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Traditional uses of plants and its role in the community development of sheen Ghar Valley district Dir lower Khyber Pakhtunkhwa Pakistan

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Abstract
An ethnobotanical survey was carried out on the flora of Lajbouk valley from November 2020 to October 2021. Lajbouk valley situated in District Dir Lower, in regarding to explore the ethnobotanical potentiality of plants in the area. A total of 59 species belong to fifty-five families. Out of fifty-five families the fifty-one families belong to angiosperm and one family belong to gymnosperm and three families belong to Pteridophytes. Out of 39 families of angiosperms the 4 families belong to Monocot and 47 families belong to dicot. Rosaceae family have largest number of species 7, which followed by Poaceae and Lamiaceae have 5, 5 species, Asteraceae and Rutaceae have 4 species and Polygonaceae, Rhamnaceae and Urticaceae have 3 species. Amaranthaceae, Brassicaceae, Ebenacaeae, Euphorbiaceae, Fabaceae, Fagaceae, Moraceae and Solanaceae have 2 species, while the remaining families show the lowest number of species. Ethnobotanical study of plants clearly showed that all the 90 plant species reported from Lajbouk valley had some kind of traditional or vernacular uses in the District. Largest ethnobotanical class was of 31 species which were used as Medicinal, followed by 25 Fodder and Forage species, 14 fuel wood species, plant species were used for more than three purposes (miscellaneous),11 species were used as vegetable, while 9 species are ornamental plants. The results indicate that the area is climatically and ecologically dry temperate i.e. high species richness and low abundance and this is supported by majority of species used as fodder and forage.

Keywords: traditional uses, lajbouk valley, district dir lower, khyber pakhtunkhwa pakistan

Introduction
District Dir Lower is situated in the north-western part of the Khyber Pakhtunkhwa province at 34°, 37° to 35°, 07′N Latitude and 71°, 31°to 72°, 14′E longitude. It is surrounded by Dir Upper from the north, Malakand in the southwest, Swat from the east and in the west by the tribal district Bajaur. It lies at 2700 feet (823 m) from the sea level. River Panjkora are flow in the middle of the two sister district, Dir upper and Dir lower. Snow covered mountains peak are the source of feed for this River. Total area of the Dir lower is 1582 km2 and total population is 1,435,917 (2017 census report). The natural flora of the Valley is consisting of some coniferous forest. The vegetation of the valley is degrading by various anthropogenic activities and intensive deforestation for agriculture practices. The commonly found plants of the area are *Melia*, *Morus*, *Ficus*, and *Pyrus* and *Pinus*. Lajbouk is a lush green valley which provides a good habitat for many birds like sparrow, pigeon and other animals (Anonymous, 1998). The ground floor has rich humus and moisture and the humidity is also supporting the rich distribution of ferns in the moist shady condition (Saleem *et al*., 2000). Further, due to availability of favorable climatic condition and suitable habitats for growth and development, the Pteridophytes are widely distributed in the valley. Forests are the most valuable and vagarious declining natural resource of Pakistan. Most of the forest management studies depict that forest owned by the farmers are comparatively well managed than the state forests. Liverworts and Hornworts which collectively constitute a non-vascular group of plants called Bryophyte (Crandall and Stotler, 1980). Plant body is gametophyte which is relatively small, ranging from 2 cm to 20 cm long. Bryophytes play an important, though inconspicuous role in the cycles of nature. Some of them provide food for the herbivorous mammals, birds and other animals.11 fungal species are isolated from rhizosphere and non-rhizosphere region of Pteris vittata (Yasmin and Saxena, 1990). Comparing to bryophytes they are somehow resistant to drought and even some ferns are serious weeds and their control is a problem as Salvinia molesta (Jayanth, 1987). A study was conducted in greenhouse to investigate the effect of defoliation and injury on dormant buds and apices of Schizoid fern by (Punetha, 1987). Some of the members of this group are economically important e.g. *Christella parasitica, Marsilea minuta*, *Pteris vittata* and *Salvinia molesta* are used to fix green plant tissues (Devi *et al*. 1994), others are toxic and can cause diseases. The term˝ Ethnobotany¨ coined by an American Botanist J William Hershberger in 1896 (Cotton, 1996). Ethnobotany is a branch of biological science which show medicinal relationship exist between people and plants. German physician Leopold Glueck was the first person to work on traditional uses of medicinal plants of Sarajevo (Bosnia). In 19th century he reported uses of plants. Their published work is considered to be the first ethnobotanical work (Chaudhary, *et*

al. 2008). In last century ethnobotany is developed to a more practical field from a documentation field of science, and play vital role in survival of plants resources and protection (Khan 2011). From evidence it is demonstrated that people living an area for long period of time have knowledge about local flora and ecology (Khan 2011). Ethnobotany play a vital role and become essential part of our world, new ethnobotanical research prove that people used traditional drugs for treatment of various diseases since time immemorial and plants are very important element of tribal life (Amrit 2007, Bourdy 2008) [7].

2. Material and Methods

2.1 Study Area

An extensive study was carried out on the flora of Sheen Ghar Valley from November 2020 to October 2021. The area was frequently visited for collection of data belonging to the plant diversity of the flora. The data for the research project was obtained in two phases.

2.2 Field work (Phase-1)

In this phase all the vascular plants of the hill were thoroughly collected. The plant specimens were identified with help of available literature, herbarium specimens and Flora of Pakistan. The sampled plants were processed according to the international standard. The ethnobotanical information regarding all aspects of plant use of the flora of Sheen Ghar was obtained. This information's were collected through a questioner, observations, interviews and guided field walks.

2.3 Observations

Local community has a very rich knowledge of plants use, to know the practices of indigenous knowledge, repeated surveys including transect walks, discussions and informal talks with hakims and local people were made. Field observations include local methods of plants collection, harvesting time, drying, processing, storage and their utilization. This information enabled me to develop a broader envision of the interactions of local people with plant resources. A formal questionnaire was developed keeping in view the experiences of observations for the development of more systematic data and field surveys. A pre-test for the application of the questionnaire was applied to same time all the plants were collected during flowering or fruiting stage and refine the same for the large scale application in the field. At the same time all the plants were collected during flowering or fruiting stage and consequently were poisoned, pressed and preserved.

2.4 Interviews

Field diary was used to record the data during interviews of the plant collectors, local people and hakims. The interviews and group discussions were held with villagers that provided valuable information including all sorts of plant use. The structured and semi structured questionnaires were adopted in interviews to get participatory, qualitative as well as Quantitative data about the plant resources and their utilization by the local people during the survey.

2.5 Survey of vascular plants

The research area was extensively visited during flowering and fruiting seasons of the year. Vascular plant diversity information that includes Pteridophytes, Gymnosperms and Angiosperms were obtained throughout the year at appropriate seasons. The relevant data pertaining to locality, habitat, habit, family, scientific, local names, part used and other valuable information were recorded through a questionnaire. The plant specimens were pressed in newspaper and dried. The collected plant specimens were identified. High resolution pictures were selected from the photographs of the plants taken in research area. The specimens were deposited in the herbarium of Ghazi Umara Khan Degree College Samarbagh Dir Lower.

2.6 Ethnobotanical Survey

The plants specimens collected from the area were classified on the basis of their overall utility in the valley. The ethnobotanical information was collected through interviews of the inhabitants, herd's men, hakims, plant collectors on the basis of age and gender group of the area. The information includes regarding plant usage are medicinal, fuel, timbers, fodder, fruits, plants, vegetables, condiments, spices, plants used as ornamental, fences, dyes and poisonous.

2.7 Documentation and analysis of the obtained data (Phase-2)

Analysis and Documentation of Research Data, the information collected during survey of the area was analyzed and documented according to the set procedures. The data obtained regarding plants use from the area was checked and compared with the available literature and hence reconfirmed. This information's were arranged according to their indigenous uses and are presented in tabulated form. The dependence of the local population on plant resources, their ethno-medicinal and cultural aspects as well as their conservation status was also documented. The inventory for various uses include voucher number, scientific names, local names, family, habitat, habit, Part used and flowering season.

3. Result

3.1 Floristic Inventory

The floristic inventory is the complete checklist of species of a defined geographical area and it gives an outlook of the vegetation type of the area. Plant resources are severely affected by anthropogenic activities, tillage practices, natural calamities and other biotic and abiotic influences. The present research is first-hand information to the flora of the area. A total of 57 species belong to 43 families. Out of 43 families the 39 families belong to angiosperm and one family belong to gymnosperm and three families belong to Pteridophytes. Out of 51 families of angiosperms the 4 families belong to Monocot and 47 families belong to dicot. Rosaceae family have largest species in the study area which contain 7 species which followed by Poaceae and Lamiaceae have 5 species. Asteraceae and Rutaceae have 4 species and Polygonaceae, Rhamnaceae and Urticaceae have 3 species. Amaranthaceae, Brassicaceae, Ebenacaeae, Euphorbiaceae, Fabaceae, Fagaceae, Moraceae and Solanaceae have 2 species, while the remaining families show the lowest number of species.

Pteridophytes
Family name: Adiantaceae
Botanical name: *Adiantum capillus veneris* L.
Local name: Bibi Aisha sanra
Part used: Fronds
Local uses: Fronds juice used in cough and sore throat.
Family name: Dryopteridaceae
Botanical name: *Dryopteris serrato-dentata* (Bedd.) Hay
Local name: Kwanjay
Part used: Rhizome
Local uses: Rhizome is anthelminthic.
Family name: Equisetaceae
Botanical name: *Equisetum arvense L.*
Local name: Bandakay
Part used: Shoots

Local uses: The extracts of shoots are mixed with mustard oil and used as a hair tonic and against lice. It is used for cleaning and washing utensils.

Gymnosperms
Family: Pinaceae
Botanical name: *Cedrus deodara* (Roxb. ex D. Don) G. Don
Local name: Diyar
Parts used Oil, Bark, gum and wood
Local uses: The wood is durable and resistant to white ants, fungal attacks and water. It yields the strongest timber, and is employed extensively in buildings, for making railway sleepers, carriages and for making bridges.
Family name: Pinaceae
Botanical name: *Pinus roxburghii* Sargent
Local name: Nakhtar
Part used: Whole tree
Local uses: The resin locally known, as "Jaula" is a stimulant used for ulcer, snakebites, scorpion stings and skin diseases. It is a blood purifier. Wood is aromatic, antiseptic, deodorant, diaphoretic, stimulant and used in burning of body, cough, fainting and ulceration. Wood is used as timber in construction, makes a good fuel.

Angiosperms (Monocots)
Family name: Acoraceae
Botanical name: *Acorus calamus L.*
Local name: Khawaja
Part used: Rhizome
Local uses: Rhizomes are emetic and a good remedy for flatulence, colic and diarrhea. It is also used against snake bites.
Family name: Araceae
Botanical name: *Colocacia esculenta* (L.) Schott
Local name: Kachalo
Part used: Corn
Local uses: Corn is used as vegetable.
Family name: Cyperaceae
Botanical name: *Cyperus rotundus* L.
Local name: Shamookha
Part used: Tuber and rhizome
Local uses: Used for the treatment of diarrhea, diabetes, malaria.
Family name: Poaceae
Botanical name: *Avena sativa* L.
Local name: Jawdar
Part used: Seeds
Local uses: use as energy booster. Correct sleeping disorder.
Family name: Poaceae (Gramineae)
Botanical name: *Cynodon dactylon* (Linn.) Pres.
Local name: Kabal/drab
Part used: Whole plant
Local uses: It is used along with rose flower in jaundice. It is also used for piles and dysentery.
Family name: Poaceae (Gramineae)
Botanical name: *Saccharum bengalensis* Retz.
Local name: Nal
Part used: Whole plant
Local uses: It is used as hedge, soil binder and for various utensils.
Family name: Poaceae (Gramineae)
Botanical name: *Sorghum helepense* (L.) Pers.
Local name: Dadam
Part used: Whole plant
Local uses: It is used as fodder and hey fodder.
Family name: Poaceae
Botanical name: *Zea mays* L.
Local name: Jawar
Part used: Seeds
Local uses: used for diabetes, high blood pressure, fatigue and high cholesterol level. Seeds as used as a major source of food.

Angiosperms (Dicots)
Family name: Anacardiaceae
Botanical name: *Pistacia chinensis* Bunge ssp. integerrima (J.L.S) Rech. f.
Local Name: Kikar
Part used: Insect infected galls
Local Uses: Fruits and gall's extract is given in jaundice. Leaves are used as fodder for cattle. Wood yields timber, and is used for making furniture. Branches serve for purpose of fuel wood.
Family name: Amaranthaceae
Botanical name: *Amaranthus viridis* L.
Local name: Chalwayi
Part used: Whole plant
Local uses: Cooked as pot-herb, used as emollient.
Family name: Amaranthaceae
Botanical name: *Chenopodium ambrosioides* L.
Local name: Sakha boty
Part used: shoot
Local uses: The young shoots are used as laxative and against malaria.
Family name: Apiaceae
Botanical name: *Foenicullum vulgare* Mill.
Local name: Kagainali
Part used: Fruit, leaves, seeds
Local uses: Seed oil used as vermicide and stomachache. seed is source of volatile oil. Leaves used as diuretic and digestive. Fruit juice is used to improve eyesight.
Family name: Araliaceae
Botanical name: *Hedera nepalensis* K. Koch.
Local Name: Perwati
Part used: Whole plant
Local uses: Leaves and berries are stimulant, cathartic and diaphoretic. Dry leaves are used to stimulate sores. Berries are purgative and are used in febrile disorders. Aphrodisiac, Nerve tonic, General tonic and Depurative
Family name: Asclepiadaceae
Botanical name: *Calotropis procera* (Ait.) Ait.f.
Local name: Spulmai
Part used: Latex of leaves, leaves and roots
Local uses: latex is used as purgative. In small amount its seeds along with red chili and opium are also used for cholera. Milky latex of stem is used in eczema and ring worm.
Family name: Asteraceae
Botanical name: *Artimisia absinthium* L.
Local name:
Part used: leaves
Local uses: used for dyspepsia, and nephrothy
Family name: Asteraceae (Compositae)
Botanical name: *Artemisia vulgaris* L.
Local name: Tarkha
Part used: Leaves
Local uses: Leaves are anthelminthic and useful for curing skin diseases.
Family name: Asteraceae
Botanical name: *Helianthus annuus* L.
Local name: Nwar parast
Part used: Whole plant
Local uses: Oil is used for cooking. Plant is ornamental.
Family name: Asteraceae

Botanical name: *Verbesina encelioides* (Cav.) Benth. &Hook.f. ex A. Gray
Local name:
Part used: Whole plant
Local use: Used in the treatment of gum sores, hemorrhoid, cancer, and skin problems. Also used as ornamental plant.
Family name: Begnoniaceae
Botanical name: *Pyrostegia venusta* (Ker Gawl.) Miers
Local name: Khaista boty
Part used: Whole plant
Local uses: Used as infusion or decoction, also used as general tonic. Also used as a treatment of diarrhea, cough etc. Also used as ornamental plant.
Family name: Berberidaceae
Botanical name: *Berberis lycium* Royle
Local name: Kowary
Part used: Root, Fruits and Stem
Local uses: The roots are grinded into powder and the powders is placed on wounds for early recovery.
Family name: Brassicaceae
Botanical name: *Lepidium pinnatifidum* Ledeb.
Part used: leaves, seed
Local uses: Seeds are used for painful menstruation in Women. Leaves are cooked as vegetables. Whole plant is effect in constipation and pile.
Family name: Brassicaceae
Botanical name: *Nasturtium officinale* R.Br.
Local name: Talmeera,
Part used: Vegetative portion
Local uses: A vegetable, salad and pot-herb. It is antiscorbic, appetizer, diuretic and used in chest infections and stomachache.
Family name: Buxaceae
Botanical name: *Sarcococca saligna* (D. Don) Muell. Arg.
Local name: Shenaoly
Part used: Leaves,
Local uses: Used as a laxative and a blood purifier and for relieving muscular pain. Used as a useful soil binder. Leaves are laxative and blood purifier and good remedy for muscular pains.
Family name: Cactaceae
Botanical name: *Opuntia dillenii* Haw.
Local name: Zaqqum
Part Used: Phylloclade's, fruits
Local uses: The poultice made from the phylloclade is used for extracting guinea worms. The fruits are edible, demulcent and expectorant. The ripe fruit juice is a remedy for asthma and whooping cough. The plant is grown as hedge plant in some places.
Family name: Cannabaceae
Botanical name: *Cannabis sativa* L.
Local name: Bung
Part used: Leaves, Bark and seeds
Local uses:
Warmed leaves are tied over the affected parts of the body for the treatment of spasm. Juice added with milk and nuts to make "Tandai" a cold drink which produces a pleasant excitement. It is sedative, tonic, narcotic, anodyne, refrigerant, and antispasmodic.
Family name: Capparaceae
Botanical name: *Capparis spinosa* L.
Local name: Wakha
Part used: Roots & Leaves
Local uses: Used as folk medicine to treat diabetes, hepatitis and arthritis.
Family name: Cucurbitaceae
Botanical name: *Cucurbita pepo* L.
Local name: Kadoo
Part used: Leaves & Fruit
Local uses; used as an anti-inflammatory, analgesic, anti-diabetic. Used as a source of food.
Family name: Ebenacaeae
Botanical name: *Diospyrus kaki* L.
Local name: Farsi man/Ziar Amlok
Part used: Fruits, wood
Local uses: It is a very common commercial fruit tree. It is used in dry and fresh form and is very delicious. It is a laxative. Fruit stimulates gastric activities, treat diarrhea, piles, and has laxative properties.
Family name: Ebenacaeae
Botanical name: *Diospyrus lotus* L.
Local name: Tor Amlok
Part used: Fruit, wood, leaves
Local uses: The fruits are edible, carminative, purgative and beneficial in blood diseases, gonorrhea, and leprosy. Infusion of the fruit is used as gargle in aphthae or stomatitis and sore throat.
Family name: Euphorbiaceae
Botanical name: *Euphorbia helioscopia* L.
Local name: Mandarro
Part used: Shoots, Seeds and latex
Local Uses: Cathartic and anthelmintic.
The juice is applied to eruptions. Latex is poisonous and causes swelling on skin. It also causes irritation. It is used as a fish poison. The seeds grinded squeezed and extract its oil and used as purgative.
Family name: Euphorbiaceae
Botanical name: *Ricinus communis* L.
Local name: Kharkhanda
Part used: Leaves, seeds, oil
Local uses: The leaves are emetic, narcotic, poisonous and purgative. A poultice made from the leaves is applied to swellings. Castor oil is purgative; oil is given for constipation and to mothers before and after childbirth.
Family name: Fabaceae
Botanical name: *Amphicarpea bracteata* (L.) Fernald
Local name: Moot
Part used: Roots
Local uses: used for the treatment of diarrhea.
Family name: Fabaceae
Botanical name: *Robinia pseudo acacia* L.
Local Names: Toor Kikar
Part used: Whole plant
Local uses: The wood is heavy, hard, strong and durable. It is used for general construction and as a fuel. The plant is poisonous, acting as a purgative and emetic. The flowers are a good source of honey.
Family name: Fagaceae
Botanical name: *Quercus baloot* Griffth.
Local Name: Ghuara Serai
Part used: Wood, nuts (acorns)
Local uses: The seeds are edible, astringent and diuretic, Also Used in asthma, diarrhea, indigestion and gonorrhea. Prevent excessive dejection in case of heaviness in the stomach. **Family name:** Fagaceae
Botanical name: *Quercus brantii* Lindl.
Local name: Khar boty
Part used: Whole plant
Local uses: Used as fuel wood, charcoal, and timber hard wood.
Family name: Fumariaceae
Botanical name: *Fumaria indica* (*Hausskn.*) *Pugsley*
Local name: Papra/shatara

Part used: Shoot
Local uses: Plant is used as a pot-herb. Medicinally used as a blood purifier; diaphoretic and antipyretic.
Family name: Juglandaceae
Botanical name: *Juglans regia* L.
Local name: Ghooz
Part used: Nuts, bark, leaves, and wood.
Local uses: The bark is used for cleaning teeth and sore throat. The leaves are also used as lipsticks. It is also used as a dye. A decoction obtained from the leaves or fruit is used as antispasmodic.
Family name: Lamiaceae
Botanical name: *Ajugba bracteosa* Wall. ex Benth.
Local name: Gooti
Part used: Whole plant
Local uses: The plant is used in internal colic, angina and for the treatment of achnaes.
Family name: Lamiaceae
Botanical name: *Mentha arvensis*
Local name: Pudina
Part used: Whole plant
Local uses: The green and dried leaves used as antispasmodic, refrigerant, stimulant, diuretic and aromatic.
The decoction of the leaves and lemon grass prepared and used as febrifuge in fever. It is a honey- bee species.
Family name: Lamiaceae
Botanical name: *Mentha longifolia* (L.) L.
Local name: Villanay
Part used: Whole plant
Local uses: A powder made from the dried leaves is used in chutney, as a stimulant, and anti-rheumatic, aromatic, flavoring agent, stomachache and carminative.
Family name: Lamiaceae
Botanical name: *Osmium bacilicum L.*
Local name: Kashmalae
Part used: Vegetative portions
Local uses: It is used for toothache, earache and diuretic. Plant is also used as ornamental and for incense /perfume.
Family name: Lamiaceae
Botanical name: *Thymus linearis* Benth.
Local name: Spairkay
Part used: Fruits
Local uses: The fruits are used for colds, coughs and bronchial troubles. It can also use for the treatment of fever, pain, and inflammation.
Family name: Malvaceae
Botanical name: *Hibiscus esculentus* (L.) Moench
Local name: Bandai
Part used: whole plant
Local uses: used for wounds and boils. Leaves are diuretic, emollient. Fruit is edible.
Family name: Meliaceae
Botanical name: *Melia azedarach* L.
Local name: Tora shandai.
Part used: Bark, leaves
Local Uses: The decoction of the leaves is employed in hysteria and for skin diseases. The leaves and flowers are effective for relieving nervous headache.
Family name: Mimosaceae
Botanical name: *Acacia modesta* Wall.
Local name: Palousa
Part used: Gum, sticks
Local uses: The gum obtained from the bark is used as tonic and stimulant. Usually the native mix the gum with wheat flour, sugar is added and roasted in desi ghee, especially given to women, who gives birth to new baby. Ash is used in snuff preparation
Family name: Moraceae
Botanical name: *Ficus carica* L.
Local name: Inzar
Part used: Fruits, latex
Local uses: Fruits, both in dry or fresh form, are edible. It is laxative and demulcent, used in constipation, piles and urinary bladder problems. The latex is used against warts and to remove spines and thorns easy.
Family name: Moraceae
Botanical name: *Morus alba* L.
Local name: Spin Toot
Part used: Fruits, leaves, branches, trunk
Local uses: The fruits are eaten both fresh and dry. They are a laxative and purgative. The leaves are emollient and used for cleaning the throat and as cooling agent. Main source of fuel wood.
Family name: Myrtaceae
Botanical name: *Eucalyptus camaldulensis* Dehnh.
Local name: Laachi
Part used: leaves, seed
Local uses: Used as cough remedy and expectorant. Also used as tonic, astringent, antiseptic.
Family name: Oleaceae
Botanical name: *Olea ferruginea* Royle
Local name: Khona
Part used: Fruits, leaves and trunk
Local uses: The fruit is antidiabetic.
The leaves are used for toothache and throats soar. The leaves and bark are bitter and used as a astringent, antiseptic, antiperiodic, diuretic and tonic.
Family name: Oxalidaceae
Botanical name: *Oxalis corniculata* L.
Local name: Grady tarookay
Part used: Leaves
Local uses: Used for stomach problems, fever, and dysentery. It is refrigerant, vermifuge and flavoring agent.
Family name: Papilionaceae
Botanical name: *Indigofera heterantha* Wall. ex Brand.
Local name: Ghoraja
Part used: Whole plant
Local uses: The leaves, shoots and flowers used as demulcent, refrigerant and anti-cancerous. The roots used as diuretic, carminative and the root-bark in urinary diseases.
Family name: Plantaginaceae
Botanical name: *Plantago lanceolata* L.
Local name: Ghawajabai

Part used: Leaves, fruits, seeds
Local uses: Extract of leaves is applied to sores, wounds and inflamed surfaces. The seeds are laxative and are used for dysentery and mouth diseases. The leaves slightly rubbed and used as antifungal in athlete's foot disease.
Family name: Plantanaceae
Botanical name: *Platanus oriantalis* L.
Local Name: Chinar
Part used: Bark
Local uses: The bark is given for toothache and diarrhea. Bark is used in rheumatism. Bark boiled with vinegar is used in dysentery and diarrhea. Powdered leaves are used in ophthalmic.
Family name: Polygonaceae
Botanical name: *Persicaria hydropiper* (L.) Delabre
Local name: Palpolak
Part used: Whole plant

Local uses: used as astringent, analgesic and hemostatic. Also used for the treatment of kidney stone**s,** edema and asthma.
Family name: Polygonaceae
Botanical name: *Rumex dentatus* L.
Local name: Shalkhy
Part used: Leaves, roots
Local uses: Plant is used as pot-herb.
It is diuretic, astringent and demulcent. It soothes the irritation caused by *Urtica dioca,* which often grows in association with it. Roots are astringent.
Family name: Polygonaceae
Botanical name: *Rumex hastatus* D. Don
Local name: Tarookay
Part used: Leaves, young shoots
Local uses: Fresh leaves are crushed and used to stop bleeding from wounds. It is used in chutneys and as a flavoring agent. The plant is used as antiemetic, carminative, purgative, astringent and diuretic.
Family name: Portulaceae
Botanical name: *Portulaca oleracea* L.
Local name: Warkhari
Part used: whole plant
Local uses: Used as febrifuge, antiseptic, vermifuge. Also used as a antibacterial, antioxidant. Used as a source of food.
Family name: Myrsinaceae
Botanical name: *Myrsine africana* L.
Local name: Maru rang
Part used: Leaves, fruits
Local uses: The fruits are edible and anthelmintic. Leaves are used for fragrance in tea, as spices, carminative, appetizer, flavoring agent and digestive.
Family name: Punicaceae
Botanical name: *Punica granatum* L.
Local name: Ananghorai
Part used: Fruits, bark, leaves
Local uses: Fresh leaves are crushed and the extract is used in dysentery, skin diseases, checking of bleeding from nose, and useful as eyewash. The fruit pericarp is used for whooping cough.
Family name: Ranunculaceae
Botanical name: *Ranunculus laetus* wall. Ex Hook.f& J. W. Thomson
Local name: Ziar goly
Part used: Leaves
Local uses: plant juice are antifungal and antimalarial, used in intermittent fevers, gout, and as
thma. Paste made from leaves used for gas trouble and joints pain.
Family name: Rhamnaceae
Botanical name: *Sageretia thea* (Osbeck) M.C. Jhonston
Local name: Mamanra
Part used: Leaves, bark, fruits, roots
Local uses: Decoction of leaves is used as stimulant and blood purifier. Root decoction is very effective in jaundice. Leaves are used as fodder for cattle.
Family name: Rhamnaceae
Botanical name: *Zizyphus oxyphylla* Edgew.
Local name: Elanai
Part used: Roots, fruits
Local uses: The roots are used for curing jaundice. The fruits are edible and used for gas troubles. Also grown as hedge plant.
Family name: Rhamnaceae
Botanical name: *Zizyphus sativa* Gaertn.
Local name: Markhani
Part used: Fruit
Local uses: use in treatment of Jaundice, diarrhea, Ulcer and fever.
Family name: Rosaceae
Botanical name: *Cydonia oblonga* Mill.
Local Names: Boye
Part used: Fruits, Leaves, bark
Local uses: Leaves, buds and bark are considered as astringent. Seed is demulcent, used in dysentery, diarrhea, sore throat and fever.
Family name: Rosaceae
Botanical name: *Eriobotrya japonica* (Thunb.) Lindley.
Local names: Lokat
Part used: Fruits
Local uses: The fruit is edible; the tree is cultivated as an ornamental tree and for its fruit.
Family name: Rosaceae
Botanical name: *Malus pumila* Mill.
Local name: Manra
Part used: Fruits, flowers, wood
Local uses: Valuable commercial fruit, purgative, source of iron, expectorant, used in jams, jellies, marmalades and good for the heart.
Family name: Rosaceae
Botanical name: *Prunus armeniaca* L.
Local name: Khubani/asharay
Part used: Fruits, wood, leaves, seeds
Local uses: The fruits and seeds are eaten both fresh and dry. Dried fruit is refrigerant and laxative. It is used in fever.
Family name: Rosaceae
Botanical name: *Prunus domestica* L.
Local name: Alocha
Part used: Fruit
Local uses: The fruit is febrifuge, laxative and soma chic. Dried fruit can easily relieve constipation.
Family name: Rosaceae
Botanical name: *Rosa brunonii* Lindl.
Local name: Kuruch
Part used: Flowers, branches
Local uses: It is aphrodisiac and beneficial in bilious affections and burning of the skin. Root is beneficial in eye diseases. Used in skin and eye diseases.
Family name: Rosaceae
Botanical name: *Rubus sanctus* Schreb.
Local name: Baganra
Part used: Roots, leaves, fruits
Local uses: Use for therapeutic purposes. Used for Diabetes mellitus, sore throat, diarrhea and similar enteric disorders.
Family name: Rutaceae
Botanical name: *Citrus limon* (L.) Burm. f.
Local name: Lemo
Part used: Fruit
Local uses: Used for the common cold and flu. Also used as a food and flavoring ingredient.
Family name: Rutaceae
Botanical name: *Citrus medica L.*
Local name: naranj
Part used: fruit
Local uses: The fruit is anti-hypertensive, diuretic, analgesic and estrogenic.
Family name: Rutaceae
Botanical name: *Citrus sinensis* (L.) Osbeck
Local name: Malta
Part used: Fruits
Local uses: Plant produces a popular fruit called “Malta” rich in vitamin C.
Family name: Rutaceae

Botanical name: *Zanthoxylum armatum* DC.
Local name: Dambara
Part used: Bark, stems, fruits, seeds
Local uses: The fruits are carminative, used for stomachache and toothache. Seeds are used as condiment, flavoring agent, tonic, used for fever, cholera, and increase saliva secretion.
Family name: Scrophuldiaceae
Botanical name: *Verbascum Thapsus* L.
Local name: Kharghwag
Part used: Leaves, flowers, seeds
Local uses: Leaves and flowers are used against cough and pulmonary diseases in the form of a
Paste. The seeds are narcotic and used as a fish poison.
Family name: Simaroubaceae
Botanical name: *Ailanthus altissima* (Mill.) Swingle
Local name: Hindustani shandai
Part used: bark
Local uses: A decoction of the bark of both stem and root is used as cardiac depressant and astringent. It is used to cure vaginal discharge, dysentery, intestinal worms, epilepsy, asthma, and heart complaints.
Family name: Solanaceae
Botanical name: *Solanum nigrum* L.
Local name: Karmacho
Part used: Vegetative parts
Local uses: Fodder of low quality. Drinking water after eating this plant may cause flatulence and prove fatal to cattle.
Family name: Solanaceae
Botanical name: *Datura stramonium* L.
Local name: Batura
Part used: Leaves, seeds
Local uses: Green leaves are used for softening the boils. Seeds are smoked for narcotic action. Seeds and leaves are used as anodyne.
Family name: Sapindaceae
Botanical name: *Dodonaea viscosa* (L.) Jacq.
Local name: Ghwaraskay
Part used: Leaves, seeds, wood
Local uses: Leaves are used in the treatment of wounds, swelling and burns. Also used as febrifuge, in rheumatism. Bark is applied as astringent baths and fomentations.
Family name: Ulmaceae
Botanical name: *Celtis caucasica* Willd.
Local name: Taghaga
Part used: Fruit, Leaves
Local uses: The fruits are edible and used as a refrigerant, and also applied in colic, Amenorrhea and allergies. It is also used as fodder.
Family name: Urticaceae
Botanical name: *Debregeasia salicifolia* (D. Don) Rendle
Local Name: Alijai
Part used: Branches, wood and fruits
Local uses: Fruits are edible and also used as a flavoring agent. The powder made up of aerial parts is mixed with mustard oil and used as an antifungal for curing skin rashes, dermatitis and eczema.
Family name: Urticaceae
Botanical name: *Girardinia palmata* (Forssk.) Gaudich.
Local name: Sezonky
Part used: Root
Local uses: The root is crushed and the juice is taken against food allergy.
Family name: Urticaceae
Botanical name: *Urtica dioica* L.
Local name: Lawane Sezoonkae
Part used: whole plant
Local uses: Plant is used as pot herb and as medicine. Used in the control of cardiovascular disorders especially hypertension.
Family name: Verbenaceae
Botanical name: *Verbena officinalis* L.
Local name: Shomaky
Part used: Roots and leaves
Local uses: The plant is used in folk medicine as a tropical anti–inflammatory agent, Analgesic, Anti-depressant, Anti-oxidant, Renal impairment etc.
Family name: Vitaceae
Botanical name: *Vitis vinifera* L.
Local name: Angoor, Kwar
Part used: Fruits, Leaves & Root Flowering
Local uses: Fruit is edible Ripe fruits are diuretic, treat smallpox, and taken as a tonic. The leaves are useful for mouth sores. Roots induce the secretion of milk in nursing mother.

Table 1: Floristic list of the ethno medicinally collected plant of the study area

Pteridophytes

S No	Botanical Name	Local name	Study area	Species%	Family Name
1	*Adiantum capillus-veneris* L.	Bibi Aisha sanra	Asharodheri	1.81%	Adiantaceae
2	*Dryopteris serrato-dentata*(Brdd.) Hay.	Kwanjay	Asharodheri	1.81%	Dryopteridaceae
3	*Equisetum arvense L.*	Bandakay	Garband	1.81%	Equisetaceae

Gymnosperms

S. No	Botanical Name	Local name	Study area	Species%	Family Name
1	*Cedrus deodara*(Roxb.exD.Don)	Diyar	Shenghar	3.63%	Pinaceae
2	*Pinus roxburghii* Sargent	Nakhtar	Shenghar	3.63%	Pinaceae

Angiosperms monocot and angiosperms (Dicots)

S No	Botanical Name	Local name	Study area	Species%	Family Name
1.	*Acorus calamus L.*	Khawaja	Asharodheri	1.81%	Acoraceae
2.	*Colocacia esculenta*(L.) *Schott*	Kachalo	Asharodheri	1.81%	Acoraceae
3.	*Cyperus rotundus*L.	Della	Lajbouk	1.81%	Cyperaceae
4.	*Avena sativa L.*	Jaodar	Garband	9.09%	Poaceae
5.	*Cynodon dactylon* (L.) Pers.	Kabal	Lajbouk	9.09%	Poaceae
6.	*Saccharum bengalense Retz*	Nal	Lajbouk	9.09%	Poaceae
7.	*Sorghum halepense*(L.) Pers.	Dadam	Garband	9.09%	Poaceae
8.	*Zea mays L.*	Jawar	Shenghar	9.09%	Poaceae
9.	*Pistacia chinensis* Bunge ssp.	Kikar	Asharodheri	1.81%	Anacardiaceae
10.	*Amaranthus viridis* L.	Chalwayi	Asharodheri	3.63%	Amaranthaceae
11.	*Foenicullum vulgare* Mill	Kagainali	Ghwargai	1.81%	Apiaceae

12.	*Fumaria indica*	Sha tara	Asharodheri	1.81%	Fumariaceae
13.	*Hedera nepalensis K. Koch.*	Perwati	Asharodheri	1.81%	Araliaceae
14.	*Calotropis procera* (Ait.) Ait.f	Spulmai	Morani	1.81%	Asclepiadaceae
15.	*Artemisia absinthium L.*		Asharodheri	7.27%	Asteraceae
16.	*Artemisia vulgaris L.*	Tarkha	Garband	7.27%	Asteraceae
17.	*Helianthus annuus L.*	Nwar parast	Asharodheri	7.27%	Asteraceae
18.	*Pyrostegia venusta* (*Ker Gawl.*)	Khaista boty	Dermal	1.81%	Begnoniaceae
19.	*Berberis lycium Royle*	Kowary	Ondesa	1.81%	Berberidaceae
20.	*Lepidium pinnatifidum Ledeb.*	Alam	Asharodheri	3.63%	Brassicaceae
21.	*Nasturtium officinale* R. Br.	Tarmira	Lajbouk	3.63%	Brassicaceae
22.	*Sarcococca saligna* (*D. Don*)	Shenaoly	Asharodheri	1.81%	Buxaceae
23.	*Opuntia dillenii* Haw.	Zoqam	Ghwargay	1.81%	Cactaceae
24.	*Cannabis sativa* L.	Bung	Darmal	1.81%	Cannabaceae
25.	*Capparis spinosa L.*	Wakha	Lajbouk k	1.81%	Cyperaceae
26.	*Curcurbita pepo L.*	Kado	Lajbouk	3.63%	Cucurbitaceae
27.	*Diospyrus Kaki*.	Ziar Amlok	Asharodheri	3.63%	Ebenacaeae
28.	*Ricinus communis* L.	Kharkhanda	Biyari	3.63%	Euphorbiaceae
29.	*Euphorbia helioscopia* L.	Mandaroo	Asharodheri	3.63%	Euphorbiaceae
30.	*Amphicarpaea bracteata* (L)	Moot	Lajbouk k	3.63%	Fabaceae
31.	*Robinia pseudo acacia* L.	Tor kikar	Asharodheri	3.63%	Fabaceae
32.	*Quercus baloot* Griffth.	Ghuara Sera	Shen ghar	3.63%	Fagaceae
33.	*Quercus barntiiLindl*	Khar boty	Darmal	3.63%	Fagaceae
34.	*Juglans regia* L	Ghuz	Garband	3.63%	Juglandaceae
35.	*Ajuga bracteosa* Wall. ex Benth.	Guti	Garband	9.09%	Lamiaceae
36.	*Mentha arvensis L.*	Pondina	Lajbouk	9.09%	Lamiaceae
37.	*Mentha longifolia* (L.)	Villanay	Lajbouk	9.09%	Lamiaceae
38.	*Osmium bacilicum L.*	*Kashmalae*	Asharodheri	9.09%	Lamiaceae
39.	*Ajuga bracteosa* Wall. ex Benth.	Guti	Garband	9.09%	Lamiaceae
40.	*Mentha arvensis L.*	Pondina	Lajbouk	9.09%	Lamiaceae
41.	*Hibiscus esculentus* (L.)*Moench*	Bandi	Lajbouk	1.81%	Malvaceae
42.	*Melia azedarach* L.	Torashandai.	Asharodheri	1.81%	Meliaceae
43.	*Acacia modesta* Wall.	Palosa	Morani	1.81%	Mimosaceous
44.	*Ficus carica* L.	Inzar	Shen ghar	3.63%	Moraceae
45.	*Morus alba L.*	Spin toot	Garband	3.63%	Moraceae
46.	*Persicaria hydropiper* (L.)	palpolak	Lajbouk	5.45%	Polygonaceae
47.	*Rumex hastatus* D. Don	Tarookay	Asharodheri	5.45%	Polygonaceae
48.	*Sageretia thea* (Osbeck) M.C.	Mamanra	Garband	5.45%	Rhamnaceae
49.	*Zizyphus oxyphylla* Edgew.	Eanley	Morani	5.45%	Rhamnaceae
50.	*Zizyphus sativa Gaertn.*	Markhani	Shen ghar	5.45%	Rhamnaceae

Table 2: Summary table of the ethnobotanical profile of Lajbouk

S No	Local name	Study area	Species%
1.	**Plants**	**Number**	**Percentage**
2.	Medicinal	31	34.44%
3.	Fodder	25	27.77%
4.	Miscellaneous	14	15.55%
5.	Vegetables	11	12.22%
6.	Ornamental	9	10%

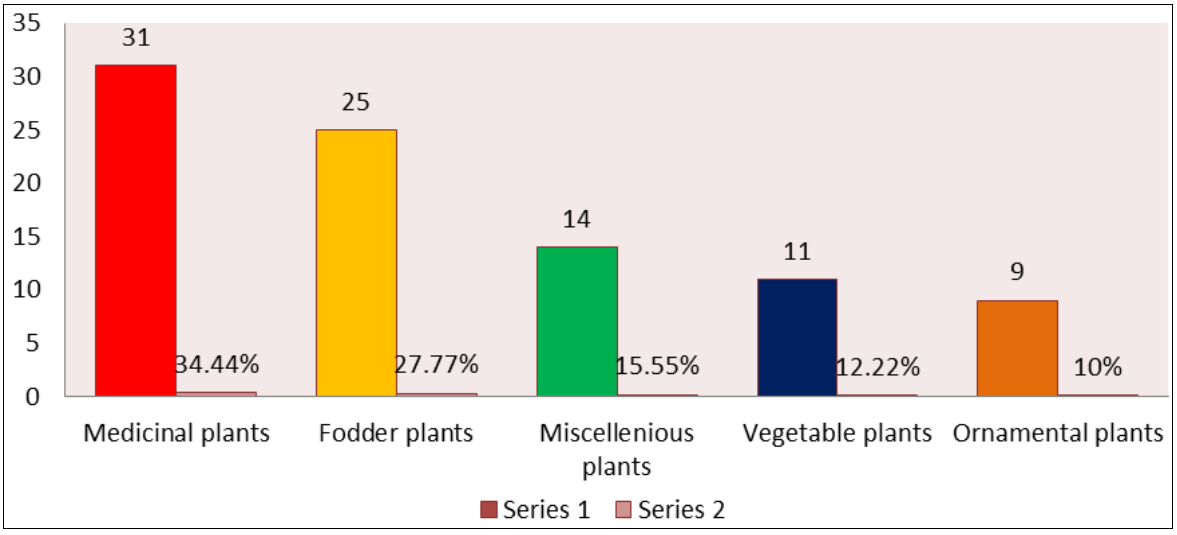

Fig 1: Above graph showing g the percentage value of the medicinal plant of study area

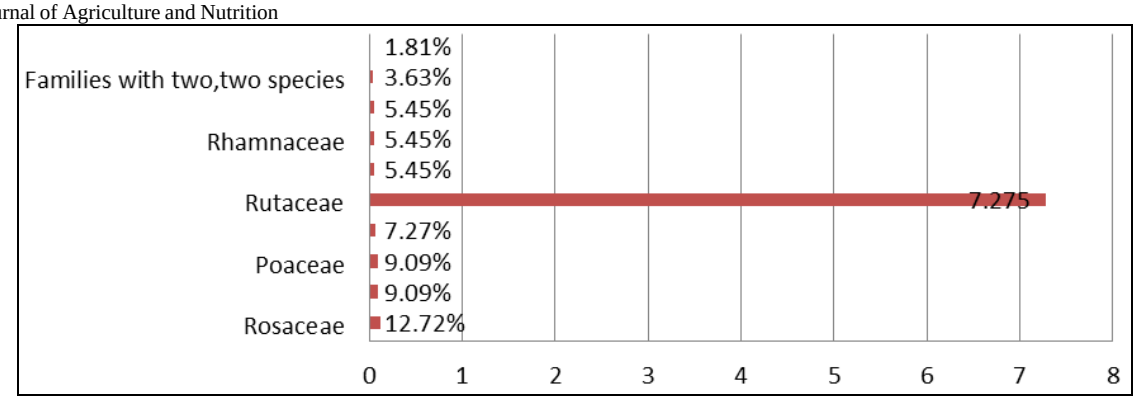

Fig 2: Show the family composition of the study flied

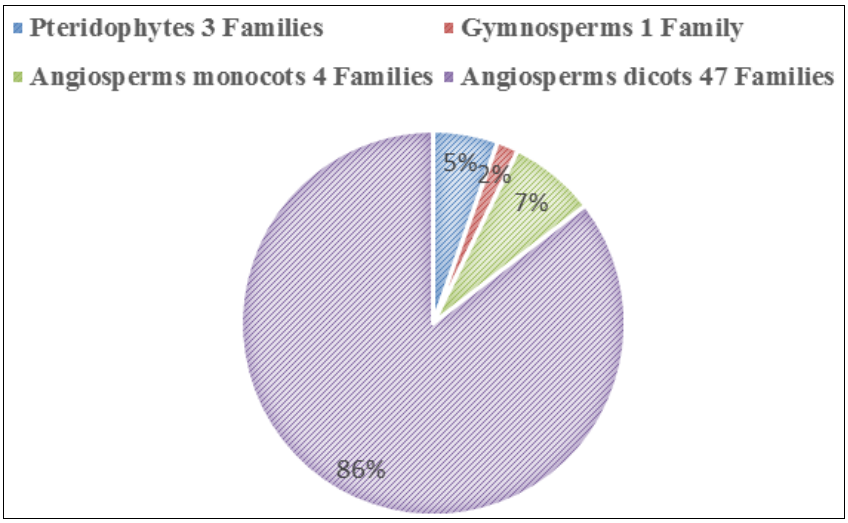

Fig 3: Show the distribution of plant

3. Discussion

Pakistan has natural resources that have been gifted by nature with use and advantage of living organisms. The flora of Pakistan is very rich and diverse because of its various climatic and soil conditions and multiple ecological regions. About 6,000 species of wild plants reported from Pakistan out of which about 400 to 600 are used for medicinal purposes, 23 species of gymnosperms and 128 species of Pteridophytes, about 4492 dicots species of flowering plants and round about 1508 monocots species are considered to be medicinally important. It is clear that dominant plants species are decrease day by day due to overpopulation, lack of awareness about the use of the plants by local inhabitant. The people of the area used plants as limber and timber and cattle fodder. The majority of plants used for these purposes are *Mentha arvensis*, *Platanus orientalis*, *Dodonaea viscosa*, *Cedrus deodara*, *Pinus ruxburgii*, Berberis *lyceum*, Olea *ferruginea*, *Ricinus communis* etc. These plants have been studied and recorded for their medicinal uses like fever, asthma, dysentery etc. the results showed similar relationship with our study due to the reason such as *Mentha arvensis* used for dysentery which are similar to our finding. The people of the study area widely used medicinal plants for various human ailments. The current study showed that consistent indigenous knowledge on ethno medicinal plants used in the treatment of basic human healthcare systems existed here. Most of the people live in rural communities in the remote areas and away from the modern healthcare facilities. In the study area, the local residents are heavily dependent on medicinal plants for health issues and so demand of ethnomedicinal plants increases day by day. The importance of biodiversity conservation is therefore fundamental and strategies of sustainable use should be considered for long-term availability of medicinal plants here and even in whole country. The possible solutions for the conservation of biodiversity and ethnomedicinal flora of the study area, to strengthen national, regional, and local networking activities regarding conservation and sustainable utilization. There must be cooperation among government, non-government organizations, and local community to help conservation of medicinal plants in the area. Furthermore, the fast populations of the study area are often unaware about the importance of biodiversity conservation; they also show poor selection of fuel wood species. There is need to re-introduce the indigenous knowledge about the conservation and management of medicinal plants resources. Even though there is no available database to deposit the documented traditional knowledge in the study area, elderly people were always pleased when we asked them about medicinal plants and their therapeutic uses. Unfortunately, the present generations lack of interest in the flied of medicinal plants. We suggest that the traditional knowledge from the elder people should be documented along with quality photography. In school, college and universities various awareness sessions (in the form conference and seminars) should be arranged for the current generation. The relevant documents should be made available in school libraries. The results of this study support the ethnomedicinal uses to support previous studies. Future investigations should be carried out in order to ensure safe therapy concerning medicinal plants.

4. References

1. Abbasi AM, Khan MA, Ahmad M, Zafar M. Herbal medicine used to cure various ailments by the inhabitants of Abbottabad district, North West Province, Pakistan. Indian journal of traditional knowledge. 2010;9:175-183.
2. 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.

3. Ahmed E, Arshad M, Saboor A, Qureshi R, Mustafa G, Sadiq S. Ethnobotanical appraisal and medicinal use of plants in Patriata, New Murree, evidence from Pakistan. Journal of Ethnobiology and Ethnomedicine. 2013;9:13.
4. Ajaib M, Khan ZU, Khan N, Wahab M. Ethnobotanical studies on useful shrubs of District Kotli, Azad Jammu & Kashmir, Pakistan. Pak. J Bot. 2010;42(3):1407-1415.
5. Aljabri SH, Randhawa MA, Akhtar N, Alakloby OM, Alqurashi AM, Aldossary A. Antidermatophyte activity of ether extract of *Nigella sativa* and its active principle, thymoquinone, J ethnopharmacol. 2005;101(1-3):116-9.
6. Amjad MS. Ethnobotanical profiling and floristic diversity of Bana Valley, Kotli (Azad Jammu and Kashmir), Pakistan. Asian Pac J Trop Biomed. 2015;5(4):292-299.
7. Amrit PS. Ethics in herbal medicine. Ethnobotanical leaflets. 2007;11:206-211.
8. Ayyanar M, Igancimuthu S. Traditional knowledge of kani tribals in Kouthalai of tirunelveli hills, Tamil Nadu, India. Journal of Ethnopharmacology. 2005;102(2):246-255.
9. Cox PA. Will tribal knowledge survive the millennium? Science. 2000;287(5450):44-45.
10. Durrani MJ, Hussain F. Ethnoecological profile of plant of Harboi rangeland, Kalat, Pakistan. Int. J Biol. & Biotch. 2005;2(1):15-22.
11. Goodman SM, Ghafoor A. The ethnobotany of southern balochistan, Pakistan, with particular reference to medicinal plants. *Fieldiana:* Botany, New Series; 1992;31(1):V-11.84.
12. Hamayun M. Ethnobotanical profile of Utror and Gabral valleys, district Swat, Pakistan. Ethnobotanical leaflets. 2005;1:9.
13. Hazrat A, Shah J, Ahmad S, Nisar M, Jan AK Sikandar. Medicinal plants of Usherai valley, Dir, KPK, Pakistan. Pak. J Bot. 2010;42(1):31-34.
14. Hazrat A, Shah J, Ahmad S, Nisar M, Jan AK Sikandar. Medicinal plants of Usherai Valley, Dir, NWFP, Pakistan. Pak. J. Bot. 2010;42(1):31-34.
15. Heinrich M, Gibbons S. Ethnopharmacology in drug discovery: an analysis of its role and potential contribution. Journal of pharmacy and pharmacology. 2001;53(4):425-432.
16. Hocking GM. Pakistan medicinal plants 1, Qualitas Plantarum Et Material vegetable. 1958;5:145-153.
17. Hussain K, Nisar MF, Majeed A, Nawaz K, Bhatti KH. Ethnomedicinal survey of important plants of Lalalpur Jattan, district Gujrat, Punjab, Pakistan. Ethnobotanical leaflets, 2010, 11(7).
18. Hussain SS, Ahmad M, Siddiqui MF, Wahab M. Threatened and endangered native plants of Karachi. J. Biol. Biotech. 2010b;7(3):259-266.
19. Ibrar M, Hussain F, Sultan A. ethnobotanical studies om plant resources of Ranyal hills district shangla, Pakistan. Pak. J Bot. 2007;39(2):329-337.
20. Jan G, Kahan MA, Ahmad M, Iqbal Z, Afzal A, Afzal M. Nutritional analysis, micronutrients and chlorophyll contents of *Cichorium intybus* L. Jour. Med. Pl Res. 2011;5(12):2452-2456.
21. Kamal M, Wazir SM, Hassan M, Subhan M, Khan SU, Muhammad A. Ethnobotanically important plants of District Bannu, Pakistan Pak. J Pl. Sci. 2009;15(2):87-93.
22. Kaur R, Vashistha BD. Ethnobotanical Studies on Karnal District, Haryana, India. Int. Res. J Biological Sci. 2014;3(8):46-55.
23. Khan SW, Khatoon S. Ethnobotanical studies on some useful herbs of Haramosh and Bugrote valleys in Gigit,Northern areas of Pakistan. Pak. J. Bot. 2008;39(3):669-710.
24. 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.
25. Kumari S, Batish DR, Singh HP, Negi K, Kohli RK. An ethnobotanical 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.
26. Mahmood A, Mahmood A, Tabassum A. Ethnomedicinal survey of plants from District Sialkot, Pakistan. J App. Pharm. 2011;2(3):2012-220.
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. Meena KL, Yadav BL. Some traditional ethnomedicinal plants of southern Rajasthan. IJTK. 2010;9(3):471-474.
29. Noman A, Hussain I, Ali Q, Ashraf AM, Haider MZ. Ethnobotanical studies of potential wild medicinal plants of Ormara, Gawadar, Pakistan. Emir. J Food Agric. 2013;25(10):751-759.
30. Patel HR, Patel RS. Ethnobotanical plants used by the tribes of R.D.F Poshina forest range of Sabarkantha district north Gujrat, India. International Journal of Scientific and Research Publications. 2013;3(2):2250-3153.
31. Prakash KC. Indigenous uses, population density and conservation of threatened medicinal plants in protected areas of the Indian Himalayas. Conservation Biology, 2005;19(2):368-378.
32. Qasim M, Gulzar S, Shinwari ZK, Aziz I, Khan MA. Traditional ethnobotanical uses of halophytes from Hub, Baluchistan. Pak. J. Bot. 2010;42(3):1543-1551.
33. Rashid S, Ahmad M, Zafar M, Sultana S, Ayub M, A M. Ethnobotanical survey of medicinally important shrubs and trees of Himalayan region of Azad Jammu and Kashmir, Pakistan. Journal of Ethnopharmacology. 2015;166:340-351.
34. 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.
35. Shah M, Hussain F. Ethnobotanical study of some medicinal plants of Mount Elum, District Bunir, Pakistan. Pak. J. Pl. Sci. 2008;14(2):91-95.
36. Shah M, Hussain F. Ethnobotanical study of some medicinal plants of Mount Elum, District Bunir, Pakistan. Pak. J. Pl. Sci. 2008;14(2):91-95.
37. Shinwari ZK, Gilani SS. Sustainable harvest of medicinal plants at Bulashbar Nullah, Astore (Northern Pakistan). Journal of ethnopharmacology. 2003;84(2):289-298.
38. Shinwari Z, Gilani S, Shoukat M. Ethnobotanical resources and implications for curriculum. Paper presented at the proceeding of workshop on curriculum development in applied ethnobotany, 2002.
39. Swati S, Kanungo VK. Ethnobotanical 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.
40. 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.

41. Ullah S, Khan MR, Shah NA, Shah SA, Majid M, Farooq MA. Ethnomedicinal plant use value in the Lakki Marwat District of Pakistan. Journal of Ethnopharmacology, 2014;158:412-422.
42. Zafar M, Ahmad M, Khan MA, Sultana S, Jan G, Ahmad F. Chemotaxonomic clarification of pharmaceutically important species of Cyperus L. African Journal of pharmacy and pharmacology. 2011;51(1):67-75.
43. Zangiabad S, Pourmirzaie A, Naseri F, Ahmadimoghadam A. Floristic status of Galoochar *juniper* forest reservoit, Iran Midle –East Journal of Scientific Research. 2012;12(2):141-144.