

ETHNOBOTANICAL STUDIES OF WEEDS IN DISTRICT MARDAN, PAKISTAN

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ABSTRACT

Ethno-botanical study was conducted at village Ikrampur (Baizokharki) of district Mardan, Pakistan. A total of 68 plant species, belonging to 34 families and 63 genera were reported as used by the local farming community for different purposes like fuel, fodder, furniture, vegetable, shelter, ornamental and others. Most species belonged to Poaceae and Asteraceae (6 spp. each) followed by Labiatae (5), Moraceae and Solanaceae (4 spp. each), Apocynaceae and Mimosaceae (3 spp. each). The Asclepiadaceae, Euphorbiaceae, Chenopodiaceae, Caryophyllaceae, Rhamnaceae, Zygophyllaceae, Brassicaceae, Malvaceae, Myrtaceae and Papilionaceae (2 spp. each), while rest of the 17 families were represented by only 1 species each (1.47%). Whole plants were the most commonly used part of 41 species (60.29%), followed by leaves of 15 species (22.05%), stem of 14 species (20.58%), dry and fresh branches of 10 species (14.70%), the fresh or young branches are used for making baskets. While the root and fruit of 2.94% of the total species are used for different purposes. The study provided very useful information regarding weeds for the vegetation managers in terms of developing effective weed control and utilization programs in the studied location. Further studies are recommended to conduct the same type of surveys to collect more information helpful for researchers dealing with weed science and medicinal herbs.

Key words: Ethnobotanical study, Mardan, Pakistan, weeds.

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INTRODUCTION

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The use of plants for various household needs has been the common practice of the people in every ecological condition. However, this indigenous knowledge is specific to specific areas. The use of the same plant can be different in two different localities and similarly two or more different plants can be used for the same purpose in different localities. This is the indigenous knowledge kept only by the inhabitants of a specific locality.

Ethnobotany is the study of the relationship between plants and people. It is the study of a particular culture and region and the use of local plants by the local people (Prance *et al.*, 1987). The science of ethnobotany has progressed from a documentation science to a more practical one in the last 100 years with emphasis on the usage of sustainable plant resources and their conservation. In fact, Pakistan has got diverse habitats associated with different flora due to the diverse climates, multiple ecological regions and soil conditions (Ali and Qaiser, 2009).

Ikrampur is also well known as Baizokharki. The latitude of Ikrampur is 34°.4966736 and 72°.0109411 is its longitude. Ikrampur is placed in the north east belt of Mardan. Ikrampur is on the boundary of Malakand Agency.

Summer season is extremely hot. The high temperature reaches its maximum up to 40-45 degrees in the months of June-July. Maximum rainfall occurs in July and August. Temperature goes down in the month of October up to 25 degrees. The winter season is very cold and the extreme low temperature is recorded in the month of December up to 10 degrees centigrade. The study area is covered by a population of about 25,000 people. It is very passive, quiet and toxic waste free area for life. Ikrampur is comprised of Torzai, Yousafzai, Dalazak, Baddi, Shalmani and miscellaneous.

The study was thus conducted aimed at finding out different flora growing in the target area. The other objective was to find out their ethnobotanical use by the local farming community.

MATERIALS AND METHODS

Collection

Weeds species were collected in various periods of 2015. Numerous learning trips were organized to village to collect the weeds specimens. Whole plants species were gathered. Ethnobotanical data were noted on spot from the local's experts (preferably old peoples) with help of questionnaires.

Maintenance and Documentation

Plants species was pressed properly, dried and well-kept following standard technique. Species were reserved in large size paper along with Naphthalene to shun from the fungus attack. Plants

materials were accurately fixed on stock size herbarium pages and succumbed to the herbarium of Bacha Khan University, Charsadda, Khyber Pakhtunkhwa, Pakistan.

RESULTS AND DISCUSSION

Traditional knowledge of the area (Baizokharki, Mardan district) has tremendous ethnobotanical importance. Ethno-botanical information of 63 genera and 68 species belonging to 34 families is used for different purposes. Plants are reported, along with the vernacular names, part of the plants used, family name and different ethno-botanical usage. The residents of the village chiefly hinge on plants for different requirements due to unpaid of rudimentary services such as gas and coal.

These included 37 species (54.41%) for fuel, 26 species (38.23%) for fodder, 11 species (16.17%) for furniture, 9 species (13.23%) for vegetable, 5 species (7.35%) for shelter, and 3 species (4.41%) for ornamental. Among the 34 families, Poaceae and Asteraceae were the leading families represented by 6 species each (8.82%), followed by Labiatae represented by 5 species (7.35%), Solanaceae and Moraceae with 4 species each (5.88%), Apocynaceae and Mimosaceae by 3 species each (4.41%), Chenopodiaceae, Rhamnaceae, Caryophyllaceae, Brassicaceae, Zygophyllaceae, Euphorbiaceae, Myrtaceae, Malvaceae, Papilionaceae and Asclepiadaceae having 2 species each (2.94%). The rest of the 17 families contributed one species each (1.47%). Khan *et al.* (2016) reported 200 wild plant species from their study area which was used by the local people. Out of them 116 (58%) species were used as fodder; 67 (33.5%) species for fuel purpose; 66 (33%) species as medicinal plants; 14 (7%) as vegetables; 11(5.5%) species for thatching purpose. The woody and fencing species were 8 (4%) each.

Herbaceous vegetation were represented by 38 species (55.88%), trees 15 species (22.05%) and shrubs 15 species (22.05%). Whole plants were the most commonly used (41 species 60.29%), followed by leaves (15 species 22.05%), stem and leaves (14 species 20.58%), branches (10 species 14.70%) and root and fruit (2 species each (2.94%).

The people used branches of the *Morusalba*, *Morusnigra* and *Eucalyptus camadulensis* for making baskets. Thorny branches of *Acacia modesta*, *Acacia nilotica* and *Ziziphusjuba* are used for hedge. The fruit of *Ficuscarica*, *Monotheca buxifolia* and *Ziziphus jujube* are used as human food. The *Mentha longifolia* and *Mentha spicata* are used in salad. Malla and Chhetri (2009) described 57 for several ethnobotanical tenacities, 38 edible, 26 as fodder, 18 as wood and fuel, seven for religious believes and five for ornamental purposes.

Present study showed 37 species (54.41%) used for fuel, like the people of Salarzai valley (Sher et al., 2014), Central Punjab (Zereen and Khan, 2012), Neelum valley Kashmir (Mahmood et al., 2011c). Plants were also used as fodder, fuel wood and timber wood (Shinwari and Khan, 1998). Human existence, raising and cultivation exerts enormous stress on vegetation and results in environmental degradation (Ahmad et al., 2003). *Amaranthus viridis* is used for vegetal purpose which is in line to the survey of Barkatullah et al. (2009) and Ibrar et al. (2007). *Convolvulus arvensis*, *Cynodon dactylon*, *Fumaria indica* for fodder purpose by animals, similar to survey of Zabihulla et al. (2006), Jabeen et al. (2009) and Haq et al. (2010). *Acacia modesta*, *Acacia nilotica*, *Melia azedarach* and *Morus alba* were used for timber purposes having similarity to the records of Ibrar et al. (2007) and Barkatullah et al. (2009) from the Malakand division.

Table-1. Ethnobotanical plants of Sardara Banda, village Ikrampur (Baizokharki), Mardan

S. No.	Plants name	Family name	Local name	Parts uses	Uses
1.	<i>Justicia adhatoda</i> L.	Acanthaceae	Baikerh	Whole plant	Plant is used for fuel
2.	<i>Amaranthus viridis</i> L.	Amaranthaceae	Ganhar	Leaves	Plant leaves used as vegetables. The plant used as animal fodder
3.	<i>Neriu molender</i> Linn	Apocynaceae	Ganderay	Whole plant	Locally the plant is use for ornamental purpose and fuel
4.	<i>Dodonea viscosa</i> (L.) Jacq.	Apocynaceae	Ghawaraskay	Whole plant	Used as a hedge. Used as a fuel, ornamental and for shelter.
5.	<i>Caralluma edulis</i> Edgew. Benth. exHook.f.	Apocynaceae	Pamunkay	Whole plant	Used for vegetables.
6.	<i>Calotropis prosera</i> Acit.	Asclepiadaceae	Spalmay	Root, stem and leaf	Ash is used to give color to cloth and also for fuel.
7.	<i>Periploca aphylla</i> Decne.	Asclepiadaceae	Barrhara	Whole plant	Locally used as a fuel.
8.	<i>Asparagus officinalis</i> L.	Asparagaceae	Tindonray	Branches	Used for vegetables
9.	<i>Xanthium strumarium</i> L.	Asteraceae	Gishkay	Whole plant	Fuel purpose
10.	<i>Echinopse chinotus</i> Roxb.	Asteraceae	Kariza	Whole plant	Locally used for fuel.
11.	<i>Sunchus asper</i> L.	Asteraceae	Shodapai	whole plant	Used as fodder for animals.
12.	<i>Parthenium hysterophorus</i> L.	Asteraceae	Lewanai Bang	whole plant	Plant is collected, dried and used as fuel, grazed by cattle as fodder
13.	<i>Silybum marianum</i> L. Geartn.	Asteraceae	Mullacharchugh	Whole plant	For fodder purpose
14.	<i>Calendula arvensis</i> L.	Asteraceae	Zyargulle	Whole plant	Fodder
15.	<i>Heliotropium europaeum</i> L.	Boraginaceae	Spenguley	Whole plant	Fuel
16.	<i>Coronopus didymus</i> M. Bieb.	Brassicaceae	Gandabotay	Whole plant	Fodder
17.	<i>Eruca sativa</i> Mill.	Brassicaceae	Jumama	Whole plant	Fodder
18.	<i>Cannabis sativa</i> L.	Canabaceae	Bhang	Whole plan	Fuel
19.	<i>Stellaria media</i> (L.) Vill.	Caryophyllaceae	Not known	Whole plant	Fodder
20.	<i>Silene conidia</i> L.	Caryophyllaceae	Mangtay	Whole plant	Fodder
21.	<i>Chenopodium album</i> L.	Chenopodiacea	Chalwaye	Whole plant	Leaves as vegetables and fodder
22.	<i>Chenopodium murale</i> L.	Chenopodiacea	Sarmey	Whole plant	Fodder
23.	<i>Convolvulus arvensis</i> L.	Convolvulaceae	Perwatye	Whole plant	Fodder
24.	<i>Ricinus communies</i> L.	Euphorbiaceae	Aranda	Whole plant	Fuel
25.	<i>Euphorbia helioscopia</i> L.	Euphorbiaeae	Mandanro	whole plant	Fuel
26.	<i>Lathyrus aphaca</i> L.	Fabaceae	Chelu	Whole plant	Fodder

27.	<i>Albizia lebbek</i> (L.) Benth.	Fabaceae	Sareekh	Stem & branches	Furniture and fuel
28.	<i>Fumaria indica</i> (Hauskn.) Pugsley	Fumaraceae	Papra	Whole plant	Fodder
29.	<i>Mentha longifolia</i> (L.) L.	Labiatae	Velanay	Leaves	Used in salad.
30.	<i>Mentha spicata</i> L.	Labiatae	Podina	Plant and leaves	Used as ornamental and leaves used in salad.
31.	<i>Salvia moorcroftiana</i> Wall. exBenth.	Labiatae	Khar Dug	Whole plant	Dried plant is used as fuel.
32.	<i>Colebrookea oppositifolia</i> Sm.	Labiatae	ZangaliBaiker	Whole plant	Dried and used as a fuel.
33.	<i>Otostegialambata</i> (Benth.) Boiss.	Labiatae	SpenAzghay	Whole plant	Dried and used as a fuel. It is collected and used as a hedge.
34.	<i>Dalbergiasissoo</i> Roxb.	Leguminaceae	Shawa	Stem & branches	Stem used for making furniture and branches used for fuel.
35.	<i>Grewiaoptiva</i> J.R.Drumm.exBurret	Malvaceae	Pastawoony	Stem and leaves	Fuel and fodder
36.	<i>Malvaneglecta</i> Wallr.	Malvaceae	Parenak	Leaves	Vegetable
37.	<i>Meliaazedarech</i> L.	Meliaceae	ToraShandai	Root, stem and leaves	Fuel and Furniture
38.	<i>Acacia modesta</i> Wall.	Mimosaceae	Palosa	Stem & branches	Fuel, furniture and for fencing. The dried stem are making of roofs.
39.	<i>Acacia nilotica</i> (L.) Willd.ex Del.	Mimosaceae	Kikar	Stem & branches	Used as for fuel and for making furniture and for fencing.
40.	<i>Broussonetia papyrifera</i> (L.) L	Moraceae	Gultoot	Whole plant	The plant is used for fuel.
41.	<i>Morus alba</i> L.	Moraceae	Toot	Stem&branches	The plant stem is used for furniture and branches for basket
42.	<i>Ficus carica</i> L.	Moraceae	Inzar	Fruit	Fruit is edible and used for shelter
43.	<i>Morus nigra</i> L.	Moraceae	Toor toot	Stem and fresh branches	Furniture and Fuel
44.	<i>Populus indica</i> L.	Myrtaceae	Sufeedad	whole plant	Used for Fuel, shelter, furniture
45.	<i>Eucalyptus camaldulensis</i> Dehnh.	Myrtaceae	Lachi	branches and stem	Fuel and furniture Wood used for making bridge/roofs
46.	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Ensut	Whole plant	Fodder and fuel
47.	<i>Trifolium alexendrianum</i> L.	Papilionaceae	Shotal	Leaf & stem	It is grazed by grazing animals as fodder.
48.	<i>Medicago polyorpha</i> L.	Papilionaceae	Peeshtare	Leaves	It is used as vegetable.
49.	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Kabal	Whole plant	Used as fodder for animals.

50.	<i>Cymbopogon distans</i> (Nees ex Steud.) W. Watson	Poaceae	Sargaray	Whole plant	The plant used by grazing animals as fodder. And also for fuel.
51.	<i>Cyperus rotundus</i> L.	Poaceae	Dela	Whole plant	Fodder and fuel.
52.	<i>Avena sativa</i> L.	Poaceae	Jamdar	Whole plant	Fodder.
53.	<i>Desmostachya bipinnata</i> (L.) Stapf.	Poaceae	Drab	Whole plant	Fodder.
54.	<i>Apluda mutica</i> L.	Poaceae	Wahoo	Whole plant	It serves as fresh and dry fodder.
55.	<i>Rumex dentatus</i> L.	Polygonaceae	Shalkhy	Leaves	Used as vegetable (saag) and also used as a grass for cattles.
56.	<i>Portulaca oleracea</i> L.	Portulacaceae	Warharay	Leaves	Vegetable and fodder
57.	<i>Anagalis arvensis</i> L.	Primulaceae	Ghamaygulay	Whole plant	Fodder.
58.	<i>Sager etiathea</i> (Osbeck) M.C.	Rhamnaceae	Mamanra	Whole plant	Fuel.
59.	<i>Ziziphus jujube</i> Mill	Rhamnaceae	Baira	Stem and branches	Branches used for hedge and stem used in furniture and for fuel.
60.	<i>Monothecea buxifolia</i> (Falc) A. DC.	Sapotaceae	Gurgura	Stem, fruit and branches	Used as fuel, food and for shelter
61.	<i>Verbascum thapsus</i> L.	Scrophulariaceae	KharGhawag	Whole plant	Fuel
62.	<i>Ailanthus altissima</i> SW.	Simaroubaceae	DasiShandai	Stem	Fuel and making furniture
63.	<i>Datura alba</i> Rumph ex Nees.	Solanaceae	Batora	Whole plant	Fuel
64.	<i>Solanum surratense</i> Burm. F	Solanaceae	Maraghonay	Whole plant	Fuel
65.	<i>Withania somnifera</i> L.	Solanaceae	Kotilal	Plant leaves	Fodder
66.	<i>Solanum nigrum</i> L.	Solanaceae	Kachmachu	Leaves	Used as for vegetables (saag)
67.	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Merkundai	Leaves	Plant is used by grazing animals.
68.	<i>Fagonia indica</i> Burm.F.	Zygophyllaceae	Azghakey	Whole plant	Dried plants are used as fuel.

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