ETHNOBOTANICAL STUDIES OF WEEDS IN DISTRICT MARDAN, PAKISTAN

Subhan Uddin¹, Mukhtiar Ali², Sajjad Ali², Salim Shah³, Sami Ullah⁴ and Zahid Hussain⁵

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.


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 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 Ziziphusjujuba 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

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

28. *Fumaria indica* (Hausskn.) Pugsley | Fumaraceae | Papra | Whole plant | Fodder


30. *Mentha spicata* L. | Labiatae | Podina | Plant and leaves | Used as ornamental and leaves used in salad.

31. *Salvia moorcroftiana* Wall. exBenth. | Labiatae | Khar Dug | Whole plant | Dried plant is used as fuel.

32. *Colebrookea oppositifolia* Sm. | Labiatae | ZangaliBaiker | Whole plant | Dried and used as a fuel.

33. *Otostegia amambata* (Benth.) Boiss. | Labiatae | SpenAzghay | Whole plant | Dried and used as a fuel. It is collected and used as a hedge.

34. *Dalbergia sissoo* Roxb. | Leguminaceae | Shawa | Stem & branches | Stem used for making furniture and branches used for fuel.

35. *Grewia optiva* J.R.Drumm.exBurret | Malvaceae | Pastawoony | Stem and branches | Fuel and fodder


37. *Melia azedarach* L. | Meliaceae | ToraShandai | Root, stem and leaves | Fuel and Furniture

38. *Acacia modesta* Wall. | Mimosaceae | Palosa | Stem & branches | Fuel, furniture and for fencing. The dried stem are making of roofs.


40. *Broussonetia papyrifera* (L.) L | Moraceae | Gultoot | Whole plant | The plant is used for fuel.

41. *Morus nigra* L. | Moraceae | Toor toot | Stem & branches | The plant stem is used for furniture and branches for basket

42. *Ficus carica* L. | Moraceae | Inzar | Fruit | Fruit is edible and used for shelter

43. *Morus alba* L. | Moraceae | Toot | Stem & branches | The plant stem is used for furniture and branches for basket

44. *Populus indica* L. | Myrtaceae | Sufeedad | whole plant | Used for Fuel, shelter, furniture

45. *Eucalyptus camaldulensis* Dehnh. | Myrtaceae | Lachi | branches and stem | Fuel and furniture

46. *Boerhavia diffusa* L. | Nyctaginaceae | Ensut | Whole plant | Fodder and fuel

47. *Trifolium alexandrium* L. | Papilionaceae | Shotal | Leaf & stem | It is grazed by grazing animals as fodder.

48. *Medicago polymorpha* L. | Papilionaceae | Peeshtare | Leaves | It is used as vegetable.

49. *Cynodon dactylon* (L.) Pers. | Poaceae | Kabal | Whole plant | Used as fodder for animals.
<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Plant</th>
<th>Family</th>
<th>Common Name</th>
<th>Part Used</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.</td>
<td><em>Cymbopogon distans</em> (Nees ex Steud.) W. Watson</td>
<td>Poaceae</td>
<td>Sargaray</td>
<td>Whole plant</td>
<td>The plant used by grazing animals as fodder. And also for fuel.</td>
</tr>
<tr>
<td>51.</td>
<td><em>Cyperus rotundus</em> L.</td>
<td>Poaceae</td>
<td>Dela</td>
<td>Whole plant</td>
<td>Fodder and fuel.</td>
</tr>
<tr>
<td>52.</td>
<td><em>Avena sativa</em> L.</td>
<td>Poaceae</td>
<td>Jamdar</td>
<td>Whole plant</td>
<td>Fodder.</td>
</tr>
<tr>
<td>54.</td>
<td><em>Apluda mutica</em> L.</td>
<td>Poaceae</td>
<td>Wahoo</td>
<td>Whole plant</td>
<td>It serves as fresh and dry fodder.</td>
</tr>
<tr>
<td>55.</td>
<td><em>Rumex dentatus</em> L.</td>
<td>Polygonaceae</td>
<td>Shalkhy</td>
<td>Leaves</td>
<td>Used as vegetable (saag) and also used as a grass for cattle.</td>
</tr>
<tr>
<td>56.</td>
<td><em>Portulaca oleracea</em> L.</td>
<td>Portulaceae</td>
<td>Warharay</td>
<td>Leaves</td>
<td>Vegetable and fodder</td>
</tr>
<tr>
<td>57.</td>
<td><em>Anagalis arvensis</em> L.</td>
<td>Primulaceae</td>
<td>Ghamaygulay</td>
<td>Whole plant</td>
<td>Fodder.</td>
</tr>
<tr>
<td>59.</td>
<td><em>Ziziphus jujube</em> Mill</td>
<td>Rhamnaceae</td>
<td>Baira</td>
<td>Stem and branches</td>
<td>Branches used for hedge and stem used in furniture and for fuel.</td>
</tr>
<tr>
<td>60.</td>
<td><em>Monothecea buxifolia</em> (Falc) A. DC.</td>
<td>Sapotaceae</td>
<td>Gurgura</td>
<td>Stem, fruit and branches</td>
<td>Used as fuel, food and for shelter</td>
</tr>
<tr>
<td>61.</td>
<td><em>Verbascum thapsus</em> L.</td>
<td>Scrophulariaceae</td>
<td>KharGhawag</td>
<td>Whole plant</td>
<td>Fuel</td>
</tr>
<tr>
<td>62.</td>
<td><em>Ailanthus altissima</em> SW.</td>
<td>Simaroubaceae</td>
<td>DasiShandai</td>
<td>Stem</td>
<td>Fuel and making furniture</td>
</tr>
<tr>
<td>63.</td>
<td><em>Datura alba</em> Rumph ex Nees.</td>
<td>Solanaceae</td>
<td>Batora</td>
<td>Whole plant</td>
<td>Fuel</td>
</tr>
<tr>
<td>64.</td>
<td><em>Solanum suratense</em> Burm. F</td>
<td>Solanaceae</td>
<td>Maraghanay</td>
<td>Whole plant</td>
<td>Fuel</td>
</tr>
<tr>
<td>65.</td>
<td><em>Withania somnifera</em> L.</td>
<td>Solanaceae</td>
<td>Kotilal</td>
<td>Plant leaves</td>
<td>Fodder</td>
</tr>
<tr>
<td>66.</td>
<td><em>Solanum nigrum</em> L.</td>
<td>Solanaceae</td>
<td>Kachmachu</td>
<td>Leaves</td>
<td>Used as for vegetables (saag)</td>
</tr>
<tr>
<td>67.</td>
<td><em>Tribulus terrestris</em> L.</td>
<td>Zygophyllaceae</td>
<td>Merkundai</td>
<td>Leaves</td>
<td>Plant is used by grazing animals.</td>
</tr>
<tr>
<td>68.</td>
<td><em>Fagonia indica</em> Burm.F.</td>
<td>Zygophyllaceae</td>
<td>Azghakey</td>
<td>Whole plant</td>
<td>Dried plants are used as fuel.</td>
</tr>
</tbody>
</table>
REFERENCES CITED


