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Ethnobotanical Study of Some Medicinal Plants of Tehsil Kabal, District Swat, KP, Pakistan

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Abstract

The present study was designed to explore the medicinal plants of Tehsil Kabal District Swat, KP, Pakistan. Successive field trips were arranged to gather the information from the local people of the area by means of semi structured individual interviews, open ended questionnaires, informal interviews, and group discussion. The study was conducted from Feb 2012 to June 2012. Total 45 medicinal plants were collected in this study belonging to 27 different families. Out of 45 plants 30 were herbs followed by 13 shrubs and only 2 were trees. Lamiaceae was largest family contributing 6 species. From the result it recorded that leaves are the frequently used plant part used in medical formulation. Excessive use for medicinal purposes, over grazing, deforestation is the main threats to these medicinal plants. From the result it is concluded that people awareness among the people of Kabal is very necessary. This is the first detail ethnomedicinal report of Kabal, District Swat, KP, Pakistan.

Keywords: Ethnobotanical study; Medicinal plants; Kabal; District Swat; Pakistan

Introduction

Ethnobotany is a biological, economic, and cultural inter-relationship study between people and plants of an area in which they exist. Ethnobotanical studies focused on contributing to plant biodiversity knowledge (taking into account that the biological diversity as well as human awareness about the uses, applications, and natural resource conservation) on one hand and take this knowledge for further social and scientific interventions on the other hand ethnobotanical research also helps in establishment of priorities of local community to ensure that the local values are translated into rational use of resources and effective conservation of biological diversity and cultural knowledge. Indigenous knowledge of plants is as old as human civilization but the term ethnobotany was used for the first time by an American botanist John. W. Harsh Berger in 1896, to study plants used by primitive and indigenous communities. To discover the secret uses of plants, ethnobotany has become an important part of our world. Ethnobotany includes all kind of relationships between people and plants. The definition of ethnobotany can be sum up in four words i.e. People, Plants, Interactions, and Uses. The term ethnobotany was for the first time used by John Harsh berg in 1896 [1]. Recent ethnobotanical surveys among families have brought new information about the plant. In Indo-Pak first record of plant medicine were compiled in Ayurveda between 2500-600 BC. The system traces its origin to Greek medicine, which was adopted by Arabs and then spread to India and Europe. About 80% population of the world depends on the traditional system of health care [2,3] Plants have been used since the dawn of human civilization for readymade food, medicines for various ailments, fodder/forage for cattle, burning, flower for celebration, services to earn, honey collection, making agricultural tools, timber for construction and many more useful items [1,4,5]. Over 5000 plant species belonging to angiosperms are used worldwide for medicinal purposes. Medicinal plant products have been used successfully for various ailments both externally and internally. Despite the increasing use of synthetic drugs, plants materials have persisted as the "treatment of choice" as they have no or fewer side effects [6]. According to WHO, 80% of the population in the developing countries rely on medicinal plants healthcare. Modern pharmacopeia still contains at least 25% drugs derived from plants [7], the sub –tropical areas of Pakistan are a diverse habitat for variation plant species, these areas lie in the Hindu Kush and lesser Himalayas [8-10]. The natural resources of Hindu Kush – Himalayas are deteriorating more rapidly than many other region around the world [7,11].

The present study was aimed to explore the indigenous knowledge of plants from Tehsil Kabal, District Swat, KP, Pakistan. Average elevation of the area is about 2400 to 2550 feet above mean sea level. Population of the area is mostly dependant on farming, rearing livestock and associated products of forests and wild plants. The study area is located 20 km away from Mingora city between at 34°47' North and 72°17' East. Kabal is bounded on East by Tehsil Matta and North by Tehsil Babozai and West a Tehsil Barikot and on the South by Qalagy. The soil of Tehsil Kabal is loamy and moist and is irrigated by the Swat River which flows from Kalam through Kohistan and join the River of Kabul near Peshawar.

Material and Methods

The area was visited and plant specimens were collected from February, 2012 to June, 2012. The plants were pressed, dried, mounted on herbarium sheets and identified with the help of flora of Pakistan and double checked for confirmation at department of Botany Government Post Graduate Collage Saidu Sharif Swat (KPK) [12]. Interviews were conducted form local inhabitants. Using questionnaire modified from Croom and Lipp [13,14]. Total 30 informants were interview for ethnobotanical knowledge. The ages of the informant ranged between 30-80 years, and were among the locals who had knowledge about the plants or were dependent on the local resources for their survival.

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The data was collected on various aspect of ethnobotanical usage, e.g. local name; parts used and use categories of individual species. Further conformation about the plant was collected from local drug dealers.

Results

Total 45 medicinal plants were collected in this study belonging to 27 different families. Out of 45 plants 30 were herbs followed by 13 shrubs and only 2 were trees (Figure 1). Lamiaceae was largest family contributing 6 species followed by Asteraceae comprising 5 species and Poaceae 4 species. From the current ethnobotanical study of Tehsil Kabal it was obvious that leaves (44%) are the main part used for different diseases followed by stem (42.4%), fruits (17.77 %), seed (15.5 %), whole plant (13.3 %), roots (2.2%) and flower (2.2%) and shown in the Figure 2. All these plants are being used for the cure of different diseases by the locals of the area. Due its excessive use for ethnomedicinal purposes these plants are decreasing day by day. The detail of plants and their medicinal uses for different diseases are shown in Table 1.

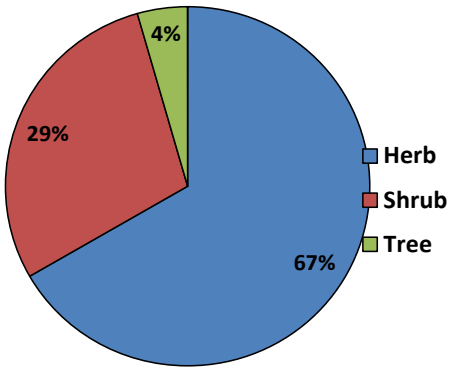

Figure 1: No. of plant species on the basis of habit.

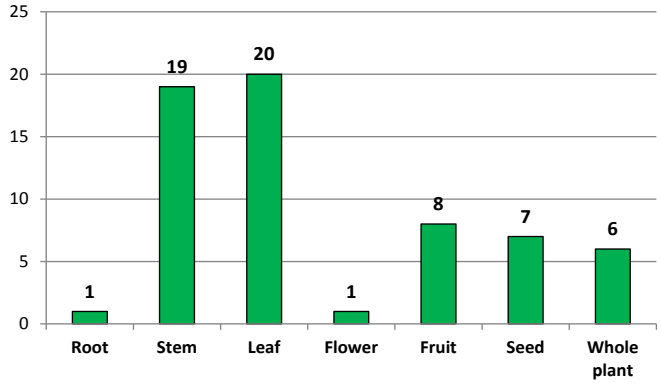

Figure 2: No. of plant species parts used for ethnomedicines.

Discussion

Tehsil Kabal, District Swat is blessed with natural resources and huge forest, but the people are not financially stable. The area is rich in medicinal plants and have highly diverse ecosystem. The Pinus species have the most importantin the forest. Ethnobotanically the area was undiscovered, so the study was designed to highlight the ethnobotanical significance of plants endemic to the area. A total of 45 plants were collected from the whole Tehsil Kabal area comprising of 27 families. Sher and Hussain [15] also conducted study on Malam Jabba hills of ethnobotanical importance, 90 species were collected. Out these 90 species 71 species used as medicinal plants, 20 species for fodder plant, 10 species for vegetables 14 species for wild fruit, 18 for species fuel wood, 9 species for furniture and agricultural tools,

S. no	Botanical name	Local name	Family	Habit	Part use	Ethnomedicinal uses
1	*Ajuga nipponensis* L.	Booti	Lamiaceae	Shrub	Stem, leaves and root	Used for the treatment of debates, and throat pain, the aqueous extract of the shoot used blood purification and also use skin rashes and itching colic.
2	*Amaranthus viridis* L.	Chalwai	Amaranthaceae	Herb	Stem and leaves	Used as a vegetable, purgative and as a fodder. Also use for stomach problem the root of this plant is use a urinary disorder. And sank poison. It is used as diuretic, blood purifier and antispasmodic
3	*Artemisia scoparia* Waldst. and Kit.	Juakay	Asteraceae	Herb	Stem and leaves	used for a analgesic and powdery from use for the colic and also use wands of heeling
4	*Ajuga Bracteosa* Boiss.	Booti	Lamiaceae	Shrub	stem and leaves	Used for the treatment of debates, and throat pain, the aqueous extract of the shoot used blood purification and also use skin rashes and itching colic. Fresh plant is powdered and its extract is used before dinner for ulcer and jaundice.
5	*Amaranthus spinosus* L.	Ganhar	Amaranthaceae	Herb	leaves	Use for antipyretic in animal. Young plant is use as a food (saag).
6	*Asparagus officinalis* L.	Tendona	Asphodelaceae	Herb	Stem	Use is a food and also use for stomach problem, and blood purification
7	*Avena sativa* L.	Jamdary	Poaceae	Herb	Seed and Stem	Fodder, and use as blood purification. Seeds are nerve tonic. Seeds are used nerve tonic.
8	*Artemisia dubia* L.	Dada trkha	Aralliaceae	Herb	Leaves	Use at the time of female delivery
9	*Berberis lyceum* L.	Karwara	Berberidaceae	Shrub	Fruit, stem and laves	The fruit of this plant used as a hepatitis and blood purification and also use for the gums bleeding. Bark and roots are removed, powdered and used for ulcer, colic. Used for internal and external wounds. Used for body coldness and also as a sexual tonic
10	*Cannabis sativa* L.	Bhang	Cannabenaceae	Herb	whole plant	Use for euphoria, sedation and hypnosis. Plant dried and burnt to protect the family members from bad intentions of other people. It is used as narcotic and stimulant
11	*Cichorium intybus* L.	Han	Asteraceae	Herb	whole plant	Use for fever and analgesic and also use as a food (saag).
12	*Convolvulus arvensis* L.	Perwathai	Convuluaceae	Herb	whole plant	Use for cancer, fodder. The old woman used root of this plant for the washing of hair to remove dandruff
13	*Calotropis procera* (Aiton) W.T.Aiton	Spalmai	Companudaceae	Shrub	Fruit and leaf	Fruit and leaf are used for headache and fruit also used cotton. The latex is also use for to take out thorn from the body part.

14	*Carum carvi* L.	Zankai	Asteraceae	Herb	Seeds	Use for anesthetics and for unconsciousness, carminative and flavoring agent
15	*Cuminum cyminum* L.	Zankai	Asteraceae	Herb	Seed and flower	used for anesthetics and for unconsciousness, carminative and flavoring agent
16	*Cynodon dactylon* L.	Kabal	Poaceaec	Herb	Stem and leaves	Useas a fodder and ornamental purposes. And also used for Blood purifier
17	*Carthamus oxyacantha* M.Bieb.	Kareeza	Asteraceac	Herb	Seeds	Old plant used as fuel and young plant used as a food. Seed oil used for control urination and also used for stomachache and anti-cancer
18	*Chenopodium album* L.	Sarmy	Chenopodiaceac	Herb	Stem	Used as a food and also used as a cathartic, anthelmintic,used in hepatic disorder, and enlarged spleen. The roots are used in guidance and urinary disease and rheumatism also used as laxative and as a vegetable (saag)
19	*Delphinium uncinatum* var. *glabrum* Qureshi and Chaudhri		Ranecolacaeaec	Herb	Stem	Use for anticancer, anti-oxidant and also as a poison
20	*Daphne mucronata*	Leegona	Datisaceac	Shrub	Leaves and stem	Powdery form is used wound of healing, used as a fuel. When bones are fracture it is used as a plaster and also used against hepatitis. Powdery leaf is used for body pains. It is used highly praised as a building material.
21	*Duchesnea indica* (Andrews) Th.Wolf	Zamki toot	Rosacaeac	Herb	fruit	Fruit used for removal of kidney stone. Edible, gonorrhea, anthelmintic
22	*Euphorbia helioscopia* L.	Mandano	Euphorbiaceac	Herb	Stem	These plants are considered as poisonous. It kill animal when eat. Local hakims used it as laxative. The latex produced swelling on the skin. Cattles also avoids eating this plant
23	*Ficus carica* Czern. and Rav.	Anzer	Moraceae	Tree	Fruit and latex	Fruits of this plant are used for heart patient, used as food and fruit are also used for stomach diseases. latex are also used for removal of thorn form the body
24	*Justicia adhatoda* L.	Baikan	Juglandaceae	Shrub	Leaves and stem	Leaves of this plant boil is used for blood purification (detoxifier).the dry powdery leaf is used for wound healing
25	*Jasminum humile* L.	Topak lakhta	Juglandaceae	Shrub	Stem	These plants are poisonous and death occurs in animal
26	*Mentha longifolia* (L.) Huds.	Velanay	Lamiaceae	Herb	leaf	Use for diarrhea and vomiting and also used as food and carminative
27	*Myrsine africana* Linn.	Monogaya	Myrisinacaeae	Shrub	leaf and fruit	Fruit used for cough and asthma and also used as fodder for cattle
28	*Mirabilis jalapa* L.	Gully bady	Mimosaceae	Herb	leaves	Use for abscise and rashes and to rejoin the crack bone
29	*Mentha arvensis* L.	Pudenda	Poaceace	Herb	Leaves	Used as antiacid agent, flavoring agent as a carnamative
30	*Malva neglecta* Wallr.	Paneerak	Malvaceae	Herb	Stem	Use as food and also for stomach problem. To remove constipation and enhance digestion
31	*Nasturtium officinale* W.T. Aiton	Tarmera	Nyctaginaceae	Herb	Stem	Use as vegetable and local hakims used as it in tablets, which are used for pain in the body and also used as stomachache
32	*Oxalis corniculata* L.	Taruky	Oxalidaceae	Herb	Stem and leaf	Use for stomach problem, and some hakim is also used for antacid. Refrigerant, vermifuge. and eaten due to the sour tested
33	*Plectranthus rugosus* Wall.	Sperky	Lamiaceae	Shrub	Leaves	Use for fever and headache. Thatching and sheltering honey bee species. And also use for the stomachache. The dried leaves are chewed in mouth to get rid of toothache
34	*Portulaca oleracea* L.	Warkhary	Portulaceae	Herb	Stem	Use for the healing of kidney and also use for uninary track infection
35	*Rubus plicatus* Weihe and Nees	Karwara	Lamiaceae	Herb	Roots and leafs	Use for blood purification and also use for cathartic .the dry leaf or powder is used for wound of heeling. Stomachic, liver disorder,Intestinal colic and also used is a vegetable.
36	*Rumex dentatus* L.	Shalkay	Polygonaceae	Herb	Roots and leafs	Use for blood purification and also use for cathartic .the dry leaf or powder is used for wound of heeling. Stomachic, liver disorder,Intestinal colic and also used is a vegetable
37	*Ricinus communis* L.	Harhanda	Ranecolaceae	Tree	Leaves	Use at the time of delivery and also use for the skin rashes, and arthritis
38	*Sorghum halepense* (L.) Pers.	Dadam	Poacaec	Herb	Whole plant	Use as a fodder of cattle but young are dangerous for animal
39	*Sonchus asper* (L.) Hill	Shodapay		Herb	Stem	Use for the production of milk in animal (lactogenic) and the milk of this plant use for the removal thrones
40	*Solanum nigrum* L.	Kachmacho	Solanaceae	Herb	fruit leaf and stem	Use as a vegetable and fruit are use for kidney stone and hepatitis.The Leaves in the form of paste are applied to skin to cure eczema. The fruits are edible and are used to cure fever
41	*Salvia moorcroftiana* Wall. ex Benth.	Khardag	Lamiaceae	Herb	Leaves	Use body cracks, anticancer, antibiotic and leaf also use for analgesic.Applied on skin to release puss, aphrodisiac
42	*Verbena officinalis* L.	Shmaky	Verbinaceae	Herb	Whole plant	Use for the treatment of fever, headache and also use as antimalarial
43	*Zizyphus sativa* Gaertn.	Markhandai	Rhamnaceae	Tree	Fruit	Fruit are also use for the treatment of hepatitis and kidney stone and also used. Edible, cough, cold, fencing and hedges, honey bee species
44	*Zanthoxylum armatum* DC.	Dambara	Rataceceae	Shrub	Seed	Use for as a carminative .antacid and use as a tonic and also use antipyretic and some hakim use as an antimalarial. Stomachic, tonic Fruits are powdered and eaten with boiled egg for chest infection
45	*Ziziphus oxyphylla* Edgew.	Elanie	Vitacaceae	Shrub	Leaves	Use for the treatment of hepatitis

Table 1: Ethnomedicinal uses of medicinal plants.

9 species for thatching, fencing and hedges, 4 species for honey bee, 2 species for evil eyes, 2 species for religious and another 3 spices as poison. Barkhatullah et al. [16] studied ethnobotany of Malakand Pass Hill, district, Malakand, Pakistan during 2010. A total of 169 species of 140 genera from 76 families were recorded. These consisted of 63 dicot families, five monocot families, four pteridophytes families and a single family of gymnosperm. Poaceae members dominated with 16 species, followed by Asteraceae with 12 species and Lamiaceae with 11 species. The area is under intense pressure of deforestation and overgrazing, which has reduced the renewal of woody plants. Hamayun [17] also conducted study on ethnobotanical knowledge of shrub and trees of District Buner. It was found that 94 different plant species are used for medicinal, timber, fuel wood and fodder, ornamental, agricultural tools, thatching, fencing, naming (folk lore) and fruit yielding purposes.

Conclusion and Recommendation

From my ethnobotanical study of Tehsil Kabal District Swat, it is concluded that the area is full of medicinal plants and anthropogenic pressure is the main threat to these medicinal plants and the likelihood of reintroducing these medicinal plant is not expected in the near future for plantation of these medicinal plants. Deforestation and grazing are also posing threats to the conservation of these local medicinal plants. Awareness program should be organized to aware is of paramount significance for the local people to know the proper collection, uses, and plantation. The area should be further explored for the search of new medicinal plants.

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