses. The local communities of the region use an extensively non-cultivated and wild edible plants for different purposes as food, medicine, spice and culture purposes. A total of 137 informants were investigated (16 female and 121 male) were interviewed through semi structured questionnaire. The obtained data were quantitatively analyzed through Use Value (UV), Relative Frequency Citation (RFC) and fidelity level (FL). Plants specimens were dried, preserved and mounted on standard herbarium sheets, labeled and deposited to the herbarium. Altogether, 65 medicinal plants belong to 60 genera and 39 families were documented and used in curing of various disease. These plants are used for 106 various ethnobotanical purposes and disease. RFC values ranges from 0.37 to 0.15, highest Relative Rrequency Citation was reported for *Foeniculum vulgare*(0.37) followed by *Amaranthus viridis* (0.36). Used value ranges from 0.28 to 0.05, *Carum carvi* was the highest (0.37) and (0.27) for *Foeniculum vulgare*. Fidelity level (FL) ranges from 51.28% to 92.86% *Papaver somniferum* having highest FL(92.85%) followed by *Ricinus communis* (84%) *Duchesnea indica* (84%). The local communities of Maidan significantly depends on medicinal plants and used in curing of different disease. From our Present study we recommend that further studies about pharmacological, plant active phytochemicals and biological activities are required for the efficiency and safety of medicinal plants.*

**Key words:** Ethno pharmacology, Medicinal herb, phytochemicals, similarity, Maidan Valley

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### **INTRODUCTION**

In recent era the ethnobotanical knowledge have expanded inspiration worldwide to make the herbal medicine for the treatment of different ailments as well the discovery of natural drug discovery [1]. Ethnobotany has important role in understanding the relationship between the uses of plants for humans being [2]. Ethnobotanical approaches are very important because many plants species are used locally as crud drugs, furniture and fuel wood etc. [3]. Some plants species are used in modern medicine [4-8]. Different plants species are used for different purposes in local communities, and used different herbs with different ways [9]. These local communities used these plants from long time as a complex cultural tools developed with their natural and social environment by the indigenous people [10]. Plants are used for medicinal purposes from ancient time, and throughout human history [11]. The knowledge of medicinal plants transferred from generation to generation in the rural communities [12]. Early civilization of Chinese, India and North Africa have written evidence about the uses of plant for different ailments [13-17]. According to world health organization traditional therapies are based on herbal medicines, play vital role in health care system and a source of many powerful drugs in many countries. About 80% of the world developing countries depend upon on traditional medicines due to their low cost

and easily availability[18-20]. Many medicinal plants are locally used as spices and food and also as an important medicine[21, 22]. Indigenous uses of medicinal plants are used in different ailments, provide clues for new research and are source of pharmaceutical products [23]. Allopathic medicines are costly and due to inaccessibility in rural area only traditional medicines are used as primary source in health care [24].

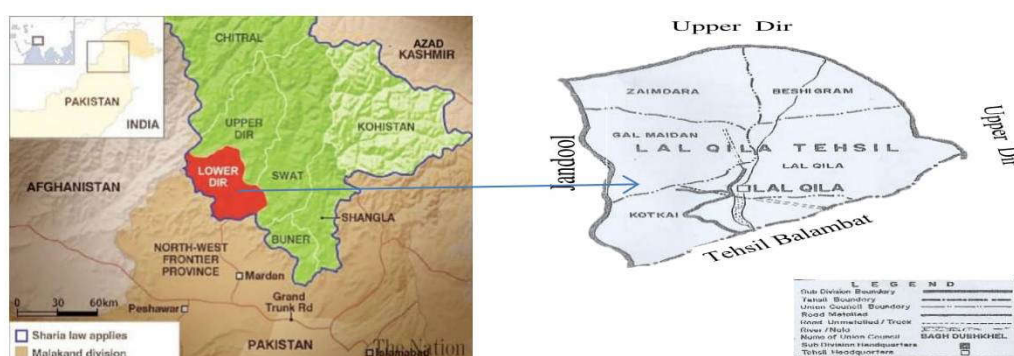
About 80% of the population of Pakistan depends on medicinal plants for their basic healthcare[25]. In the past, mostly plants derivative were used as medicines, because they have less side effect as compared to modern synthetic drugs [26]. Plants used as medicines have also economic benefits in the development of local communities for the treatment of different disease [27]. According to Teklehaymanot & Giday[28] the documentation of traditional uses of medicinal plant is important to preserve the knowledge, they are lost due to industrialization rapid loss of natural habitats. In Pakistan different research work has been made by different researcher in the field of ethnobotany in different part of the country [1, 29-58].

The local communities of the area are used medicinal plants to cure different ailments, and the traditional knowledge is transfer from generation to generation through oral communication[59]. This research was conducted to preserve the folk knowledge about the uses of plants and to create awareness in local communities about the uses and to conserve the native medicinal flora. The present research aims to essay and recognize the importance and relationship among the local communities and herbal medicines of Maidan valley. This is the first reference documentation from the valley to enlist the medicinal plant of the area with statistical analysis and their reported phytochemicals.

## MATERIALS AND METHODS

### Study Area

Maidan Valley is located in district Dir(lower), North West Pakistan covering in area of 300 km<sup>2</sup> situated between 34° 37' to 35° 07' N latitudes and 71° 31' to 72° 14' E longitudes[60]. The valley is dominated by famous mountains of Hindu Kush range the highest peak of Maidan is Monrh and Sheklai[61]. Mountain range increase from south toward the northern, the variation in altitude is from 1800m to 2000m[60]. The summer season is moderate and hot June and July is the hottest months. The maximum and minimum temperature during June was recorded 32.52 C° and 15.67 C° respectively. The winter season is cold, and temperature rapidly decreases from November onward, December, January and February are the coldest months. In January maximum and minimum temperature was recorded 11.22C° and -2.93C° respectively. The natural vegetation of the valley is some confers and Oak forest. Mostly economy of the area depends on agriculture which is the main source of income, some people working in middle East countries. Most of the valley is hilly; the agriculture crops are grown in slopes. Wheat, Maize and Rice are the main crops of the valley[62, 63,82].



**Figure.1.** Map of Maidan Valley, subdivision and boundaries.

### Ethnobotanical survey

Ethnobotanical survey was carried out throughout Maidan. Information about species was collected through semi-structure and open-ended interviewed. Interviewed were taken at face to face conversation in bazar, home, Mosque, shops, hujra and fields, in local language (Pashto). The study area was plan in such a way that to collect maximum information about the uses of plants. Local people were very cooperative and assisted in pointing the persons who were very knowledgeable. Interviews were taken from both male and female during field survey. A total of 137 informants were interviewed ranging from

20-85 years of age. Out of 137 informants, 11 were hakims, 16 female and 110 males were interviewed. Interview from female were difficult but we succeeded to interview 16 female of different age. The interview questionnaire was designed in such a way to collect maximum information regarding different plant, including (a) Name of informants, village name, gender, age, job and education (b) Information regarding the uses of plants, local name, medicinal and ethnobotanical uses, part used, medicinal recipes.

### Sample and Identification

Plants specimens were collected from different locality of the valley and identified with the help of online "Flora of Pakistan" ([www.efloras.org/](http://www.efloras.org/)). List of plants were arranged according to alphabetical order of the families. Latin name and families were conformed from online "The Plant List" (<http://www.theplantlist.org/>) and "The International Plant Name Index" (<http://www.ipni.org/>). The identified species were mounted on herbarium sheets, and voucher specimens were deposited to the department of Botany University of Peshawar.

### Data analysis

Indigenous knowledge is quantitatively assessed using different measurement like RFC, UV, FC and FL.

### Relative Frequency Citation (RFC)

The RFC were calculated to determine the consensus between the informants on the uses of native medicinal herbs of in area. RFC is calculated using the following formula [64].

$$RFC = FC/N \quad (0 < RFC < 1)$$

Where RFC is the relative frequency citation; FC (frequency of citation) is the number of informants who mentioned the species while N is the total number of informants participated in the study.

### Use value (UV)

Use value is very important to measure all possible uses of a species locally without considering its relative frequency citation. Use value (UV) was carried out by using the standard formula of [65].

$$UV = u/n$$

Where u is the use value or uses of a plant to treat diseases and n is number of informant's reporting different uses of species.

### Fidelity level (%)

The fidelity level is the percentage of informants claiming the uses of a specific plant for the same major use, which can be calculated through fidelity level formulated as [66]:

$$FL(\%) = Ip/Iux100$$

Where "Ip" denotes the number of use reports cited for a given species for a specific disease category and "Iu" is the number of use reports cited for a given species. High FL values near 100% is obtained for plants for which all use reports refer to the same disease category, while low FL value is obtained for species that are used for different ailments [67].

### Jaccard Index (JI)

Another important index was Jaccard Index (JI) which is used for evolution of present data with previous published data from local, regional and global level for investigating the proportion of cited species and their medicinal uses. Jaccard index was calculated using the following formula:

$$JI = cx100/a + b - c$$

Where "a" is the number of species of the area A, "b" is the number of species of the area B, and "c" is the number of species common in both area "A" and "B" [68].

## RESULT AND DISCUSSION

### Ethnobotanical profile

Total 65 plant species belong to 60 genera and 39 families with 106 different ethnobotanical purposes were recorded from Maidan Valley. The dominant families in number of species were Apiaceae with (6 genera and 6 species) followed by Rosaceae with (5 genera and 5 species), Amaranthaceae with (4 genera and 5 species), Asteraceae with (4 genera and 4 species), and Lamiaceae with (2 genera and 3 species) each, Amaryllidaceae with (1 genera and 3 species), Euphorbiaceae, Leguminaceae, Meliaceae, Moraceae, Pinaceae and Poaceae each having (2 genera and 2 species), Chenopodiaceae with (one genus and 2 species), the remaining 27 families with one genera and one species each. Detail information regarding family name, botanical name, English name, local name, habit, part used, active photochemical reported in previous studies, ethnobotanical uses, recipes, used report, use value, number of informants (FC), relative frequency citation (RFC) for each plant species are given in (Table. 2). Herbs were dominant with 39 species (60%), followed by trees with 17 species (26%) and shrubs with 9 species (13%). The dominant use of herbaceous might be the easy availability and collection of these plants species. The local herb healer (Hakim's) collected plants in every season is a stalk for the whole year and made different recipes from these species for different ailments. Our results are similar to that of [26, 69-71] that herbaceous species are dominant used as medicinal plant (Fig. 5 and 6).

### Data documentation from research area

Ethnobotanical field survey was carried out in different locality of Maidan valley district Dir (Lower) during 2015-2016. The plants were collected mostly from their natural habitats; some were collected from high altitude mountainous region like Monrh Ghar and Shekha which is the part of Hindu Kush range. Medicinal plants suggested by informants were collected, dried, pressed and mounted on herbarium sheets using herbarium techniques provided by [72]. Plants were identified with the help of flora of Pakistan [73] and plants were also confirmed from (MPNS) <http://www.mpns,kew.org/mpns-portal/> also from the plant list "<http://www.theplantlist.org/>" and the voucher specimens were deposited in the herbarium.

### Demographic information

During field study, about 137 informants were interviewed belong to different age and educational level, herbal healer (Hakims), expert in this field. Ethnomedicinal information was collected in open and semi-structure interviewed from local communities. The local people were very cooperative and pointing the most knowledgeable person in this field. Information regarding the uses of plants was collected from various informants. In present study most of the informants were male 121 followed by 16 females. The high number of men is due to easily access the interviewed, from female was quite difficult but we succeed to interview 16 females. Demographic information on experience based 91.97% were local people and 8.02% were Hakims (Herbal healer). On bases of age group dominated by 41-60-year-old 40.14% followed by 61-80 year 37.95%, 20-40 years 18.24% and 81-85 years 3.64%. Majority of the informants were illiterate with 48.90% followed by primary level 14.59%, graduate 13.13% meddle 12.40%, and secondary 10.94% (Table.1, Fig 2).

### Plant part used

Different plants parts were used for different purposes, in this research work, the dominant plant part reported was leaves (38%) followed by fruits (14%), whole plant (11%), roots (10%) shoots (9%), stem (6%), seeds (3%), bark (3%), bulb 3% and capsule (1%) and rhizome (1%). Leaves are used mostly because they are easy to collect without damaging the plant [69]; [26]also reported that leaves are the most abundant part used (Figure 3).

### Mode of administration

In Maidan valley various people used plant in various way for medicinal purposes various. Different modes of utilization are used for the treatment of various ailments. The result revealed that 65 plants species used in the local communities by different mode of administration routs. In this study decoction were reported dominant mode of administration with 29% usage, followed by extract with 20%, powder 19%, infusion 13%, Paste 11%, Boiled 4% and juice 4%. [74] also mentioned that decoction is dominant used of administration. In preparing a decoction the plant part is boiled in water for 25 to 30 min (Figure 4).

### Quantitative analysis

#### Relative frequency citation (RFC)

To find out the popularity of a species in local communities the relative frequency citation (RFC) is important to carry out, in present study RFC range from 0.37 to 0.15. Highest relative frequency citation was reported for *Foeniculum vulgare* Mill. (RFC=0.37 and FC=51) juice and decoction of leaves and fruits are used in digestion, diuretic, stimulant, followed by *Amaranthus viridis* L. (RFC=0.36 and FC=49) boiled leaves are used as laxative, emollient, refrigerant, cough, fever, *Cichorium intybus* L. (RFC=0.36 and FC=49) decoction of the leaves and shoots are used in fever, jaundice, cough, combat cold, demulcent, *Mentha arvensis* (RFC=0.35 and FC=48) paste and decoction of leaves and shoots are used for treatment of stomachache, digestion, vomiting, stimulant. *Berberis lycium* Royle. (RFC=0.34 and FC=0.36) powder of the leaves, shoots and fruits are used as expectorant, stomachache, internal wounds, piles, diabetes, liver disease, throat infection. *Morus alba* L. (RFC=0.34 and FC=47), infusion, paste and decoction of leaves, fruits and stem are used as carminative, laxative, demulcent and tonic. *Rubus ellipticus* (RFC=0.34 and FC=47) the paste of the plant is used for the treatment of cardiac tonic, diarrhea, bleeding, dysentery, and cough. *Nasturtium officinale* R. Br. (RFC=0.34 and FC=47) powder and boiling of the leaves and shoots are used to improve digestion, stomachache. Other species with highest relative frequency citation ranging from 0.33 to 0.30 are *Indigofera heterantha* Wall, ex Brand., *Pyrus pashia* Ham. Ex D. Don., *Mentha longifolia* L., *Solanum nigrum* L., *Achyranthes aspera* L., *Cannabis sativa* L., *Juglans regia* L., *Ficus palmate* Forssk., *Olea ferruginea* Royle., *Oxalis corniculata* L., *Platanus orientalis* L., *Ailanthus altissima* Mill., and *Viola odorata* L..

#### Use Value (UV) and Used Reports (UR)

In this study it is determined from medicinal use value ranges from 0.28 to 0.05. According to our finding *Carum carvi* L. is the highest UV of 0.37 the powder of the plant is used for Typhoid; further it is also used in cough, flu, fever, constipation, combat cold. The UV of *Foeniculum vulgare* Mill. is 0.2 and UR 14 and

its juice and decoction are used in treatment of digestive, diuretic, carminative, stimulant, aphrodisiac, throat infection, cough, fever. UV of *Cedrela serrata* Royle. (0.26) and UR (10), the powder of the species is effective in diarrhea, astringent, dysentery, *Mentha longifolia* L. UV 0.26 and UR 11, the powder of the plant are used to treat vomiting, stomachache, anti-rheumatic, diarrhea, dysentery, digestive problem, *Cuminum cyminum* L. UV (0.25) and UR (10), its powder are used in cough, digestive, demulcent, antispasmodic and fever, *Coriandrum sativum* L. UV (0.25) and UR (10) decoction and infusion are effectively used in treatment of constipation, carminative, demulcent, cough, fever, toothache. Other important plants species in term of UV from (0.24) to (0.17) as *Indigofera heterantha* Wall, ex Brand., *Sonchus asper* (Linn) Hill., *Cydonia oblonga* Mill., *Allium jacquemontii* Kunth., *Morus alba* L., *Allium sativum* L., *Amaranthus caudatus* L., *Chenopodium ambrosioides* L., *Viola odorata* L., and *Elesine indica* (Linn.) Gaertn.

#### Fidelity level (%)

Fidelity level is used to determine the species that are mentioned by most of the informants for a particular disease treatment. Fidelity level (FL) ranges from 51.28% to 92.86% of plants species in the study area. *Papaver somniferum* L. show high FL followed by *Ricinus communis* L., *Duchesnea indica* (Andrews) Th. Wolf, *Rumex dentatus* L. and *Coriandrum sativum* L. which are used for Curing cough (92.85%), Wounds (84%), Diabetics (84%), Combat cold (83.78%) and constipation (82.5%) respectively. The high-fidelity level shows that the plant species are used widely in the area while low FL represents other uses that might be mentioned by low number of informants. These plants species are used in previous literature around the globe and locally for the treatment of various ailments and their experimental proofs are available [26, 70, 75] (Table 3).

#### Phytochemicals reported from previous literature

Reported medicinal plants were studied for essential phytochemical from previous studies, which show the presence of Saponins, Alkaloids, Flavonoids, Tannins etc. and their derivatives [27, 76-79]. The active plants compounds are used in discoveries of various drugs used for the treatment of various diseases. There is need to investigate the reported medicinal plants for biological activities and phytochemical to confirm the use of medicinal plants for treatment of various diseases.

#### Novelty through Jaccard index (JI)

The present study is compared with 19 published research papers, which includes 6 publications from adjoining areas and countries, while 13 publications from all over the world for similar and dissimilar uses were compared. Similarity index were analyzed through Jaccard index varies from 0.537% to 51.785%, the maximum similarity index was found with the study [70] is 51.785% and 20% with the study [80]. Lowest degree of similarity were found 0.537% and 0.602% in the study [74, 81]. Present study revealed that 15% uses of these plants is reported for the first time, while 20% of plant species reported with novel uses and remaining 65% plants are already documented. (Table 4) The most authenticated plants were those which were highly cited in the previous study are *Allium sativum*, *Cichorium intybus*, *Juglans regia* and *Ocimum basilicum*. By using Jaccard Index and comparing these 65 plants species with 19 papers we conclude that 10 species are novel in present study i.e. *Cedrela serrata* Royle., *Adiantum incisum* Forssk., *Amaranthus caudatus* L., *Allium jacquemontii* Kunth., *Rhus punjabensis* J. L. Stewart ex Brandis Bhan., *Arisaema jacquemontii* Blume., *Conyza Canadensis* (L.) Cronquist, *Digitaria ciliaris* (Retz.) Koel., *Eleusine indica* (Linn.) Gaertn and *Ailanthus altissima* Mill. (Table 5). Literature has been searched no published work has been found in the area with statistical analysis like UV, FL, RFC, JI and Phytochemicals reported from previous literature. The novelty of this research work will lead to new drugs discovery (Table. 4 and 5).

**Table 1. Demographic description of Informants**

Variable	Demographic categories	Percentage
<b>Gander</b>	Male	88.32
	Female	11.67
<b>Experience</b>	Hakims	8.02
	Local people	91.97
<b>Age group</b>	20-40 years	18.24
	41-60 years	40.14
	61-80 years	37.95
	81-85 years	3.64
<b>Education level</b>		

Illiterate	48.90
Primary level	14.59
Middle	12.40
Secondary	10.94
Graduate	13.13

**Table No.2 Ethnobotanical plants species with family, ethnobotanical, vernacular names, habit, part used, active Phytochemicals from previous research papers, ethnobotanical uses, mode of utilization, UR, UV, FC, RFC, FL and comparison with previous studies.**

S. No	Family /Botanical Name	Voucher No.	Local Name	Habit	Part used	Active Phytochemicals reported in previous studies	Ethnobotanical uses	Mode of Utilization	UR	UV	FC	RFC	FL	Comparison with previous studies
1	Adiantaceae <i>Adiantumincisum</i> Forssk.	Fazal-115	Sumbal	Herb	L (Fro nds)	8 $\alpha$ -hydroxyfernan-25, 7 $\beta$ -olide, 3 $\alpha$ -hydroxy-4 $\alpha$ -methoxyfilicane and 19 $\alpha$ -hydroxyferna-7, 9(11)-diene, Neohop-13(18)-ene, (Tsuzuki et al., 2001); (Pan et al., 2011).	Skin disease, cough, fever, diabetes, diuretic and emetic.	Juice	6	0.2 2	2 7	0.2 0	77.7 8	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
2	Amaryllidaceae <i>Allium cepa</i> L.	Fazal-111	Piaz	Herb	B and L	Aglycone, 4/ -O- $\beta$ -glucopyranoside, 3-O- $\beta$ -glucopyranoside, 7-O- $\beta$ -glucopyranoside, Ferulic acid, gallic acid, Protocatechuic acid, Quercetin and Kaempferol (Fossen et al., 1998); (Prakash et al., 2007)	Potherb, spices, condiment, salad, Stimulant, hyperacidity, hypertension, astringent, warmicide and tonic.	Boiled, Decoction	10	0.2 6	3 9	0.2 8	82.0 5	1☼, 2☼, 3☼, 4☼, 5▲, 6☼, 7☼, 8▲, 9☼, 10●, 11●, 12▲, 13☼, 14●, 15☼, 16☼, 17☼, 18☼, 19▲
	<i>Allium sativum</i> L.	Fazal-118	Oga	Herb	B and L	Saponins, tannins, cardiac glycosides, alkaloids, cadenolide, flavonoids, anthraquinone and cyanogenic glycosides (Mikail, 2010).	Potherb, Spice, condiment, hypertension, cough, fever and stimulant.	Extract	7	0.1 9	3 6	0.2 6	77.7 8	1●, 2☼, 3☼, 4☼, 5▲, 6☼, 7☼, 8▲, 9☼, 10●, 11●, 12●, 13☼, 14▲, 15☼, 16☼, 17☼, 18☼, 19▲
	<i>Allium rubellum</i> M. Bieb.	Fazal-110	Zanglyoga	Herb	L and B	Phenolic and flavonoids (Motamed and Naghibi, 2010)	Potherb, cough, fever, spice, salad and demulcent	Extract	6	0.2 1	2 8	0.2 0	67.8 6	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
3	Amaranthaceae <i>Achyranthesaspera</i> L.	Fazal-134	Gishkay	Herb	L and R	Saponine, Alkaline Ash containing Potash, Achyranthine Alkaloids, Flavonoids, Tannins, Steroids, Terpenoids Saponine (D-Glucuronic Acid and B-D-Galactopyranosy Ester of D-Glucuronic Acid), Oleanolic Acid, Amino Acids, Hentriacontane, 10-Tricosanone, 10-Octacosanone and 4-triacontanone (Basu et al., 1957); (Rastogi et al.,	Diuretic, laxative and removing stones from kidneys.	Decoction, infusion	3	0.0 7	4 2	0.3 1	71.4 3	1▲, 2●, 3☼, 4▲, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12▲, 13▲, 14☼, 15☼, 16☼, 17▲, 18☼, 19☼

						2001);(Hariharan and Rangaswami, 1970);(Gokhale et al., 2002); (Rastogi et al., 2001);(Rastogi et al., 2001) and (Sutar et al., 2011)									
	<i>Amaranthuscaudatus</i> L.	Fazal-136	Chalwaye	Herb	L, Sh and R	Gallic acid, Caffeic acid, Rutin, Quercetion, and Ferulic acid (Paranthaman, 2012)	Potherb, fodder, laxative, demulcent, wound, cough and fever.	Decoction and infusion	7	0.17	40	0.29	69.39	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
	<i>Amaranthusviridis</i> L.	Fazal-119	Chalwaye	Herb	L	Myricetin, Morin, Quercetin, $\alpha$ -Carotene and $\beta$ -Carotene, Flavonoids, saponins, glycosides, terpenoids, phenolic (Lako et al., 2007);(Kumar et al., 2012)	Potherb, laxative, carminative, emollient, refrigerant, diuretic, cough and fever.	Boiled	8	0.16	49	0.36	76.1	1●, 2●, 3●, 4●, 5●, 6●, 7●, 8●, 9●, 10●, 11●, 12●, 13●, 14●, 15●, 16●, 17●, 18●, 19●	
	<i>Chenopodium album</i> L.	Fazal-135	Sarmay	Herb	R and L	N-trans-4-O-methylferuloyl 4'-O-methyldopamine, cinnamic acid amides, phenolic amide (Cutillo et al., 2003); (Horio et al., 1993)	Potherb, carminative, laxative anthelmintic, jaundice, urinary problems, blood purification and Piles disease.	Decoction	8	0.22	37	0.27	67.57	1☼, 2☼, 3▲, 4☼, 5▲, 6☼, 7☼, 8☼, 9☼, 10●, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18●, 19☼	
	<i>Dysphaniaambrosioides</i> (L.) Mosyakin&Cleman ts	Fazal-137	Skha Booty	Herb		Ascaridole, isoascaridole, P-cymene, $\alpha$ -terpinene and limonene (Cavalli et al., 2004)	Fever, cough, temperature, malaria and carminative	Decoction	5	0.17	29	0.21	72.41	1●, 2▲, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10●, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
4	Anacardiaceae <i>Pistaciachinensis</i> (J. L. S) Rech. f.	Fazal-112	Bhan	Tree	BR, ST and L	Alkaloids, terpenoids, flavonoids and tannins (Uddin et al., 2011a)	Rope making, asthma, baskets, fuel wood, furniture and timber wood.	Powder	6	0.28	21	0.15	80.95	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
5	Apiaceae <i>Ammivisnaga</i> (L.) Lam.	Fazal-138	Spairkai	Herb	FR	3-methoxylated, isorhamnetin, rhamnazin, monoglycosides, 3-O-glucoside of rhamnetin, isohamnetin, 7-O-glucoside of isorhamnetin, 3-O-rutinosyl of quercetin, quercetin 7,3,3'-O-triglycoside, flavonols, (Bencheraiet et al., 2011)	Cough, asthma, carminative, laxative, expectorant, demulcent, diuretic, constipation, stomachic, throat, tonic infection, analgesic and diarrhea.	Boiled	13	0.35	37	0.27	75.67	1●, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8▲, 9☼, 10●, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
	<i>Cuminumcyminum</i> L.	Fazal-141	Zeera	Herb	FR, BR	Phenolics, steroids, Flavonoids glycosides, Bornyl acetate, $\alpha$ -terpinene, $\gamma$ -terpinene, gallic acid, quercetin, <i>P</i> -Coumaric, rosmarinic, Trans-	Carminative, laxative, flavoring agent, spices, condiment, digestive, demulcent, antispasmodic, cough and	Powder	10	0.25	40	0.29	77.50	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8●, 9☼, 10●, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	

						2-dihydrocinnamic acids, resorcinol, vanillic acid (Jagtap and Patil, 2010); (Bettaieb et al., 2010)	fever.									19☼
	<i>Carumcarvi</i> L.	Fazal-139	Sperkai	Herb	S	α-Pinene, β-Pinene, Myrcene, p-Cymene, Limonene, Y-Terpinene, p-Cymen-8-ol, Cuminaldehyde, α-Terpinen-7-al, Bornyl acetate, Y-Terpinene7-al, Cuminy acetate, Myristicin, Elemicine, Germacrene B, Dillapiol(Razzaghi-Abyaneh et al., 2009)	Flavoring agent, cough, flu, fever, constipation, demulcent, carminative and laxative, spice, typhoid, combat cold and condiment.	Powder	12	0.37	32	0.23	68.75			1☼, 2☼, 3☼, 4☼, 5●, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
	<i>Coriandrum sativum</i> L.	Fazal-113	Dhania	Herb	SD, L	A-Thujene, α-Pinene, Sabinene, β-Pinene, Terpinolene, Linalool and Menthol (Msaada et al., 2007)	Carminative, demulcent, cough, fever, stimulant, constipation, toothache, spice, salad and potherb	Decoction and Infusion	10	0.25	40	0.29	82.50			1●, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8●, 9☼, 10●, 11☼, 12▲, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19▲
	<i>Foeniculum vulgare</i> Mill.	Fazal-140	Kagah	Herb	FR and L	Alkaloids, Flavonoids, Tannins, Saponine, α-Pinene, sabinene, α-phellandrene, Limonene, Fenchone, estragole, trans-anethole, rotundifolone, 3-caffeoylquinic acid, 4-caffeoylquinic acid, 1,5-O-dicaffeoylquinic acid, rosmarinic acid, eriodictyol-7-O-rutinoside, quercetin-3-O-galactoside, kaempferol-3-O-rutinoside and kaempferol-3-O-glucoside, 4-hydroxy-4-methyl-2-pentanone, palmitic acid, lenoleic acid, oleic acid (Kaur and Arora, 2009); (Muckensturm et al., 1997); (Parejo et al., 2004; Singh et al., 2006)	Digestive, diuretic, aromatic, seeds are carminative, laxative, stimulant, aphrodisiac, condiment, throat infection, demulcent, combat cold, cough, fever and flavoring agent.	Juice and decoction	14	0.27	51	0.37	72.55			1●, 2☼, 3☼, 4▲, 5☼, 6☼, 7☼, 8▲, 9☼, 10☼, 11☼, 12▲, 13☼, 14●, 15☼, 16☼, 17☼, 18☼, 19●
	<i>Pimpinella stewartii</i> (Dunn) E. Nasir	Fazal-142	Zeara	Herb	L, Fr and Fl	Flavonoids, flavonols and ascorbic acid (Abbasi and Guo, 2015)	Carminative, fever, stomach problem, aromatic and stimulant	Paste and decoction	5	0.14	36	0.26	66.67			1☼, 2●, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
6	Apocynaceae <i>Nerium oleander</i> L.	Fazal-144	Ganderay	Shrub	L and R	Pentacyclitriterpenoids: karenein (3β-hydroxy-28-Z-p-coumaroyloxy-12-en-27-oic acid); trans-karenein (3β-hydroxy-28-E-coumaroyloxy-12-en-27-oic-acid), 3β,27-dihydroxy-urs-18-en-13,28-olide and 3β,22α,28-	Skin disease, snake bites, swelling, leprosy, anti-titch, laxative, carminative and ornamental.	Decoction and extract	8	0.23	35	0.25	74.28			1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8▲, 9▲, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼



						trihydroxy-25-nor-lup-1(10),20(29)-dien-2-one (Siddiqui et al., 1995); (Begum et al., 1997)								
7	Araceae <i>Arisaemajacquemo</i> <i>ntii</i> Blume.	Fazal-143	Marjarai	Herb	RH and L	30-norlantost-5-ene-3 $\beta$ -ol and 30-norlantost-5-ene-3-one, Phenolics, Flavones, flavonols, tannins and carotenoids (Jeelani et al., 2010); (Baba and Malik, 2015)	Poisonous, emetic, flatulence, diarrhea, Scorpion and Snake bites.	Paste	6	0.16	37	0.27	67.57	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
8	Asclepiadaceae <i>Calotropisprocera</i> (Ait.) Ait. F.	Fazal-114	Spulmay	Shrub	L	Steroidal hydroxyl ketone, Pentacyclic, ursanetrirpenes, cardinolides, phytosterols, (Basu et al., 2005); (Khan and Malik, 1989);	Asthma, cough, Latex of the plant is used in skin disease, tonic, alterative, antispasmodic, expectorant, anti-itchy, scabies, tooth brush (Maswak) toothache and poisons.	Infusion, extract	11	0.25	43	0.31	81.39	1●, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10●, 11☼, 12☼, 13☼, 14☼, 15▲, 16☼, 17▲, 18▲, 19☼
9	Asteraceae <i>Cichoriumintybus</i> L.	Fazal-145	Kashni	Herb	L, SH	Alkaloids, Flavonoids, triperpenoids, Tannine, Phenolics, saponine, 8-Deoxylactucin, lactucin and lactupicrin(Nandagopal and Kumari, 2007); (Pyrek, 1985)	Fever, fodder, jaundice, asthma, digestive, cough, combat cold and demulcent.	Decoction	8	0.16	49	0.36	55.10	1●, 2☼, 3☼, 4☼, 5▲, 6▲, 7☼, 8▲, 9☼, 10▲, 11▲, 12☼, 13☼, 14▲, 15☼, 16☼, 17☼, 18☼, 19▲
	<i>Erigeron canadensis</i> L.	Fazal-147	Kharboty	Herb	L, R	Sulfoquinovosyl diacylglycerol, R-(+)-limonene, trans- $\alpha$ -bergamotene, (Lehoczki et al., 1985); (Lis et al., 2003)	Stimulate sneezing, diarrhea, dysentery and fodder.	Decoction	4	0.11	36	0.26	72.22	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
	<i>Calendula arvensis</i> M. Bieb.	Fazal-146	Zaigulai	Herb	L and FR	Oleannolic acid-28-O- $\beta$ -D-glucopyranoside-3- $\beta$ -O-(O- $\beta$ -D-galactopyranosyl(1 $\rightarrow$ 3)- $\beta$ -D-glucopyranoside and oleanolic acid 3- $\beta$ -O-(O- $\beta$ -D-galactopyranosyl(1 $\rightarrow$ 3)- $\beta$ -D-glucopyranoside, $\alpha$ -Thujene, $\alpha$ -pinene, myrcene, $\beta$ -phellandrene, Terpinolene, cis-sabinene hydrate, 4-methyl acetophenone, cis-piperitol, $\alpha$ -cubebene, $\beta$ -bourbonene and cis-sesquisabinene hydrate (Chemli et al., 1987); (Paolini et al., 2010)	Diaphoretic, antispasmodic, stimulant and fodder.	Powder	4	0.12	34	0.25	67.65	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11▲, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
	<i>Sonchusasper</i> (linn) Hill.		Shodapae	Herb	L and R	Flavonoids, proanthocyanidins, ascorbic acid and quercetin(Jimoh et al., 2011)	Cough, Asthma, combat cold, fever, laxative, tonic, carminative and demulcent	Extract	8	0.23	34	0.25	82.35	1☼, 2▲, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼

10	Berberidaceae <i>Berberis lycium</i> Roy le.	Fazal-149	Kwararay	Shrub	L, SH and FR	Alkaloids, cardioactive glycoside, saponine, tannins, anthocyanins, $\beta$ carotein, phytic acid, 4,4-dimethylhexadecan-3-ol, Butyl-3-hydroxypropyl-phthalate; 3-(4'-(6-methyl-butyl)-phenyl)propan-1-ol; 4-methyl, 7-hydroxy coumarin (Shabbir et al., 2012); (Sabir et al., 2013)	Expectorant, stomachache, diuretic, diarrhoea, internal wounds, Piles, diabetes, jaundice, liver disease. Fruits are edible, throat infection and mouth disease.	Powder	12	0.24	49	0.36	75.51	1●, 2▲, 3●, 4☼, 5☼, 6☼, 7●, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
11	Brassicaceae <i>Nasturtium officinale</i> R.Br.	Fazal-148	Termeera	Herb	L and SH	Glucosinolatennasturtiin, ascorbic acid (Palaniswamy et al., 2003)	Vegetable, salad, fodder, potherb, Appetizer, digestive, laxative, carminative and stomachache.	Powder and boiled	9	0.19	47	0.34	70.21	1●, 2☼, 3☼, 4☼, 5●, 6☼, 7☼, 8●, 9●, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
12	Cactaceae <i>Opuntia dillenii</i> Haw.	Fazal-116	Zuqam	Shrub	FR	C <sub>29</sub> -5 $\beta$ -sterols, Opuntisterol[(24R)-24-ethyl-5 $\beta$ -cholest-9ene-6 $\beta$ , 12 $\alpha$ -diol]; opuntisteroside[(24R)-24-ethyl-6 $\beta$ -D-glucopyranosyl]oxy]-5 $\beta$ -cholest-9ene-12 $\alpha$ -ol]; $\beta$ -sitosterol; taraxerol; friedelin; methyl linoleate, 7-oxositosterol; 6 $\beta$ -hydroxystigmast-4-ene-3-one; daucosterol; methyl eucomate and eucomic acid, coumarine alpha-amyrin, beta-amyrin, alpha-amyrin acetate, beta-amyrin acetate, oleanolic acetate, oleanolic acid, stigmastero (Jiang et al., 2006); (Anis et al., 1999)	Fruits edible, demulcent, expectorant, asthma and cough.	Infusion	5	0.16	31	0.23	64.52	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7▲, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17▲, 18☼, 19☼
13	Cannabaceae <i>Cannabis sativa</i> L.	Fazal-150	Bhang	Herb	WP	Cannabigerolic acid A [(E)-CBG-C <sub>5</sub> A], Cannabigerolic acid A monomethyl ether [(E)-CBGAM-C <sub>5</sub> A], Cannabigerolmonomethyl ether [(E)-CBGM-C <sub>5</sub> ] Cannabichromenic acid (CBCA-C <sub>5</sub> A), $\alpha$ -Pinene, $\beta$ -Pinene, Myrcene, $\beta$ -phellandrene, trans-caryophyllene, $\alpha$ -humulene, $\beta$ -selinene and caryophyllene (ElSohly and Slade, 2005); (Mediavilla and Steinemann, 1997)	Brooms, "Tandai" is made from the juice and milk, Narcotic, sedative, tonic, antispasmodic, refrigerant, fuel and wounds.	Extract and decoction	9	0.20	45	0.33	71.11	1●, 2▲, 3●, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼

14	Cupressaceae <i>Juniperus communis</i> L.	Fazal-152	Sbardana	Tree	L, R	Alkaloids, Phenolics and flavonoids, tannins, terpenoids (Chandra and Prasad, 2010)	Diuretic, stimulant, carminative, skin disease, urinary problem, chronic, fever, cough, anti-cancer, swellings, and tumors.	Decoction	11	0.31	35	0.25	51.43	1☼, 2☼, 3▲, 4☼, 5●, 6☼, 7▲, 8☼, 9☼, 10☼, 11▲, 12☼, 13☼, 14●, 15☼, 16☼, 17☼, 18☼, 19☼
15	Convolvulaceae <i>Cuscuta reflexa</i> Roxb.	Fazal-151	Mancha	Herb	SH	Chlorogenic acid, 3,5-dicaffeoylquinic acid, quercetin-3-O-galactoside (Löffler et al., 1995)	Anti-itching and curing scabies.	Decoction	2	0.05	39	0.28	71.79	1▲, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
16	Ebenaceae <i>Diospyros lotus</i> L.	Fazal-154	Toramlook	Tree	L, FR, ST	Alkaloids, terpenoids, flavonoids, Tannins, Saponins, glycoside (Uddin et al., 2011b)	Fruits edible, carminative, laxative, purgative, blood purifier, leprosy, gonorrhoea, fodder, fuel and timber wood. Unripe fruit is given in chronic diarrhea and dysentery.	Infusion, extract decoction	11	0.23	47	0.34	76.59	1●, 2☼, 3●, 4☼, 5☼, 6☼, 7●, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
17	Equisetaceae <i>Equisetum arvense</i> L.	Fazal-127	Bandakay	Herb	SH	Di-E-caffeoyl-meso-tartaric acid, mono-O-Caffeoyl-meso-tartate, caffeic acid, onitin and oniti-9-O-glucoside., Kaempferol 3-O-Sophoroside-7-O-glucoside, Kaempferol 3-O-(6''-O-malonyl-glucoside)-7-O-glucoside, Kaempferol 3-O-sophoroside, Quercetin 3-O-glucoside, apigenin, apigenin 5-O-glucoside, luteolin, luteolin 5-O-glucoside, genkwanin 5-O-glucoside, isoquercitrin. equisetumoside A, equisetumoside B and equisetumoside C. Styrylpyrroglucosides 3'-deoxyequisetumpyrone. (Sandhu et al., 2010)	Hair tonic, anti-lice, kidney problem, washing and cleaning of utensils.	Extract	4	0.13	31	0.23	77.42	1▲, 2☼, 3▲, 4☼, 5▲, 6☼, 7☼, 8▲, 9☼, 10☼, 11☼, 12☼, 13☼, 14●, 15☼, 16☼, 17☼, 18☼, 19☼
18	Euphorbiaceae <i>Euphorbia helioscopia</i> L.	Fazal-153	Mandaro	Herb	L, SH	Diterpenes (Yamamura et al., 1989)	Anti-lice, laxative, carminative, Latex are also poisonous cause swelling on skin, irritation.	Latex juice and decoction	5	0.12	40	0.29	72.50	1☼, 2☼, 3☼, 4☼, 5▲, 6☼, 7☼, 8☼, 9☼, 10●, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
	<i>Ricinus communis</i> L.	Fazal-155	Arund	Shrub	L and SD	Tannins, flavonoids, Saponins, glycosides (Yadav and Agarwala, 2011)	Poisonous, wound, narcotic and purgative	Infusion	4	0.16	25	0.18	84	1●, 2☼, 3▲, 4☼, 5☼, 6☼, 7☼, 8▲, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15●,

															16▲, 17●, 18☉, 19☉
19	Juglandaceae <i>Juglans regia</i> L.	Fazal-157	Ghooz	Tree	L, R, FR and ST	Flavonoids, Saponins, glycosides, alkaloids, and steroids (Mahoney and Molyneux, 2004)	Fruits edible, toothache, lipsticks, furniture, fuel and timber wood, anthelmintic, lactifuge and fruit tonic enhance memory.	Paste, decoction	9	0.19	46	0.33	73.91	1●, 2☉, 3☉, 4☉, 5▲, 6☉, 7●, 8●, 9▲, 10☉, 11●, 12☉, 13☉, 14●, 15☉, 16☉, 17☉, 18☉, 19▲	
20	Leguminaceae <i>Acacia modesta</i> Wall.	Fazal-125	Palosa	Tree	WP	Terpenoids, tannins, alkaloids, Saponins and glycosides (Banso, 2009)	Tonic, demulcent, stimulant, diarrhea, timber and fuel, fodder, Tooth brush is made from roots.	Decoction	8	0.20	39	0.28	64.44	1☉, 2●, 3☉, 4☉, 5☉, 6☉, 7☉, 8☉, 9☉, 10▲, 11☉, 12☉, 13☉, 14☉, 15☉, 16☉, 17☉, 18☉, 19☉	
	<i>Indigofera heterantha</i> Wall, ex Brand.	Fazal-156	Ghwraja	Shrub	WP	Phenolics acid, alkaloids, terpenoids, flavonoids, tannins, Saponins glycosides (Hasan et al., 1989; Uddin et al., 2011c)	Diuretic, carminative, urinary problems, demulcent, anti-cancer, refrigerant, basket, birds cages, fuel, shelter and washing utensils.	Decoction and paste	11	0.24	45	0.33	64.10	1●, 2▲, 3☉, 4☉, 5☉, 6☉, 7☉, 8☉, 9☉, 10☉, 11☉, 12☉, 13☉, 14☉, 15☉, 16☉, 17☉, 18☉, 19☉	
21	Lamiaceae <i>Mentha arvensis</i> L.	Fazal-122	Podina	Herb	L, SH	Alkaloids, Flavonoids, Saponins, Tannins (Johnson et al., 2011)	Salad, chutney, laxative, carminative, digestive, vomiting, spices, stimulant and mouth washed.	Paste and decoction	9	0.19	48	0.35	77.08	1●, 2☉, 3☉, 4☉, 5●, 6☉, 7☉, 8☉, 9☉, 10☉, 11☉, 12☉, 13☉, 14▲, 15☉, 16☉, 17☉, 18☉, 19☉	
	<i>Mentha longifolia</i> L.	Fazal-120	Wanly	Herb	L	Pulegone, isomenthone, 1,8-cineole, borneol, and piperitenone oxide (Idrissi and Fkih-Tetouani, 2001)	Chutney, stimulant, aromatic, stomachache, carminative, flavoring agent, anti-rheumatic, diarrhea, dysentery, vomiting and digestive problems.	Powder	11	0.26	42	0.31	76.19	1●, 2☉, 3☉, 4☉, 5●, 6☉, 7☉, 8▲, 9☉, 10☉, 11☉, 12☉, 13☉, 14●, 15☉, 16☉, 17☉, 18☉, 19☉	
	<i>Ocimum basilicum</i> L.	Fazal-121	Kashmaly	Herb	L, FR	Volatile oils, unusual flavones, sterols and triterpenes, sesquiterpene alcohols of copane series, rosmarinic acid (Daniel et al., 2011)	Ornamental, aromatic, toothache and diuretic.	Infusion	4	0.11	36	0.26	63.89	1▲, 2☉, 3☉, 4☉, 5▲, 6☉, 7☉, 8▲, 9☉, 10☉, 11▲, 12▲, 13☉, 14▲, 15▲, 16☉, 17☉, 18☉, 19☉	
22	Meliaceae <i>Melia azadirach</i> L.	Fazal-158	Shandi	Tree	WP	Alkaloids, tannins, flavonoids, terpenoids, Saponins phenols, steroids, glycosides, (Suresh, 2008); (Rao, 2012)	Emetic, Fruit is sexual tonic, skin disease, night blindness, fever, vomiting, fodder for kettle, fuel and timber wood and agriculture tools.	Decoction, Powder and extract	10	0.26	39	0.28	58.97	1●, 2▲, 3☉, 4☉, 5☉, 6☉, 7☉, 8▲, 9☉, 10☉, 11☉, 12☉, 13☉, 14☉, 15☉, 16☉, 17☉, 18☉, 19☉	
	<i>Toona hexandra</i> (Wall.) M. Roem.,	Fazal-113	Shani	Tree	WP	Alkaloids, flavonoids,	Diuretic, astringent,	Powder	10	0.26	39	0.28	69.23	1☉, 2☉, 3☉, 4☉,	

	Fam.					saponines, tannins, phlobatannins, terpenoids and cardiac glycosides (Perveen and Zaib, 2013)	dysentery, diarrhea, fodder, furniture, plough, agricultural tools, fuel and timber wood.								5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
23	Moraceae <i>Ficus palmata</i> Forssk.	Fazal-159	Inzar	Tree	L, FR, ST	Alkaloids, tannins, flavonoids, terpenoids and cardiac glycosides. (Joshi et al., 2014)	Fruits edible, laxative, carminative, demulcent, tonic, Fuel wood and fodder.	Decoction	7	0.15	45	0.33	72.22	1☼, 2☼, 3▲, 4▲, 5☼, 6☼, 7▲, 8▲, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
	<i>Morus alba</i> L.	Fazal-117	Spin toot	Tree	L, FR, ST	Rutin, isoquercitrin, astragal in and quercetin-3-(6-malonyl) quercetin 3-O-β-glucopyranoside-7-O-α-rhamnopyranoside, kaempferol-7-O-glucoside, Alkaloids, tannins, steroids, flavanoids and saponin, (Wang et al., 2013; Zafar et al., 2013)	Fruits edible, vegetable, fuel, furniture, timber, basket, laxative, carminative, demulcent and tonic.	Infusion, paste and decoction	10	0.21	47	0.34	71.11	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7●, 8☼, 9▲, 10▲, 11●, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
24	Myrtaceae <i>Eucalyptus globulus</i> Labill.	Fazal-160		Tree	BR and L	Lignin, β-βsubstructures (pino-/syringaresinal and isotaxiresinol types), Gallic acid [globulisin A, cypellocarpin A, eucagobulin, cuniloside and (1S, 2S, 4R)-trans-2-hydroxy-1-8-cineole β-D-glucopyranoside (Evtuguin et al., 2001; Hasegawa et al., 2008)]	Irritation, astringent, sore throat, Fuel and timber wood.	Powder	5	0.14	36	0.26	65.96	1☼, 2●, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14●, 15☼, 16☼, 17☼, 18☼, 19☼	
25	Oleaceae <i>Olea ferruginea</i> Royl.	Fazal-174	Khona	Tree	WP	Phenols, triterpenes, flavonoids, L-phenyl alanine Levamisole, β-amyrin, oleuropein and ligstroside (Hashmi et al., 2015; Hussain et al., 2014)	Fruits edible, anti-diabetic, throats soar, astringent, antiseptic, diuretic, antiperiodic, tonic, refrigerant, nutrient, emollient and laxative.	Paste, Infusion	12	0.28	43	0.31	69.77	1▲, 2☼, 3☼, 4☼, 5☼, 6☼, 7▲, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
26	Oxalidaceae <i>Oxalis corniculata</i> L.	Fazal-173	Therwaky	Herb	L, FR	Corniculatin A, luteolin, luteolin-7-O-β-D-glucoside and β-sitosterol-3-O-β-D-glucoside (Ibrahim et al., 2013)	Antispasmodic, refrigerant, stop bleeding from wounds and potherb.	Extract	4	0.10	41	0.30	56.10	1▲, 2▲, 3▲, 4●, 5☼, 6☼, 7●, 8☼, 9☼, 10☼, 11☼, 12▲, 13☼, 14☼, 15☼, 16☼, 17▲, 18☼, 19☼	
27	Papaveraceae <i>Papaversomniferum</i> L.	Fazal-126	Ready	Herb	SD and CP	Norsanguinarine (I), 6-acetylndihydrisanguinarine (II), oxysanguinarine (V), protopine (VI) (Furuya et al., 1972)	Emetic, purgative, narcotic, curing cough, combat cold, fever and fodder.	Decoction	7	0.25	28	0.20	92.86	1●, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
28	Polygonaceae <i>Rumex dentatus</i> L.	Fazal-130	Tarwky	Herb	L, R and	6-methyl-7-acetyl-1, 8-dihydroxy-	Potherb, carminative,	Powder	8	0.22	37	0.27	83.78	1●, 2☼, 3●, 4☼	

					Sh	3methoxy naphthalene-1-0-β-D(L)-glucoside (2) and 6-methyl-7-acetyl-1, 8-dihydroxy naphthalene-1-0-β-D(L)-gkucoside (3), alkaloids, terpenoids, flavonoids, saponine, tannins, cardiac glycosides (Nisa et al., 2013; Zhang et al., 2012)	laxative, cough, combat cold, fever, scorpion bite and diuretic.	extract							5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
29	Pinaceae <i>Cedrusdeodara</i> (Roxb. Ex D. Don) G. Don.	Fazal-129	Dyeer	Tree	WP	Essential oil, Cholesterin and ascorbic acid (Asad et al., 2011)	Timber, fuel, furniture, carminative, diaphoretic, fever and cough.	Infusion	7	0.19	37	0.27	64.86	1▲, 2☼, 3▲, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
	<i>Pinusroxburghii</i> Sar grnt.	Fazal-172	Nakhtar	Tree	WP	A-carene, B-carene, A-Pinene and B-pinene(Asad et al., 2011)	Fuel, timber wood, furniture, skin disease, blood purifier and Fruits edible.	Decoction	6	0.15	39	0.28	58.97	1☼, 2▲, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
30	Platanaceae <i>Platanusorientalis</i> L.	Fazal-131	Chinar	Tree	L, ST	Ethanollic, methanol fraction (Haider et al., 2012)	Diarrhea, toothache, furniture, timber and fuel wood.	Decoction	5	0.11	45	0.33	68.89	1☼, 2☼, 3▲, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
31	Poaceae <i>Digitariasanguinalis</i> (Retz.) Koel.	Fazal-170	Shmokha	Herb	L	Veratric acid, maltol and (-)-loliolide(Zhou et al., 2013)	Diarrhea, dysentery, fodder and analgesic	Powder	4	0.15	27	0.20	77.88	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
	<i>Eleusineindica</i> (Linn.) Gaertn	Fazal-171	Wakh	Herb	L	Alkaloids, flavonoids, tannins and glycoside (Balangcod et al., 2012)	Constipation, laxative, carminative, Liver problem and fodder	Paste	5	0.17	29	0.21	51.28	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼	
32	Primulaceae <i>Anagallisarvensis</i> L.	Fazal-169	Zyarguly	Herb	L, FR	Flavonoids and Saponins (Lopez et al., 2011)	Diuretic, Epilepsy, expectorant and diaphoretic.	Powder	4	0.12	34	0.25	64.70	1☼, 2▲, 3☼, 4☼, 5☼, 6☼, 7☼, 8▲, 9☼, 10☼, 11☼, 12☼, 13☼, 14▲, 15☼, 16☼, 17☼, 18☼, 19☼	
33	Rosaceae <i>Cotoneaster microphyllus</i> Wall. Ex Lindl.	Fazal-133	Kharawa	Shrub	WP		Expectorant, demulcent, stomachache, fuel wood, fodder, fruits	Powder and paste	6	0.16	38	0.28	81.58	1☼, 2●, 3☼, 4▲, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼	

						edible.									13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
	<i>Cydoniaoblonga</i> Mill.	Fazal-166	Bohy	Tree	WP	Phenolic compounds, l-ascorbic acid (Fattouch et al., 2007)	Fruits edible, cardiac tonic, astringent, dysentery, demulcent, diarrhea, throat sore and cough.	Powder and decoction	8	0.22	37	0.27	81.08		1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9●, 10☼, 11☼, 12☼, 13☼, 14●, 15☼, 16☼, 17☼, 18☼, 19☼
	<i>Duchesneaindica</i> (Andrews) Th. Wolf	Fazal-132	Blmngye	Herb	L and Fr	Fumaric acid, fumaric acid monomethyl ester, daucosterol, brevifolin, kaempferitin, pomolic acid, ursolic acid, euscaphic acid and β-sitosterol (Jiangnan et al., 1995)	Fruit edible, anthelmintic, diabetic and fodder	Paste and powder	4	0.16	25	0.18	84		1☼, 2▲, 3☼, 4☼, 5☼, 6☼, 7▲, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
	<i>Pyruspashia</i> Ham. ex Don.	Fazal-167	Tangye	Tree	WP	uvaol, ursolic aldehyde 4-hydroxybenzyl methyl ether, 4-hydroxybenzyl ethyl ether, E-1-(4'-hydroxyphenyl)-but-1-ene-3-one, 5,6β-epoxy-5β-sitostan-3β-ol, 5,6α-epoxy-5α-sitostan-3β-ol, stigmasta-5-en-3β,7α-diol (8), daucosterol plamitatem, glycerol 1,3-di-(9Z,12Z-octadecadienoate, linoleic acid, daucoosterol, β-sitosterol. (Chuan-shui et al., 2011)	Fodder, fruits edible, laxative, carminative, astringent, febrifuge and sedative.	Paste and infusion	7	0.16	44	0.32	75		1☼, 2●, 3☼, 4☼, 5☼, 6☼, 7●, 8☼, 9☼, 10☼, 11▲, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
	<i>Rubusellipticus</i> Smith.	Fazal-168	Karwara	Shrub	WP	Alkaloids, tannins, phenols, saponins, flavonoids, flavones, glycosids, carbohydrates, terpenes, triterpenes (Latha et al., 2015)	Fruits edible, cardiac tonic, diarrhea, bleeding, dysentery and cough.	Paste	6	0.13	47	0.34	72.34		1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7●, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
34	Rutaceae <i>Zanthoxylumarmatum</i> DC.	Fazal-165	Dumbra	Shrub	L, SD and S	α-Fenchol, α-Terpinene, α-Thujene, α-Pinene, β-Pinene, β-Cymene, β-terpineol (Ahmad et al., 1993); (Tiwary et al., 2007) and (Luong et al., 2003).	Spice, analgesic, fever and carminative.	Decoction and powder.	4	0.11	35	0.25	71.43		1▲, 2☼, 3☼, 4☼, 5☼, 6☼, 7●, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
35	Saxifragaceae <i>Bergeniaciiliata</i> (Haw.) Sternb.	Fazal-163	Kamarpanra	Herb	L	1-O-galloyl Bergenin, Bergenin glycosides, (+)-Catechin, Methyl Gallate (Gallicin), Gallic acid. leucocyanidin (+)-Catechin-3-gallate (+)-Catechin-7-O-β-D-glucopyranoside and Paashaanolactone, β-Sitosterol (5), β-Sitosterol-Dglucoside, (+)-Afzelechin (Dharmender et al., 2012)	Tonic, demulcent, cough, fever, snake and scorpion bite, and muscular pain.	Decoction	7	0.18	39	0.28	58.97		1☼, 2☼, 3▲, 4▲, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19●

36	Simaroubaceae <i>Ailanthus altissima</i> Mill.	Fazal-162	Farmyshandi	Tree	R	Tetradecanol, heneicosane, tricosanedocosane, $\alpha$ -curcumene $\alpha$ -gurjunene, rutin, hyperoside and quercetin-3-galloyl hexoside(Albouchi et al., 2013)	Diarrhea, fuel, timber wood, fodder and dysentery.	Powder	6	0.15	41	0.30	70.73	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10☼, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
37	Solanaceae <i>Solanum nigrum</i> L.	Fazal-164	Karmcho	Herb	L, ST and FR	Alkaloids, flavonoids, Saponins, tannins(Gogoi <sup>1</sup> and Islam, 2012)	Eye disease, skin disease, jaundice, blood purifier, vegetable, fruit are eaten and fodder	Powder	7	0.16	43	0.31	72.09	1☼, 2☼, 3▲, 4☼, 5☼, 6☼, 7●, 8▲, 9☼, 10▲, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
38	Ranunculaceae <i>Ranunculus muricatus</i> L.	Fazal-161	Ziarguly	Herb	L, SH	Cardiac glycosides, Saponins, Tannins(Aslam et al.)	Poisonous, Cough and asthma	Decoction	3	0.08	35	0.25	65.71	1☼, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8☼, 9☼, 10▲, 11☼, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼
39	Violaceae <i>Viola odorata</i> L.	Fazal-124	Banafsha	Herb	FL	Alkaloid, glycoside, Saponins, methyl silylate, mucilage (Siddiqi et al., 2012)	Diaphoretic, febrifuge, antipyretic, demulcent, cough, fever, carminative and laxative.	Infusion	8	0.18	45	0.33	55.55	1●, 2☼, 3☼, 4☼, 5☼, 6☼, 7☼, 8▲, 9☼, 10☼, 11●, 12☼, 13☼, 14☼, 15☼, 16☼, 17☼, 18☼, 19☼

Keys: L=Leave, R= Root, RH= Rhizome, FL=Flower, ST=Stem, WP= whole plant,SH= Shoot, FR= Fruit, SD= Seed, CP= Capsule, BR= Bark, B= Bulb,

Symbol ● = Similar uses, ▲=no similar uses and ☼=plant are not present

1=(Shah et al., 2016); 2=(Ijaz et al., 2016); 3= (Mahmood et al., 2012); 4= (Joshi and Tyagi, 2011); 5=(Vitalini et al., 2015); 6= (Baydoun et al., 2015); 7=(Khan et al., 2015); 8=(Güzel et al., 2015); 9= (Sargin et al., 2015); 10=(Ahmed et al., 2015); 11=(Jarić et al., 2015); 12=(Silalahi et al., 2015); 13= (Kimondo et al., 2015); 14= (Alarcón et al., 2015); 15= (Suleiman, 2015); 16=(Urso et al., 2016); 17= (Panda, 2014); 18= (Ahmad et al., 2014); 19=(Ghorbani, 2005)

**Table 3. Fidelity level (FL %) main use of species, informants for main use and total number of informants for plant specie**

S.No	Family/Botanical Name	Main use	For main use value	Total number of informants for plant species	FL %
1.	<i>Papaversomniferum</i> L.	Curing cough	26	28	92.85714
2.	<i>Ricinuscommunis</i> L.	Wounds	21	25	84
3.	<i>Duchesneaindica</i> (Andrews) Th. Wolf	Diabetic	21	25	84
4.	<i>Rumexdentatus</i> L.	Combat cold	31	37	83.78378
5.	<i>Coriandrumsativum</i> L.	Constipation	33	40	82.5
6.	<i>Sonchusasper</i> (linn) Hill.	Combat cold	28	34	82.35294
7.	<i>Allium cepa</i> L.	Hypertension	32	39	82.05128
8.	<i>Cotoneaster microphyllus</i> Wall. Ex Lindl.	Stomachache	31	38	81.57895
9.	<i>Calotropisprocera</i> (Ait.) Ait, F.	Skin disease	35	43	81.39535
10.	<i>Cydoniaoblunga</i> Mill.	Throat sore	30	37	81.08108
11.	<i>Pistaciachinensis</i> (J. L. S) Rech. f.	Cough	17	21	80.95238
12.	<i>Adiantumincisum</i> Forssk.	Diabetes	21	27	77.77778
13.	<i>Allium sativum</i> L.	Hypertension	28	36	77.77778
14.	<i>Digitariasanguinalis</i> (Retz.) Koel.	Dysentery	21	27	77.77778
15.	<i>Cuminumcyminum</i> L.	Cough	31	40	77.5
16.	<i>Equisetum arvense</i> L.	Kidney problem	24	31	77.41935



17.	<i>Menthaarvensis</i> L.	Vomiting	37	48	77.08333
18.	<i>Diospyros lotus</i> L.	Dysentery	36	47	76.59574
19.	<i>Amaranthusviridis</i> L.	Cough	16	21	76.19048
20.	<i>Menthalongifolia</i> L.	Vomiting	32	42	76.19048
21.	<i>Ammivisnaga</i> (L.) Lam.	Asthma	28	37	75.67568
22.	<i>Berberislycium</i> Royle.	Diabetes	37	49	75.5102
23.	<i>Pyruspashia</i> Ham.exD. Don.	Astringent	33	44	75
24.	<i>Nerium oleander</i> L.	Leprosy	26	35	74.28571
25.	<i>Juglansregia</i> L.	Toothache	34	46	73.91304
26.	<i>Foeniculumvulgare</i> Mill.	Digestive	37	51	72.54902
27.	<i>Euphorbia helioscopia</i> L.	Irritation	29	40	72.5
28.	<i>Dysphaniaambrosioides</i> (L.) Mosyakin&Clemants	Malaria	21	29	72.41379
29.	<i>Rubusellipticus</i> Smith.	Cordiac tonic	34	47	72.34043
30.	<i>Conyzacanadensis</i> (L.) Cronquist	Dysentery	26	36	72.22222
31.	<i>Eucalyptus globulus</i> Labill.	Irritation	26	36	72.22222
32.	<i>Solanumnigrum</i> L.	Eye disease	31	43	72.09302
33.	<i>Cuscutareflexa</i> Roxb.	Anti-itching	28	39	71.79487
34.	<i>Achyranthesaspera</i> L.	Removing stones from kidneys	30	42	71.42857
35.	<i>Zanthoxylumarmatum</i> DC.	Fever	25	35	71.42857
36.	<i>Cannabis sativa</i> L.	Wounds	32	45	71.11111
37.	<i>Ficuspalmata</i> Forssk.	Tonic	32	45	71.11111
38.	<i>Ailanthus altissima</i> Mill.	Diarrhea	29	41	70.73171
39.	<i>Nasturtium officinale</i> R.Br.	Stomachache	33	47	70.21277
40.	<i>Oleaferruginea</i> Royle.	Anti-diabetic	30	43	69.76744
41.	<i>Amaranthuscaudatus</i> L.	Fever	34	49	69.38776
42.	<i>Meliaazedarach</i> L.	Skin disease	27	39	69.23077
43.	<i>Platanusorientalis</i> L.	Diarrhea	31	45	68.88889
44.	<i>Carumcarvi</i> L.	Typhoid	22	32	68.75
45.	<i>Allium rubellum</i> M. Bieb.	Cough	19	28	67.85714
46.	<i>Calendula arvensis</i> M. Bieb.	Diaphoretic	23	34	67.64706
47.	<i>Arisaemajacquemontii</i> Blume.	Diarrhea	25	37	67.56757
48.	<i>Chenopodium album</i> L.	Urinary problem	25	37	67.56757
49.	<i>Pimpinellastewartii</i> (Dunn) E. Nasir	Stomach problem	24	36	66.66667
50.	<i>Morus alba</i> L.	Demulcent	31	47	65.95745
51.	<i>Ranunculus muricatus</i> L.	Asthma	23	35	65.71429
52.	<i>Cedrusdeodara</i> (Roxb. Ex D. Don) G. Don.	Cough	24	37	64.86486
53.	<i>Anagallisarvensis</i> L.	Expectorant	22	34	64.70588
54.	<i>Opuntiadillenii</i> Haw.	Asthma	20	31	64.51613
55.	<i>Indigoferaheterantha</i> Wall, ex Brand.	Urinary problem	29	45	64.44444
56.	<i>Acacia modesta</i> Wall.	Diarrhea	25	39	64.10256
57.	<i>Ocimumbasilicum</i> L.	Toothache	23	36	63.88889
58.	<i>Toonahexandra</i> (Wall.) M. Roem., Fam.	Diarrhea	23	39	58.97436
59.	<i>Pinusroxburghii</i> Sargrnt.	Skin disease	23	39	58.97436
60.	<i>Bergeniaciliata</i> (Haw.) Sternb.	Muscular pain	23	39	58.97436
61.	<i>Oxalis corniculata</i> L.	Stop bleeding from wounds	23	41	56.09756
62.	<i>Viola odorata</i> L.	Fever	25	45	55.55556
63.	<i>Cichoriumintybus</i> L.	Jaundice	27	49	55.10204
64.	<i>Juniperuscommunis</i> L.	Anti-cancer	18	35	51.42857
65.	<i>Eleusineindica</i> (Linn.) Gaertn	Liver problem	20	39	51.28205

**Table 4. Comparison of the present study with previous literature at , local, neighboring and global level.**

Number of recorded plant spp. Of aligned areas	Plants with similar uses	Plants with dissimilar uses	Total spp. Common in both area	%age of plant spp. Common in both areas	Species enlisted only in aligned areas	Species enlisted only in study area	% of spp. Enlisted only in study area	% of plants with similar uses	% of dissimilar uses	Jaccard index (JI)	Citation
78	21	8	29	37.17949	49	36	55.38462	32.30769	12.30769	51.78571	(Shah et al., 2016)
74	7	10	17	22.97297	57	48	73.84615	10.76923	15.38462	19.31818	(Ijaz et al., 2016)
61	5	10	15	24.59016	46	50	76.92308	7.692308	15.38462	18.51852	(Mahmood et al., 2012)
90	1	5	6	6.666667	84	59	90.76923	1.538462	7.692308	4.379562	(Joshi and Tyagi, 2011)
212	5	8	13	6.132075	199	52	80	7.692308	12.30769	5.462185	(Vitalini et al., 2015)
124	0	1	1	0.806452	123	64	98.46154	0	1.538462	0.537634	(Baydoun et al., 2015)
47	9	5	14	29.78723	33	51	78.46154	13.84615	7.692308	20	(Khan et al., 2015)
202	4	15	19	9.405941	183	46	70.76923	6.153846	23.07692	9.047619	(Güzel et al., 2015)
91	2	3	5	5.494505	86	60	92.30769	3.076923	4.615385	3.546099	(Sargin et al., 2015)
63	6	5	11	17.46032	52	54	83.07692	9.230769	7.692308	11.57895	(Ahmed et al., 2015)
128	5	5	10	7.8125	118	55	84.61538	7.692308	7.692308	6.134969	(Jarić et al., 2015)
344	1	6	7	2.034884	337	58	89.23077	1.538462	9.230769	1.804124	(Silalahi et al., 2015)
30	0	1	1	3.333333	29	64	98.46154	0	1.538462	1.086957	(Kimondo et al., 2015)
184	8	5	13	7.065217	171	52	80	12.30769	7.692308	6.190476	(Alarcón et al., 2015)
44	1	2	3	6.818182	41	62	95.38462	1.538462	3.076923	3	(Suleiman, 2015)
104	0	1	1	0.961538	103	64	98.46154	0	1.538462	0.60241	(Urso et al., 2016)
187	1	4	5	2.673797	182	60	92.30769	1.538462	6.153846	2.109705	(Panda, 2014)
90	1	1	2	2.222222	88	63	96.92308	1.538462	1.538462	1.342282	(Ahmad et al., 2014)
136	2	5	7	5.147059	129	58	89.23077	3.076923	7.692308	3.888889	(Ghorbani, 2005)

**Table 5. List of ethnobotanical plant species uses not reported and dissimilar uses reported from Maidan Valley, district Dir (L)**

S. no	Plant species uses not reported
1	<i>Toonahexandra</i> (Wall.) M. Roem., Fam.
2	<i>Adiantumincisum</i> Forssk.
3	<i>Amaranthuscaudatus</i> L.
4	<i>Allium jacquemontii</i> Kunth
5	<i>Rhuspunjabensis</i> J. L. Stewart ex brandisBhan.
6	<i>Arisaemajacquemontii</i> Blume.
7	<i>Conyzacandensis</i> (L.) Cronquist
8	<i>Digiteriaciliaris</i> (Retz.) Koel.
9	<i>Eleusineindica</i> (Linn.) Gaertn
10	<i>Ailanthus altissima</i> Mill.
	<b>Dissimilar uses reported</b>
1	<i>Nerium oleander</i> L.
2	<i>Sonchusasper</i> (Linn) Hill.
3	<i>Opuntiadillenii</i> Haw.
4	<i>Cuscutareflexa</i> Roxb.
5	<i>Ocimumbasilicum</i> L.
6	<i>Ficuspalmata</i> Forssk.
7	<i>Oleaferuginea</i> Royle.
8	<i>Cedrusdeodara</i> (Roxb. Ex D. Don) G. Don.
9	<i>Pinusroxburghii</i> Sargmt.
10	<i>Platanusorientalis</i> L.
11	<i>Anagallisarvensis</i> L.
12	<i>Ranunculus muricatus</i> L.
13	<i>Duchesneaindica</i> (Andrews) Th. Wolf

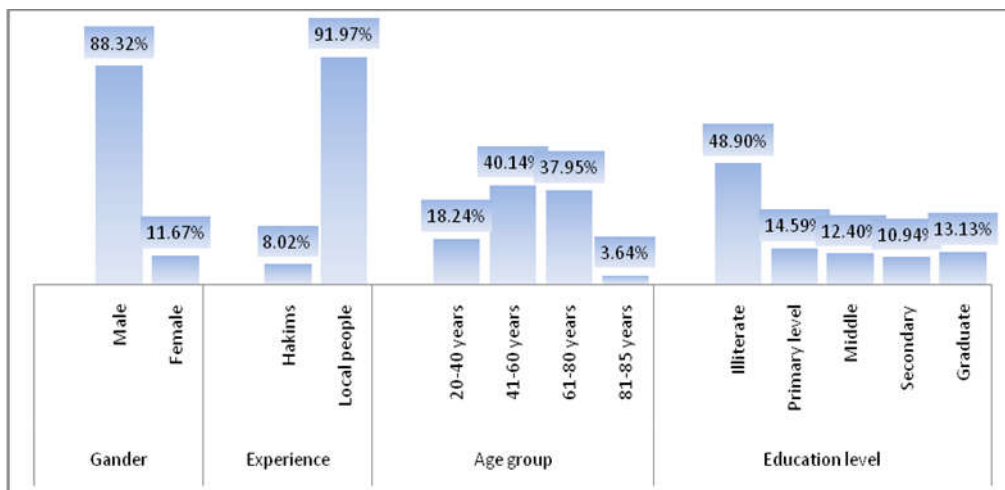


Fig. 2. Number of informants interviewed belonging to different gender and school of thoughts.

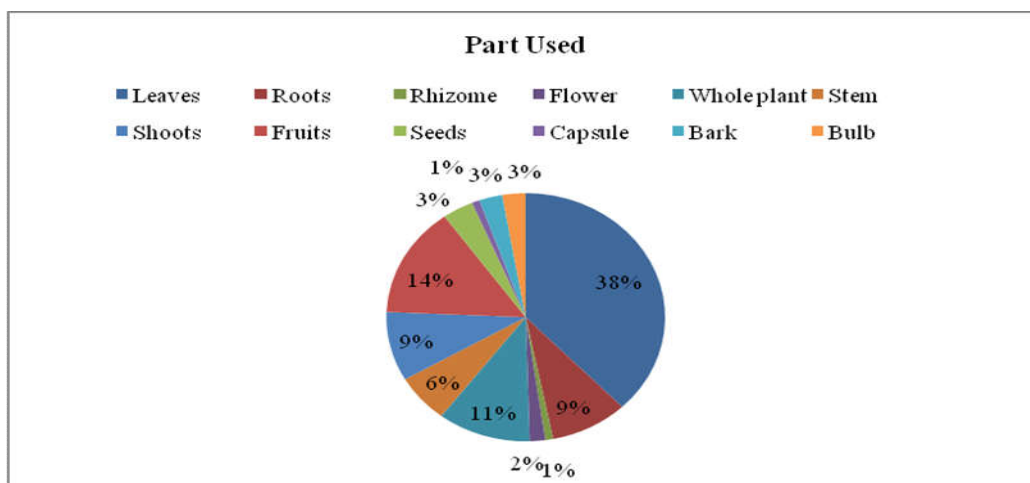


Fig. 3. Plant part used in traditional uses of different ailments.

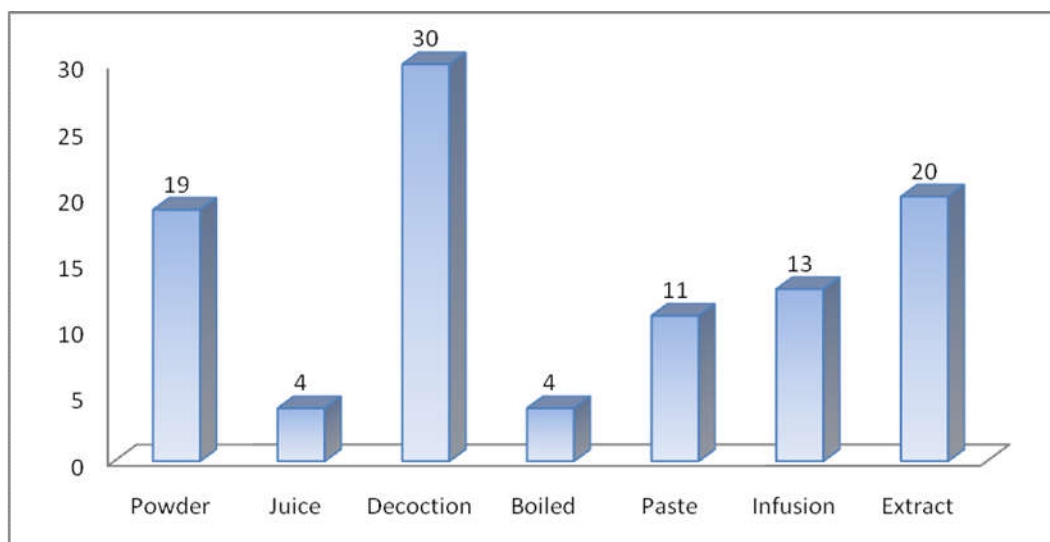


Fig. 4. Mode of administration against different disease

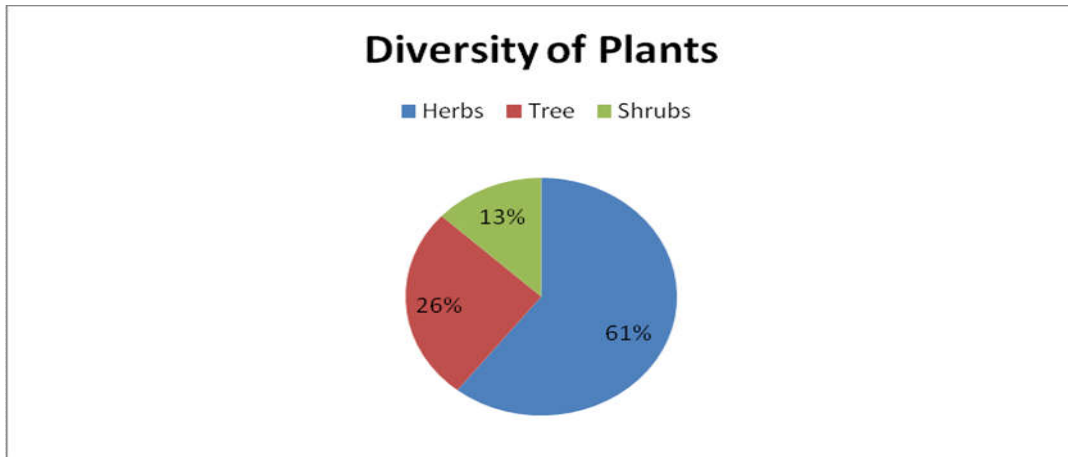


Fig. 5. Life form diversity of plants used for ethnobotanical purposes

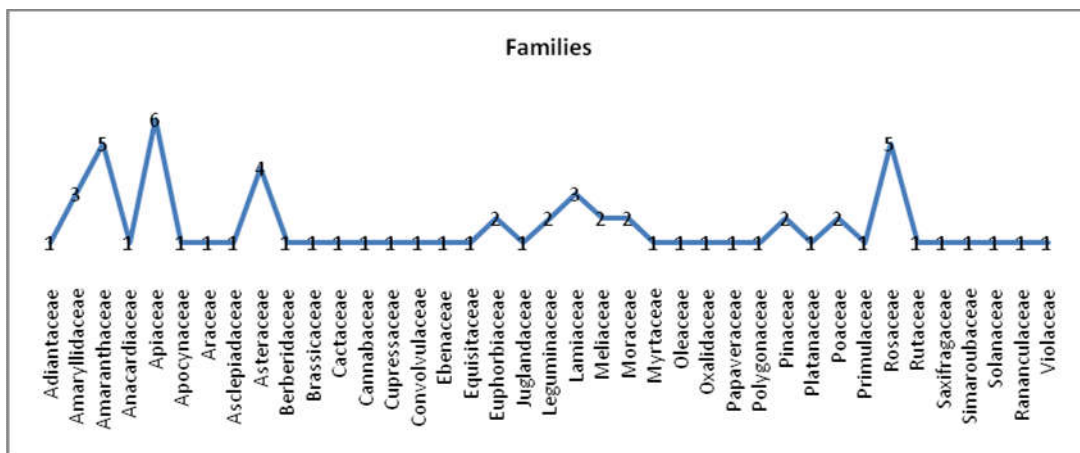


Fig. 6. Different families used as ethno botanically and their number of species in study area.

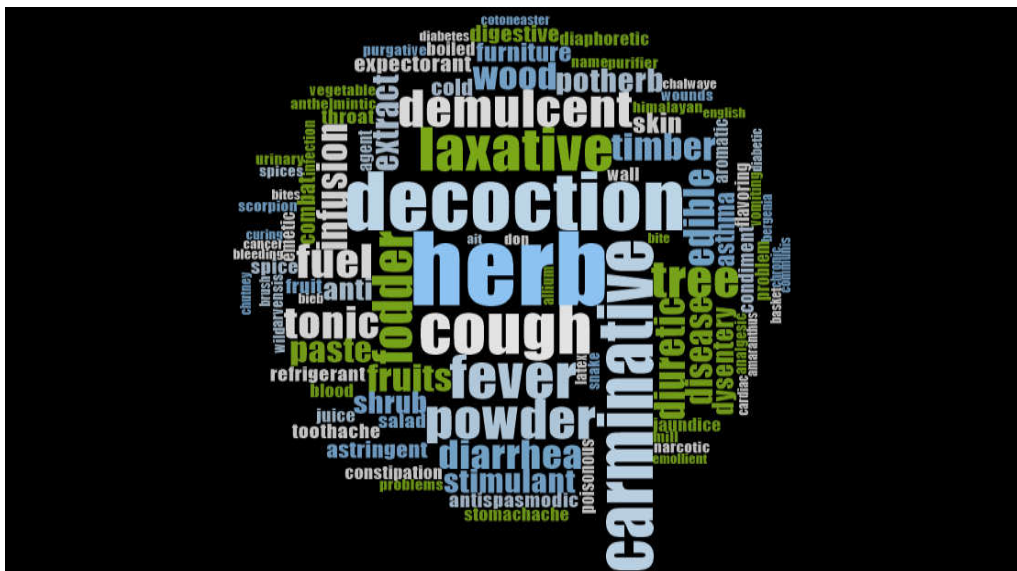


Fig. 7. Systematic presentation

**CONCLUSION**

Medicinal plants are of great consequence for public health in traditional and herbal medicines. Present study is the first documented reference of Maidan Valley, in which 10 out of 65 species were reported for the first time and used for various diseases like Cancer, Diabetics, Cough, Constipation and Jaundice etc. Plants which show high Fidelity level are *Papaver somniferum* L. 92.85%, and used for Curing cough,

followed by 84% of *Ricinus communis* L. and *Duchesnea indica* (Andrews) Th. Wolf. which were used for Wounds and Diabetics respectively. 0.37 is the highest RFC of *Foeniculum vulgare* Mill. and its juice and decoction are used in digestion, diuretic, stimulant, followed by *Amaranthus viridis* L. having RFC 0.36. The highest used value and User reports were 0.37 and 12 of *Carum carvi* L., *Foeniculum vulgare* Mill. 0.27 and 14 respectively. The present compile results suggest, further analysis of active plants chemicals, Biological activities and Pharmacological studies (Fig 7).

### CONFLICT OF INTERESTS

The authors declared that they have no conflict of interests.

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