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ETHNOBOTANICAL STUDY OF WEEDS AT MOHMAND AGENCY, PAKISTAN

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ABSTRACT

Ethnobotanical study at village Ato Khel Tehsil Halimzai district Mohmand Agency Pakistan revealed a total of 63 ethno botanical plant species belonging to 55 genera and 33 families. These species used traditionally for various daily requirements. Among this Asteraceae were the dominant family having 8 species (12.6%) followed by Euphorbiaceae and Apocynaceae 4 species each (6.4%) Solanaceae, Cyperaceae, Poaceae, Amaranthaceae, Mimoceaceae, Moraceae 3 species each (4.8%) and Meliaceae, Papilionaceae, Asclepiadaceae, Zygophyllaceae, Chenopodaceae, Rhamnaceae with 2 species each (3.1%). The rest of 16 families were represented by one species (1.5 %) each. Maximum plant species were used for fuel (17 species 27.4%) followed by shelter (12 species 19.3%) vegetable (6 species 9.6%) and fencing and furniture 5 species each (8.0%). Rests of families represented were less uses. Most common plant parts used for the different ethnobotanical purposes were whole plant (32 species 50.7%), followed by stem (18 species 28.5%), roots (12 species 19%) and wood (5 species 7.9%). The current study concluded that the Ato khel village has rich weed flora that not only play a role in the beautification of the area but also provide cheap fuel, fodder and medicinal values to the local community. Hence, more comprehensive study recommended to chemically analyzing the medicinal worth that will be helpful in preparing herbal medicines.

Key words: Ethnobotanical study, Mohmand Agency, Pakistan, weeds.

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INTRODUCTION

The study area got its name from Mohmand tribe who are the inhabitants of the area. The agency was recognized in 1951. Previously this area was in the secretarial control of Political Agent. Agency headquarter is at Ghalanay. It is located at 34 10^{o} to 34 43^{o} north-latitudes and 70 58^{o} to 71 42^{o} east-longitude.

It is having an area of 890 square-miles and presently its population is about 627,120 (as per 1998 census) with a density of 146 people/square kilometers). The current assessment estimates the population has nowadays crossed over 0.6 million. The area is chiefly dominated by Muslims (99.00 %) and language is Pushto (Department of statistics FATA cell, 2008-2009).

Mohmand agency is an area of rough mountains with barren slopes. Slope of the agency is from north-east with a mean elevation over 1450 meters. Ilazai (2716 meters) is the maximum topography nearby Pak-Afghan border.

Summer starts from May to September and winter begins in November till February. The average annual rainfall is 100 mm which is insufficient to promote the growth of local flora. Therefore, the weeds and other plants are low in number and found only on those places where moderate moisture is available.

MATERIALS AND METHODS

Choice of study area

Ethnobotanical survey was carried out for both spring and fall season 2014-15 at different villages of Tehsil Halimzai, Mohmand Agency i.e. Ato Khel, Ghazi Beg, Kamali Halimzay, Qandari and Yaseen Kor.

The plants were classified according to their ethnobotanical usage (fodder, vegetables, food, fuel and wood) the knowledge about the plants from shopkeepers, timber dealers, fuel wood sellers, local herbalists, and farmers but priority was given to local mature people who were the real users and had a lot of information about the plants and their traditional uses through open questions. These plants were pressed, poisoned (nepthalin), mounted at standard size (40 x 25 cm^2) herbarium sheets, assess and identified with the help of flora of Pakistan. The voucher numbers were alloted to the plant and submitted to the herbarium Department of Botany, Bacha Khan University Charsada Pakistan.

RESULTS AND DISCUSSION

A total of 63 ethnobotanical plant species were collected belonging to 55 genera and 33 families from study area, being used traditionally for various daily requirements. Asteraceae was the

dominant family having 8 species (12.6%) followed by Euphorbiaceae and Apocynaceae 4 species each (6.4%) Solanaceae, Cyperaceae, Poaceae, Amaranthaceae, Mimoseaceae and Moraceae 3 species each (4.8%) and Meliaceae, Papilionaceae, Asclepiadaceae, Zygophyllaceae, Chenopodaceae, Rhamnaceae with 2 species each (3.1%). Rest of 16 families (1.5%) was represented by one species. Maximum plant species were used for fuel (17 species 27.4%) followed by shelter (12 species 19.3%) vegetable (6 species 9.6%) and fencing and furniture 5 species each (8.0%). Rests of families presented were less used. Most common plant parts used for the different ethnobotanical purposes were whole plant (32 species 50.7%), followed by stem (18 species 28.5%), roots (12 species 19%) and wood (5 species 7.9%).

Information regarding their botanical name, vernacular name, family, part used and their ethnobotanical uses werfe gathered. The people use plants and their parts such as branches, leaves, stem, wood, and fruits for various purposes in their daily life. Malla and Chhetri (2009) reported 57 species for various ethnobotanical purposes, 38 edible, 26 as fodder, 18 as wood and fuel, 7 for religious rituals, 5 for ornamental purposes. The ethnobotanical plants used as a fodder, fuel wood and timber wood from the forest. Qureshi *et al.* (2007) also reported 33 plant species belonging to 29 genera and 17 families. Barkatullah and Ibrar (2011) reported total of 169 species of 140 genera from 76 families were recorded from Malakand Pass Hills, District Malakand, Pakistan, during 2010.

Shinwari and Khan (1998) used *Amaranthus viridis* as vegetable which is similar to the study of Barkatullah *et al*. (2009) and Ibrar *et al*. (2007). Hussain *et al*. (1995), Hussain and Sher (1998), Sher *et al*. (2003) and (2004), Hussain *et al*. (2004) and (2005), Durrani *et al*. (2003), and Gilani *et al*. (2003) all reported many wild vegetable plants which are in use of local people. *Convolvulus arvensis*, *Cynodon dactylon*, *Fumaria indica* is used as fodder for animal which is similar to the study of Zabihulla *et al*. (2006), Jabeen *et al*. (2009) and Haq *et al*. (2010). The common wild fuel wood species include *Acacia modesta*, *Acacia nilotica, Melia azedarach and, Morus alba,* which is similar to the records of Ibrar *et al*. (2007) and Barkatullah *et al*. (2009) from other parts of Malakand division.

Table-1. Ethnobotanical study of Mohmand Agency

S. No.	Plants name	Family name	Local name	Parts uses	Uses
01	*Achyranthes aspera* L.	Amaranthaceae	Not known	Whole plant	The dried plant is used for burning purposes.
02	*Amaranthus viridis* L.	Amaranthaceae	Ganhar	Leaves	Local people used the plant leaves as vegetables (sag)
03	*Narcisus poeticus* Linn.	Amaryllidaceae	Guli nargus	Whole plant	Cultivated as ornamental.
04	*Rhazyia stricta. Degen.*	Apocynaceae	Ganderai	Root. stem and leaf	Locally the plants are collected, dried and used as a fuel.
05	*Nanorapus richinia* L.	Apocynaceae	Mezary	Leaves	Use for basket
06	*Caralluma edulis* Edgew.	Apocynaceae	Pamunkay	Whole plant	Local people used the plant as vegetables
07	*Nerium indicum* Mill.	Apocynaceae	Gundairay	Whole plant	Dried plant used as a fuel
08	*Calotropis procera* (Willd) R.Br.	Asclepiadaceae	Spalmy	Whole plant	Fuel
09	*Periploca aphylla* Decne.	Asclepiadaceae	Barrha or barra	Whole plant	Use as a fuel
10	*Xanthium strumarium* L.	Asteraceae	Gashkay	Whole plant	The dried plant used as a fuel.
11	*Silybum marianum* L.	Asteraceae	Mullacharchugh	Whole plant	Fuel
12	*Calendula arvensis* L.	Asteraceae	Zyer Gulley	Shoot	Fodder
13	*Conyza aegyptiaca*L.	Asteraceae	Degy wala	Stem and leaves	Fuel and Fodder.
14	*Silybum marianum* L.	Asteraceae	Ghani botay	Leaf, Stem and Seed	Fodder and fuel
15	*Eclipta alba* (L.) Ha	Asteraceae	Ganda botay	Stem and leaves	The plant is grazed by animals as fodder.
16	*Sonchus asper* L.	Asteraceae	Shodapai	Whole plant	Fodder
18	*Heliotropium europaeum* L.	Boraginaceae	Langaty	Whole plant	It is used as fodder for animals. And Dried stem ,leaves and branches is used for fuel
19.	*Cannabis sativa* L.	Cactaceae		Whole plant	The dried plant is used for burning purposes.
20.	*Stellaria media* (L.) Vill.	Caryophyllaceae	Not known	Whole plant	The plant is grazed by grazing animals.
21.	*Chenopodium album* L.	Chenopodiaceae	Chalwaye	Whole plant	As vegetables and Fodder
22.	*Chenopodium murale* L.	Chenopodiaceae	Sarmay	Whole plant	As vegetables and Fodder
23.	*Taraxicum officinale* Webber.	Compositaceae	Ziar guly	Whole plant	Fodder
24.	*Convolvulus arvensis* L.	Convulvulaceae	Perwatye	Whole plant	Fodder

25.	*Cyperus rotundus* L.	Cyperaceae	Dela	Whole plant	Fodder and fuel
26.	*Setariapumila* (Poir.) Roem. &Schult.	Cyperaceae	Wakhay	Whole plant	Fodder
27.	*Poaannua*L.	Cyperaceae	Kabal	Whole plant	Fodder and ornamental purpose
28.	*Ricinus communis* L.	Euphorbiaceae	Arunda	Stem and branches	The dried plants used as a fuel.
29.	*Mirabilis jalapa* Linn.	Euphorbiaceae	Gulabasi	Whole plant	Use as a ornamental.
30.	*Chrozophora tinctoria* L.	Euphorbiaceae	Sperkay	Root, leaf and stem	The dried plant is used for burning purposes.
31.	*Euphorbia helioscopia*. Linn	Euphorbiaceae	Ganda botay	Whole plant	The dried plant is used for burning purposes.
32.	*Lathyrus apica* L.	Fabaceae	Chelo	Plant leaves and flower	Local people used the plant leaves as vegetables (sag).
33.	*Fumaria indica* Haussn.	Fumariaceae		Whole plant	Fodder
34.	*Salvia moorcrftiana* Wall. ex Benth.	Lamiaceae	Khar dug	Whole plant	The dried plant is used for burning purposes.
35.	*Malva neglecta* Waller.	Miliaceae	Peshtary	Leaf and root	The plant is grazed by grazing animals. Local people used the plant leaves as vegetables (sag)
36.	*Acacia modesta* Wall.	Mimoceaceae	Palosa	Stem and branches	Local people used the plant as a shelter and fuel.
37.	*Acacia nilotica* (L.) Delile	Mimoceaceae	Kekar	Stem and branches	Fuel and Thatching
38.	*Melia azedarach* L.	Miliaceae	Shanday	Wood	Fuel and timber
39.	*Acacia nilotica* (L.) Delile.	Mimoceaceae	Kikar	Stem and branches	The stem of plant used as a shelter and fuel. The branch used for fencing
40.	*Broussonetia papyrifera* Vent.	Moraceae	Gul toot	Branch and stem	Wood of plant is used for burning purposes and use for shelter.
41.	*Morus alba* L.	Moraceae	Spin toot	Wood	Locally the plants are collected used for furniture ,Fuel and shelter
42.	*Morusnigra*L.	Moraceae	Toor toot	Wood	Locally the plants are collected used for furniture ,Fuel and shelter
43.	*Eucalyptus lanceolata* .M bieb.	Myrtaceae	Lachi	Whole plant	Stem and branches use for shelter and burning purposes.
44.	*Dalbergia sissoo*Roxb	Papilinoeaceae	Shawa	Wood	The stem of plant is use for furniture fuel and shelter.

45.	*Alhagi maurorum* Medik.	Papilionaceae	Azghakey	Whole plant	Fuel
46.	*Cymbopogon jwarancusa* (Jones) Schult.	Poaceae	Sargaray	Whole plant	Fuel and fodder
47.	*Cynodon dactylon* L.	Poaceae	Kabal	Leaf, stem & root	Fodder
48.	*Avena sativa* L.	Poaceae	Jamdar	Whole plant	Fodder
49.	*Desmostachya bipinnata* (L.) Stapf.	Poeceae	Drab	Whole plant	Fodder
50.	*Anagallis arvensis* L.	Primulaceae	Ghamaygulay	Whole plant	The plant is grazed by grazing animals.
51.	*Zizyphus jujuba*Mill.	Rhamnaceae	Baira	Stem and branches	The stem of plant used as a shelter and fuel .the berry is use as a human food. And also use for fencing.
52.	*Ziziphus nummularia* (Burm. F)wight & Arn	Rhamnaceae	Karkanra	Stem and branch	Wood of plant is used for burning purposes.
53.	*Popolus albb.*L.	Salicaceae	Supaidar	Wood	The stem of plant is use for furniture fuel and shelter.
54.	*Dodonea viscosa*(L.) Jacq.	Sapindaceae	Ghwarskay	Whole plant	Local people used the plant as a shelter and fuel.
55.	*Monothecea bsssuxifolia* (Falcs)	Sapotaceae	Gurgura	Stem , branches and fruits	As a shelter and fuel . The stem of plant used berry is use as a human food. And also use for fencing.
56.	*Aillanthus Altissima* SW.	Simaroubaceae	Dasi shanday	Stem and branches	Locally the plants are collected, dried and used as a fuel and shelter.
57.	*Withania coagulans* L.	Solanaceae	Khamezory	Whole plant	The dried plant used as a fuel.
58.	*Solanum surrattense*Burm.	Solanaceae	Maraghoni	Whole plant	Fuel
59.	*Withania somnifera* L.	Solanaceae	Kotilal	Leaf, stem & Fruits	Fodder
60.	*Tamarix aphylla* L.	Temaraceae	Ghaz	Leaf and stem	Fuel and timber
61.	*Vitex negundo*L.	Verbenaceae	Marwandy	Whole plant	The dried plant used as a fuel.
62.	*Peganum harmala* L.	Zygophyllaceae	Spalanay	Leaf, stem and leaves	The plant is grazed by grazing animals.
63.	*Tribulus terrestris* L.	Zygophyllaceae	Marcundy	Whole plant	Fuel and fodder

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