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Ethnobotanical Studies of Economically Important Plants of Gilgit and Surrounding Areas, Pakistan

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Abstract. Ethnobotanical study was conducted for economically important plants of Gilgit and surrounding areas and 13 localities visited during the field trip and 170 plant specimens (Accession No. 123483 to 123673) were collected along with ecological and ethnobotanical information from local inhabitants. The collected plant material was dried, pressed, preserved, accessioned, identified and deposited in the Herbarium.A total of 34 plant species were found to have well defined traditional uses over generations. A total of 22 families (including 20 families of Angiosperms and 2 of Gymnosperms) were studied from Gilgit, Chinar Bagh, Kargah Nallah, Gorikot, Doian, Jaglot, Astore, Hunza, Aliabad, Rakaposhi, Karimabad, Nasirabad and Nomal valley, Pakistan. It was recorded that majority of plants are being utilized in indigenous medicine for remedy of various diseases.

Keywords: ethnobotanical studies, medicinal plants, economic importance of plants, Gilgit (Pakistan)

Introduction

Plant-Human relationship has long-standing history where plant has been used for the thraupetic purposes. In this modern scientific world now developed nations are tilting towards herbal medicines owing to their negligible or no side effects. This relationship has been classified as a separate subject of Botany, the Ethnobotany.

Ethnobotany is the most important approach to study natural resource management of indigenous people. There is no provision any where for the protection of knowledge rights of native people. Little action has been taken by legal professional environmental, non-governmental or even human rights groups to secure intellectual property rights (IPR) for native people Martin, (1995).

There is paucity of information about the ethnobotanical work on the vegetation of Pakistan. Goodman and Ghafoor (1992) studied the ethnobotany of southern Baluchistan (Pakistan) with particular reference to their medicinal value. Likewise, Shinwari and Gilani (2003); Shinwari *et al.*(2003; 2002; 2000a; 2000b;) studied the status of medicinal plants and their conservation in Hindukush-Himalaya, Bar and Shinaki Valleys, Northern Areas (Pakistan), as well as their sustainable harvest. They also reviewed the medicinal plants of Pakistan.

Internationally the ethnobotanical work is gaining attention to elucidate more about the medicinal as well as economically important species that are beneficial for mankind. Labbie and Guries (1995) reported the ethnobotanical importance and conservation of plants of Kaapa Mende region in Sierra Leon.

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The Northern areas of Pakistan, are blessed with a variety of medicinal as well as economically important plants which are in use since primitive ages, by the local inhabitants. However, very meager information is available towards comprehensive usage of the Northern area vegetation. Hence, it warrants the attention to identify and catalogue such an invaluable information. The present work is an attempt to elucidate the vegetation of Gilgit and surrounding areas that are economically important.

Materials and Methods

Various areas and localities of Northern Pakistan were studied for the collection of plant specimen, data recording and to know the ethnobotanical information and traditional uses of plants. The following areas were studied for the said purpose.

1. Gilgit City (Shaheed-i-Millat Road, Chinar Bagh, River Road, Jinnah Bridge,
2. Haidri Muhalla,
3. Kargah Nallah (Stuppa of Buddha, Power Houses, Kargah Top (Valley),
4. Astore (Gilgit to Jaglot Road, Doyan, Gorikot, Astore to Jaglot Road),
5. Hunza (Gilgit to Hunza Road, Rakaposhi View Point, Aliabad, Karimabad, Nasirabad),
6. Nomal Valley and surrounding,
7. Naltar (Nomal to Naltar Road (Jeep track), Naltar Valley, Naltar Ski Resort, Naltar Valley to Naltar, Lake, Naltar Lake and surroundings).

Some local seniors of various ethnic groups having their distinct ways of life, beliefs, traditions and cultural heritage, were interviewed and asked questions regarding traditional uses of plants, their vernacular names, distribution, morphology and economic importance. For the present study, collected plants specimens have been preserved and deposited in the Herbarium of Quaid-i-Azam University, Islamabad, Pakistan. Identification plan have been done by using Flora of Pakistan along with Stewart Annotated Catalogue (Stewart, 1972) and also by studying and comparing the specimens lying at various herbaria of Pakistan.

Results and Discussion

Plant specimens belonging to 20 families of Angiosperms and Gymnosperms, such as Cupressaceae, Ephedraceae, Cannabinaceae, Chenopodiaceae, Amaranthaceae, Asteraceae, Polygonaceae, Tamaricaceae, Papilionaceae, Salicaceae, Elaeagnaceae, Urticaceae, Lamiaceae, Apiaceae, Berberi-daceae, Ranunculaceae, Scrophulariaceae, Plantaginaceae, Solanaceae and Poaceae were collected from 13 localities namely; Gilgit, Chinar Bagh, Kargah Nallah, Gorikot, Doian, Jaglot, Astore, Hunza, Aliabad, Rakaposhi, Karimabad, Nasirabad and Nomal Valley. Information regarding traditional uses of 34 economically important plants of Northern areas, were obtained from various ethnic groups like, Shein (Shina speaking), Brush (Brushaski Speaking), and Wakhi etc. Based on this information the economic importance of plants has been determined. It is found that the flora of Northern Areas is quite rich and diverse in nature due to the differences in climate, altitude, micro-climate and other topographic conditions. The economically important plants found in study area are mentioned in Table 1.

Taxonomy and traditional uses of studied plants have been discussed as under.

1.Amaranthaceae (Townsend,1974).

Botanical name of plant. *Amaranthus viridus* L., and local name, Chulai, Dhimdo.

Parts used. Leaves. Accession No. 123554, 123580 and 123578.

Uses. The plant has emollient properties, the leaves are cooked as vegetable, as well as used as fresh fodder for live stock.

2. Umbelliferae (Stewart Annotated Catalogue, 1972).

Botanical name of plant. *Cuminum cyminum* L., and vernacular name, Zeera (Urdu), Hayaoo (Shina).

Part used. Fruit. Accession No. 123559, 123560.

Uses. Stimulant, antispasmodic, carminative. Cumin is considerably used for flatulence, and also as a remedy for colic and dyspeptic headache. It is also applied externally as a plaster as a cure for stitches and pains caused by sluggish congestion of indolent parts.

3. Asteraceae (Ghafoor,2002).

Botanical name of plant. *Artemisia absinthium* L., and local name, Tarkha, Kirman, Zoon (Shina), Afsanthee (Urdu), Worm Wood (English).

Part used. Whole herb. Accession No. 123528, 123529, 123618, 123530, 123531 and 123532.

Uses. It is one of the most abundant plant species in Northern areas and grows well in sandy soils at high altitudes. Santonin is an active constituent of *Artemisia* that kills worms. It profusely grows in Astore valley as compared to rest of the Northern areas. Its demand in local market is growing and the plant is commonly used as medicine owing to its effect over worms and production of essential oil. It also produces a powerful influence over the nervous system that produces headache and other nervous disorders. It is well known by travelers who suffer severely when marching through the extensive tracts that are covered by this plant species.

Botanical name of plant. *Artemisia maritima* L., and local name, Zoon (Shina), Afsantheen (Urdu), Santonica, Worm Wood (English). Both *Artimisia* species locally recognized with the same names.

Part used. Leaves, buds and flowers. Accession No. 123619, 123620 and 123653.

Uses. It is an important and effective anthelminthic especially for children. The flowers juice is useful for earache. Juice of fruit is used for curing dandruff and falling hair. The leaves are applied to boils and sores. Seeds are anti spasmodic and narcotic.

Botanical name of plant. *Cichorium intybus* L.,and local name, Qarali Chicknachi, Ishkinachi.

Part used. Whole plant. Accession No. 123646 and 123647.

Uses. Whole plant is medicinally used by boiling and the decoction is given in asthma, jaundice and fever. It is also known to enhance digestion by increasing the bile juice secretion. The plant is also used as a fodder.

Botanical name of plant. *Echinops echinatus* Roxb., and local name, Jachir, Jacheer (Gilgit)

Part used. Shoots. Accession No. 123561, 123658 and 123659.

Uses. Plant is diuretic, a common Fodder as well.

Botanical name of plant. *Taraxacum officinale* Webber., and local name, Ishkanachi (Shina), Dandelion (English).

Part used. Leaves and roots. Accession No.: 123541.

Table 1. Summary of ethnobotanical uses and economics importance of collected species.

Species	L.Name	FW	MD	WD	FD	FDR	OL	CND	TMB
Amaranthus viridis L.	Chulai			√					
Cuminum cyminum L.	Zeera		√			√		√	
Artemisia absinthium L.	Kirman	√							
Artemisia maritima L.	Zoon	√	√						
Cichorium intybus L.	Qarali		√			√			
Echinops echinatus Roxb.	Jachir		√			√			
*Taraxacum officinale*Web.	Ishkanachi		√			√			
Berberis lycium Royle.	Ishkeen	√	√		√	√			
Cannabis sativa L.	Thoonch	√	√			√			
Atriplex tatarica L.	Buldar		√			√			
Kochia indica Wight.	Grooee		√			√			
Juniperus excelsa M.	Chilli	√	√			√			√
Eleagnus angustifolia L.	Ghundair	√	√		√				√
Hippophae rhamnoides L.	Buru	√	√		√				
Ephedra gerardiana W.	Sopat		√			√			
Mentha longifolia L.	Fileel		√			√		√	
Thymus serphyllum L.	Tumuro		√		√				
Plantago major L.	Ispaghul		√						
Polygonum hydropiper L.	Water pepper		√			√			
Rumex hastatus D.	Churki		√			√			
Rumex nepalense Sprenge	Dock		√						
Astragalus psilocentros F	Hapoocho	√	√						
Sophora mollis Royle.	Pushool	√	√						
Trifolium pratense L.	Chitbatta		√			√			
*Saccharum benghalense*R.	Sarkanda		√			√			
Clemalis baltistarica	Margush	√	√						
Qureshi S. Chaudhri			√						√
Ranunculus trichophyllus Chalix.	Water crow foot		√						√
Salix alba L.	Mori Bayao	√	√						
Salix tetrasperma Roxb.	Byao	√	√						
Veronica anagallis-aquatica L.	Water-speed wed		√						
Datura stramonium L.	Daturo		√						
Solanumni grum L.	Mako		√						
Tamarix gallica L.	Hookero		√						
Urtica dioica L.	Jomi		√						

abbreviation used; L.Name = local name; FW = fire wood; MD = medicinal; WD = weed; FD = food; FDR= fodder; OL = oil; CND = condiment; TMB = timber/furniture; √ = showing use of plants

Uses. Decoction of this plant is diuretic, used as a tonic and a blood purifier and to cure jaundice and in constipation.

4. Berberidaceae (Jafri, 1975).

Botanical name of plant. *Berberis lycium Royle.*, and local name, Ishkeen, Ishkin, Ishkein (Gilgit), Sumbal (Urdu).

Part used. Whole plant. Accession No. 123594, 123595 and 123596.

Uses. Decoction or the boiled water extract of roots is used in small quantities for the treatment of rheumatism, gout, bodyache and also cure of diabetics. The most widely used and prescribed ethno medicine by the local and traditional ethnobotanists and Hakeems (experts on herbal medicines). Its usage history is usually referred to the birds which when suffer from bone injuries rush to the Berbery and pick fruits when available, other wise, in off days bark and roots are used. Its taste is highly bitter and not bearable when used pure, therefore it is either diluted with water or is taken with

milk. and It is highly recommended for healing bone injuries and fractures. Sometimes its decoction is applied externally at the places where bone is injured. The people as well as birds use berries as a fruit, when ripened. Dried plant is used as fire wood where there is in abundance. The local inhabitants use it as fodder at a smaller scale.

5. Cannabinaceae (Qaiser, 1973).

Botanical name of plant. *Cannabis sativa* L., and local name, Thoonch, Thounch (Gilgit), Charas, Ganja, Bhang (Urdu)

Part used. Whole plant. Accession No.: 123575, 123576 and 123577.

Uses. The seeds of the plants are effective in curing sour throat. The whole plant is narcotic, tonic, sedative and anodyne for stomachache and pains. Its seeds are given to hens; pigeons and different birds as a feed mixed with other grains.

6. Chenopodiaceae (Stewart Annotated Catalogue, 1972).

Botanical name plant. *Atriplex tatarica* L., and local name, Buldar (Shina).

Part used. Shoot. Accession No. 123563, 123565, 123566, 123567, 123568, 123569 and 123570.

Uses. Fodder.

Botanical Name of plant. *Kochia indica* Wight., and local name, Grooee (Shina).

Part used. Whole plant. Accession No. 123492, 123493 and 123557.

Uses. As fodder.

7. Cupressaceae. (Nasir and Yasir, 1987).

Botanical name of plant. *Juniperus excelsa* M. Bieb., and local name, Chilli (Gilgit), Padum (Urdu), Pencil cedar (Eng.)

Part used. Berries. Accession No.: 123649, 123650, 123651 and 123652.

Uses. The berries are used in tuberculosis and diabetes.The ash of bark is applied in skin affections. The ash of leaves is mixed with tobacco to make Snuff (Naswar). Traditionally the berries are burnt to increase in house. The paste of berries is applied on painful joints, swellings.

8. Elaeagnaceae (Nasir, 1975).

Botanical name of plant. *Elaeagnus angustifolia* L., and local name, Ghundair, Ghindawar (Shina).

Part used. Whole plant. Accession No. 123605, 123606 and 123607 uses. The fruit is used for sour throat and gum for asthma.

Botanical name of plant. *Hippophae rhamnoides* L., and local name, Buru (Gilgit), Sea Buckthorn (Eng.).

Part used. Fruits and seed. Accession No.: 123641, 123642, 123643, 123644 and 123645.

Uses. The fruit is very acidic and used as cough syrup. A decoction of the berries, which are rich in ascorbic acid (Vitamin C) is used for cutanious eruption. It is as forage particularly for goats and is a soil improver and soil binder. It is also used for firewood and fencing.

9. Ephedraceae (Nasir and Yasir,1987).

Botanical name of plant. *Ephedra gerardiana* Wall., and ex Stapf, and local name, Sopat, Soopt, Sopt (Shina), Asmani boti (Urdu)

Part used. Shoot and fruit. Accession No. 123615.

Uses. The branches are burnt and ash is mixed with tobacco to make snuff (Naswar). Its branches are sold in local market for medicinal uses. In case of fractured bones which are not healing properly the whole plant is boiled in water and applied at the place of fracture, this helps in easy de- healing of inappropriate healed bones. During survey an interviewe it was that told that presently crushed material boiled and mixed with common salt and being used at the places of painful joints. It appears to be new findings, since it has not been reported elsewhere.

10. Labiatae (Hedge, 1990).

Botanical name of plant. *Mentha longifolia* L., Hudson and local name, Phhileel, Fileel (Gilgit), Jungli podina (Urdu), Horse Mint (Eng.)

Part used. Leaves and Inflorescence. Accession No. 123484, 123490, 123547 and 123548.

Uses. Tea is made from its leaves, which is very useful in migraine, headache, cold, nasal catarrh and profuse mucus discharge, also used in fever. The fresh leaves and flower heads are dried in the sun heat and stored for use in winter season.The leaves and flower heads are carminative and stimulant, stomachache, astringent, antirheumatic and antispasmodic. Also used in whooping cough, asthma and respiratory inflammation, as it is antispasmodic agent.

Botanical name of plant. *Thymus serpyllum* L., and local name, Tumuro (Gilgit), Ban ajwain (Urdu), Wild thyme (Eng.).

Part used. Dried leaves. Accession No. 123549.

Uses. Wild thyme plant is used as an antispasmodic in the treatment of whooping cough, asthma and respiratory inflammations. Thymol, the volatile oil distilled from the leaves is used as a deodorant and antiseptic. Locally the whole plant is used for stomach trouble and fever.

11. Plantaginaceae (Kazmi, 1974).

Botanical name of plant. *Plantago major* L., and local name, Shiltive, Jangli palak (Shina), Ispaghul (Urdu).

Part used. Seeds, Leaves and Roots. Accession No. 123613 and 123614.

Uses.The root powder is very effective for toothache. It is widely used in pharmaceutical industries, especially in Hamdard and Qarshi (Pakistani herbal medicines companies). It is also used in chronic dysentery, diarrhea and constipation.

12. Polygonaceae (Stewart Annotated Catalogue, 1972).

Botanical name of plant. *Polygonum hydropiper* L., local name, Water pepper (English).

Part used. Whole plant. Accession No. 123485 and 123486.

Uses. The herb is diuretic. The leaves are used to lower blood pressure.

Botanical name of plant. *Rumex hastatus* D. Don, local name, Churki (Gilgit), Khati Buti (Urdu).

Part used. Entire plant, mostly roots. Accession No.123515, 123516, 123517, 123518, 123519 and 123520.

Uses. This species is collected as green manure and some times to thatch roofing of the local houses. It is a soil indicator for acidic soils.

Botanical name of plant. *Rumex nepalense* Spreng., and local name, Dock (English).

Part used. Root. Accession No.123491.

Uses. The roots are purgative.

13. Papilionaceae (Stewart Annotated Catalogue, 1972).

Botanical name of plant. *Astragalus psilocentros* Fisch., and local name, Hapoocho (Shina).

Part used. Entire plant Accession No. 123583, 123584 and 123585.

Uses. Dried plants are used as firewood and also as Snake and rodent repellent.

Botanical name of plant. *Sophora mollis* Royle. Baker and local name, Pushool, Poshuol (Shina).

Part used. Leaves. Accession No. 123506, 123507 and 123556 **Uses**. Leaves are used as fodder for live stock.

Botanical name of plant. *Trifolium pratense* L., and local name, Trepatra, Chitbatta (Shina).

Part used. Flower. Accession No. 12353·

Uses. Dried flowers are expectorant and antiseptic given in bronchitis, whooping cough and asthma.

14. Poaceae (Thomas Cope, 1982).

Botanical Name of plant. *Saccharum benghalense* Retz., and local name, Sarkanda, Munj and Kana (Urdu, Punjabi).

Part used. Root and stem. Accession No. 123621 and 123622.

Uses. Root is diuretic and demulcent, stem is refrigerant and aphrodisiac.

15. Ranunculaceae (Stewart Annotated Catalogue, 1972).

Botanical name of plant. *Clematis baltistanica* Qureshi and Chaudhri and local name, Morgush, Margush (Shina).

Part used. Shoot. Accession No. 123521, 123522, 123523 and 123524 Uses. Fodder.

Botanical name of plant. *Ranunculus trichophyllus* Chaix., and local name, Water Crow foot (English).

Part used. Whole plant. Accession No. 123538, 123539 and 123540.

Uses. It is used in fever, Rheumatic pain and asthma.

16. Salicaceae (Stewart Annotated Catalogue, 1972).

Botanical name of plant. *Salix alba* L., and local name, Mori Bayao (Shina).

Part used. Bark. Accession No.123555.

Uses.The bark is used to cure women's ailments, tonic and astringent. The decoction is given in febrile disease of rheumatic or origin. It is also used in diarrhoea and dysentery. It contains a glucoside "salicin".

Botanical name of plant. *Salix tetrasperma* Roxb., and local name,. Byao (Shina).

Part used. Bark. Accession No.123508, 123509 and 123648.

Uses. Fuel wood. Planted along watercourses to prevent soil erosion. A binder of mud. Used in making cricket bats and for light furniture. Bark is used as a febrifuge.

17. Scrophulariaceae (Stewart Annotated Catalogue, 1972).

Botanical name of plant. *Veronica anagallis aquatica* L., and local name, Water-speed wed (English).

Part used. Whole plant. Accession No. 123582 .

Uses. The Plant is anti scorbutic, diuretic and used in piles and also applies on burns, ulcers and wounds.

18. Solanaceae (Nasir and Rafique, 1985).

Botanical name of plant. *Datura stramonium* L., and local

name, Daturo (Shina), Datura (Urdu), Thorn Apple (English).

Part used. Dried leaves, Flowering top and seeds. Accession No. 123500, 123501, 123502 and 123551.

Uses. A very poisonous plant containing drugs which produce hallucinations and dilation of the pupils. The leaves, seeds and fruits are used medicinally. Datura is an important medicinal plant in the local system of medicine as well as in allopathic system. It contains Alkaloids Scopolamine and Hyoscine. The juice of flowers is useful for earache. Juice of fruit is used for curing dandruff and falling hair. The leaves are applied to boils and sores. Seeds are anti spasmodic and narcotic.

Botanical name of plant. *Solanum nigrum* L., and local name, Mako (Urdu), Gabili (Shina).

Part used. Berries. Accession No. 123672 and 123673.

Uses. The berries are used for Jaundice, The vegetati parts are used as fodder of low quality.

19. Tamaricaceae (Qaiser, 1982).

Botanical name of plant. *Tamarix gallica* L., and local name, Hookero (Shina), Jhau (Urdu).

Part used. Bark, Twigs and Galls. Accession No. 123550, 123494, 123495 and 123596.

Uses.The galls are used in dysentery and diarrhea

20. Urticaceae (Ghafoor, 1981).

Botanical name of plant. *Urtica dioica* L., and local name, Jomi (Shina), Bichu Boti (Urdu).

Part used. Leaves and stem. Accession No. 123533, 123630 and 123631.

Uses. The young shoots are eaten as vegetables. The plant is used in kidney diseases and Jaundice the leaves are used for asthma

New findings. Many people experience the improper healing of fractured bones. The only way in medical science to treat such cases through surgery which is a hectic experience to the suffered people. In the study area it was found that people use *Ephedra gerardiana* Wall. ex Stapf and *Berberis lycium* Royle for this purpose.

Decoction or the extract of *Ephedra gerardiana* Wall. ex Stapf is externally applied on the area of bone fracture and it heals within a week. A decoction prepared from *Berberis lycium* Royle, it is recommended for the speedy healing of bone fracture. The decoction is recommended to use with boiled sugary milk orally and to a certain period, depending on the age of the person suffered, and the person is suggested to take rest. In case of the children this period may be a week to a month. The concentrated decoction is used only one teaspoon with one glass of milk.

Northern areas of Pakistan are well known for their bio-diversity. A substantial number of species (approx.124) are considered to be of medicinal importance. Generally it is considered that out of 25000 species of Karakuram-Himalaya-Hindukush range about 2/3rd of the species are medicinally as well as economically important (Pei, 1992). Similarly Nasir and Rafique (1985) worked on the wild flowers of Pakistan. Salick *et al.*(1999) studied the useful plants, a direct relationship between bio-diversity and useful plants among the Dusun of Mt. Kinabalu.

In the present investigation the localities of Gilgit, Skardu districts and some parts of the district Diamir have been explored. The local inhabitants of these districts mostly depend on agriculture, agroforestry and mountain resources. However, owing to the deforestation for firewood, timber for construction, most of lush green forest are vanished leaving behind barren mountain peaks that in turn further resulted in mudflow, land sliding or erosion of soil. Although, the present situation nodoubt resulted in poor vegetation cover (Dickore,1995) but, yet the local vegetation have profound influence over the local population, they use plants for medicine, timber wood, firewood, food, fodder etc. (Hussain and Khaliq 1996; Delcourt *et al.*, 1986). The present investigation leads to identify a number of medicinal plants that are commonly used by local inhabitants as a remedy to the common ailments. The following species are notable in medicinal use.

Artemisia maritima is used for stomachache, killing worms and anthelmintic as work as tonic in the area. Rasool (1998) also reported for the same uses in other parts of Northern areas. A well-known medicinal plant in the area, *Berberis lycium*, used for healing internal bone fracture else where in the Northern areas (Rasool, 1998). However the local inhabitants reported this curative effects in our studies.

Betula utilis is not used medicinally in Shinaki area. Kazmi and Siddiqui (1953) reported that the bark is acrid, pungent, tonic, and useful in convulsion, bronchitis, leprosy and earache. *Cannabis sativa* is used in throat ailments but Hussain *et al.* (1995) reported its uses as sedative in Dabargai Hills, Swat.

Hippophae rhamnoides is used for heart diseases. Kazmi and Siddiqui (1953) reported that decoction of berries is used for cutanious eruptions and also the juice is given to lung complains in Astore and Gurraiz Valleys. *Elaeagnus angustifolia*, fruit is used for throat irritation whereas, gum is used in asthma, in Shinaki area. Yang (1988) reported that women use the gum of *Elaeagnus angustifolia* to wash their hair. Hussain *et al.*(1995) reported that whole plant is used in hedge / fence making, while fruit is edible in Swat.

Ephedra gerardiana is used in dehealing the inappropriately healed bone fracture and rheumatism. Kazmi and Siddiqui (1953) also reported that it is used for rheumatism, wild purgative, and astringent and in infection of the respiratory passages in Astore Valley. Wood provides fuel for one third of the world's population as a source for cooking and heating. Developing countries due to their economical limitations use 86% age of the annually consumed wood to over-come fuel storage (Shinwari, 1993). Shinwari and Khan (1997) enlisted the fuel wood species in Margalla Hills National Park, Islamabad. Along with trees grasses are also threatened due to overgrazing.

The future of range-land depends upon the kind, number and degree of palatable species and the choice of grazing animal. Freshness, height and herbage cover of palatable species were relatively lower in over-grazed area compared to non-grazed pastures. Hussain and Mustafa (1995) reported that, highly palatable species including *Aristida* sp., *Dichanthium annulatum, Eragrostis cilianensis, Festuca altaica, Medicago polymorpha, Festuca kashmiriana, Festuca rubra* and some other species of *Festuca, Poa, Eragrostis, Aristida, Medicago* and *Trifolium* are decreasing in the area.

Family Solanaceae is considered to be the most important of the area due to its economic value, smart revenues are made from the sale of *Solanum tuberosm*. Rosaceae is important for its fruit trees like *Mallus* sp., *Prunus* sp. and *Pyrus* sp. etc. Production of the said members of Rosaceae is considerably good in quantity and quality, as well as adopted in the area. Other families like Poaceae, Leguminosae, Brassicaceae and Moraceae are also important economically.

Peganum harmala, has got religious importance in the study area, especially in Skardu where, it is commonly found. Long and Jie-Ru (1994) reported that ethnobotany will be potential in the conservation of cultural diversity and biodiversity. It is suggested to conduct an investigation in the area into the folklore, myths, proverbs and songs to find out the linkages of culture and ethnobotany. Aumeeruddy (1996) also emphasized on the involvement of local communities in the conservation practices.

Conclusion

Present status of the useful plants of Northern areas can be improved by awareness, dissemination through educating the people about the uses of plants of their region. Proper documentation of indigenous species of medicinal or economic importance would also be an additional help in achieving the objects of sustainable future.

Plantation of medicinal plants or other plants of economic importance can play a vital role in economic development of the area. The local industry can also be established for herbal medicines that in turn would help the country to save foreign exchange reserves on import of herbal medicines.

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