



Available online freely at www.isisn.org

Bioscience Research

Print ISSN: 1811-9506 Online ISSN: 2218-3973

Journal by Innovative Scientific Information & Services Network



RESEARCH ARTICLE

BIOSCIENCE RESEARCH, 2020 17(4): 4009-4014.

OPEN ACCESS

Ethnobotanical profile of plants of District Pishin, Balochistan, Pakistan

Rafiqullah¹, Muhammad Faheem Siddiqui^{*2}, Sirajudin³, Ghulam Jelani³ and Muhammad Ajaib^{*4}

¹Balochistan Residential College Khuzdar, Balochistan **Pakistan**

²Department of Botany, University of Karachi **Pakistan**

³Department of Botany, University of Peshawar, Peshawar **Pakistan**

⁴Department of Botany, Mirpur University of Science and Technology (MUST), Mirpur-10250 (AJK), **Pakistan**

*Correspondence: majaibchaudhry@yahoo.com; mfsiddiqui@uok.edu.pk Received 09-10-2020, Revised: 26-11-2020, Accepted: 02-12-2020 e-Published: 20-12-2020

The current study was conducted to collect ethnobotanical data through interview and personal observation in District Pishin Balochistan Pakistan. The current study was carried out to record traditional uses of plants during summer 2016. We noted the traditional use of 270 plants belonging to 65 families. Out of 270 species and 197 genera among these species the largest ethnobotanical class was of 160 species which were used as fodder and forage followed by 60 medicinal species, 46 fuel wood species, 45 plant species were used for more than three purposes (miscellaneous), 19 species were used as vegetable, 6 species yielded timber wood and the smallest ethnobotanical class was of ornamental plants which consisted of 4 species. The area is under extreme high pressure of cutting and overgrazing, which have decreased the renewal of various important plants. Actual ecological care is needed to preserve these plants and save ethnobotanical resources for the upcoming generations.

Keywords: Medicinal plants, District Pishin, Ethnobotany

INTRODUCTION

Pishin is positioned forty-five km from the principle Quetta city (Fig. 1). The district lies between 30 21 to 31 13 north latitudes and 66 46 to 67 50 east longitudes. The existing Pishin is the modernized shape of the phrase fushang, which is a vintage persian for the Arabic word of Fushang. Delusion attributes the starting place of the name to a son of the Emperor Afrasiab fushang, geographically. It is bounded on the north by Afghanistan and Killa Saifullah district, at the east by using Killa Saifullah and Loralai districts, on the south via Ziarat and Queeta districts and at the west by way of Killa Abdullah district. The total area of the district is 7819 square kilometers. The climate of the district is heat in summer time but very bloodless in winter.

Maximum of the rainfall is irregular in iciness. The common rainfall is 147.4 mm (Table 1) however; it's miles scanty and abnormal. Snowfalls occur for the duration of the months of January and February July is the hottest, respectively. January is the coldest month with suggest maximum and minimum temperature of about 10°C and -3°C, respectively. However, the humidity is 32.2. Some floristic studies had been executed by using diverse people at the vegetation of Pishin and adjacent areas of Balochistan i.e. (Ajaib et al. 2013; Fazal et al. 2010; Khan et al. 2013; Qureshi and Khan, 1971 and Marwat et al. 2013). It's far mentioned that studies at the Pishin plant life of the region have now not been performed within the past consequently;

Table 1: Climatic data of study sites

Mean monthly rainfall (mm) (2016-2017)													
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Avg
2016	15.0	9.0	43.0	24.0	5.1	0.1	7.1	1	1.0	3.0	34.1	5.0	147.4
Mean monthly temperature °C (2016-2017)													
Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
Max	12.8	11.5	19.5	24.8	31.4	35.7	37.2	36.1	32.2	26.4	21.2	14.7	
Min	-3.6	-1.8	5.6	9.4	12.5	18.6	22.7	21.2	14.3	6.4	1.2	-3.2	

Source: Pakistan Meteorological Department, Quetta.

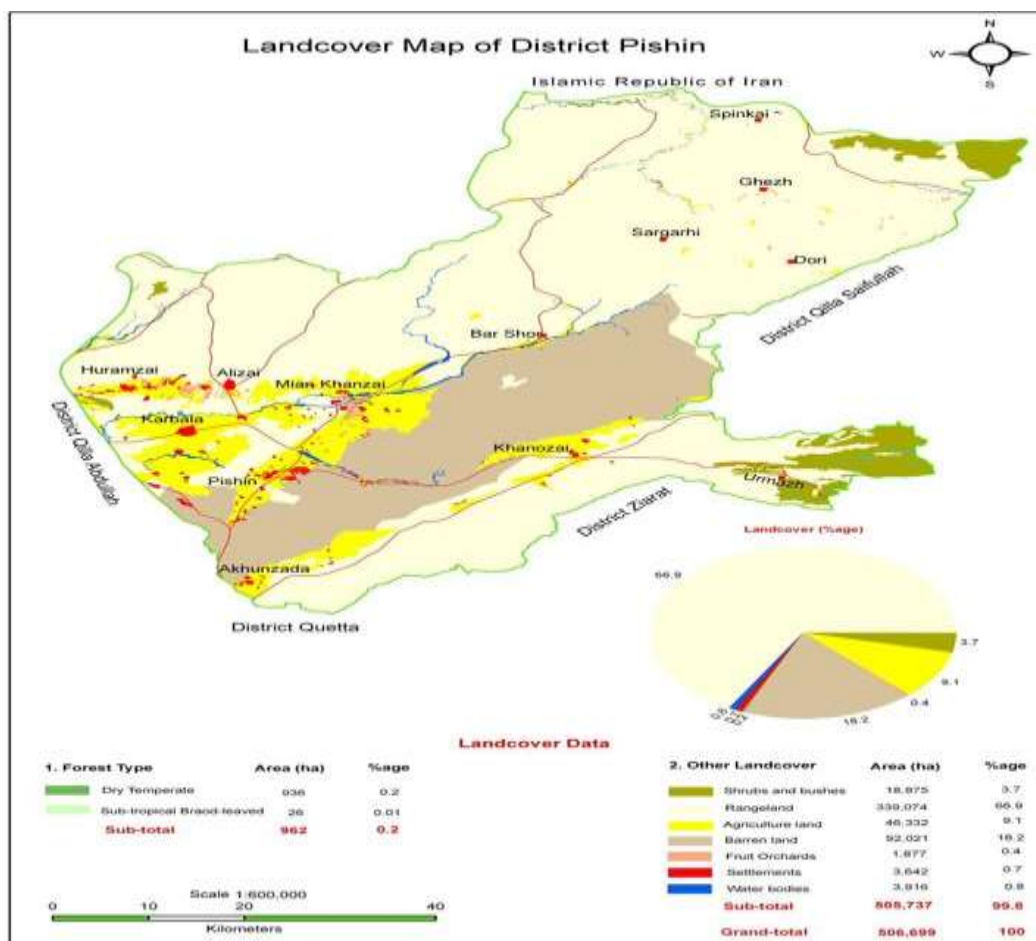


Figure 1: study area Map of District Pishin, Balochistan

The existing studies have been conducted to prepare a checklist of the plant species growing within the Pishin for future studies.

MATERIALS AND METHODS

Subject trips have been carried out into district Pishin at some point of 2016-2017 to collect ethnobotanical vegetation for the documentation of neighborhood knowledge. Records have been gathered from neighborhood Hakims, Midwives, and traditional healers via half-filled comments

preformed, Botanical names creditors, nearby names, element used, disease/fitness issues and coaching of the plants are given. Flowers had been recognized with the assist of available plants (Nasir and Ali, 1971-1994, Ali and Qaiser, 1995-2010).

Results and Discussion

Ethnobotanical study of plants clearly showed that all the 270 plant species reported from district Pishin, they had some kind of traditional or vernacular uses in the District (Table S1, Fig. 2 and 3). Among 270 plant species belonging to 65 families out of which family Asteraceae is the most frequent family having 35 species (Table 2). The largest ethnobotanical class was of 160 (59.25%) species which were used as fodder and forage followed by 60 (22.22%) medicinal species, 46 (17.03%) fuel wood species, 45 (16.66%) plant species were used for more than three purposes (miscellaneous), 19 species (7.03%) were used as vegetable, 6 species (2.22%) yielded timber wood and the smallest ethnobotanical class was of ornamental plants which consisted of 4 species (1.48%) (Fig. 3).

The important fodder and forage plants of the area are *Acantholimon* spp., *Achillea santolina*, *Aerva javanica*, *Alhagi maurorum*, *Allium* spp., *Astragalus* spp., *Bromus danthoniae*, *Cynodon dactylon*, *Heteropogon contortus*, *Oxalis corniculata*, *Tamarix* spp., *Xanthium strumarium*, *Saccharum griffithii* and *Setaria verticillata*. The important medicinal plants of the district are *Adonis aestivalis*, *Amaranthus viridis*, *Artemisia maritima*, *Cannabis sativa*, *Chenopodium album*, *Ephedra intermedia*, *Glycyrrhiza glabra*, *Rumex dentatus*, and *Ziziphus mauritiana*. The important fuel wood plants of the area are *Acacia nilotica*, *Ailanthus altissima*, *Caragana ambigua*, *Centaurea bruguieriana*, *Cousinia* spp., *Juniperus excelsa* and *Populus euphratica*. The important timber plants of the area are *Ailanthus altissima*, and *Salix alba*. The plants which had more than three uses are *Acanthophyllum squarrosum*, *Allium cepa*, *Cyperus rotundus*, *Euphorbia falcate*, *Malva neglecta*, *Salix acmophylla* and *Zaleya pentandra*. The important of ornamental plants are *Anemone biflora*, *Celosia argentea* and *tulipa clusiana*. The important vegetable and fruit plants are *Buglossoides arvensis*, *Cardaria chalepense*, *Crambe cordifolia*, *Eremurus stenophyllus* and *Vitis vinifera*, *Morus alba*. *Pistacia* sp.

The consequences indicate that the location is climatically and ecologically dry temperate i.e.

Excessive species richness and low abundance and that is supported by majority of species (59.25%) used as fodder and forage. These findings are line with Durrani & Hussain (2005) who stated that during Harboi rangeland most important utility was of fodder flora. Humans are using flora since the sunrise of civilization or from unmemorable times to deal with specific illnesses. This led to the establishment of the nearby knowledge of vegetation. This local expertise paperwork the premise of modern plant based totally industry mainly allopathic drug treatments round the sector (Ahmad et al. 2006). Due to the fact the beginning of civilization, human beings had been used flowers as medicine for treating special sicknesses.

In the current study 22.22 % of the total plant species had some kind of medicinal uses due to easy availability. Most of the present drugs have been derived from plant sources. In Dir (Manan et al. 2007; Hazrat et al. 2010) and Bunir (Shah & Hussain, 2008) plants are used locally for treating various ailments. Durrani & Hussain (2005) concluded that medicinal species were most important utility in Harboi rangeland. All these data support the current study and this local knowledge is transferred from generations to generations (Ajaib et al. 2020; Mahmood et al. 2011; Maqbool et al. 2019a).

Moreover, the population of the district additionally uses plant life for his or her food, safe haven, fodder, and different cultural functions. The flora and plant life as whole of the district is under huge grazing strain as similar reports were presented by Maqbool et al. (2019b) during the evaluation of ethnomedicinal status of local communities of District Bhimber and UK migrants. Many floras have more than one makes use of and such flowers are greater susceptible e.g.

stenophyllu, *Caragana ambigua*, *Juniperus*, *Astragalus auganus* and *Sophora mollis*. There's dire want to create attention among locals, educate them about consequences and convince them for conservation of valuable flowers as reported by Altaf et al. (2019) while documentation of ethnomedicinal survey of Wazirabad, Punjab Pakistan.

Table 2: Major role of plant families in ethno flora of the District Pishin

S: No	Family	Genera	Species
1	Acanthaceae	2	2
2	Aizoaceae	2	2
3	Alliaceae	1	4
4	Amaranthaceae	5	5
5	Amaryllidaceae	1	1
6	Anacardiaceae	1	2
7	Apiaceae	4	4
8	Apocynaceae	2	2
9	Arecaceae	1	1
10	Asclepiadaceae	4	4
11	Asphodelaceae	1	2
12	Asteraceae	23	35
13	Berberidaceae	1	1
14	Boraginaceae	5	8
15	Brassicaceae	15	21
16	Cannabaceae	1	1
17	Capparidaceae	2	2
18	Caryophyllaceae	7	12
19	Chenopodiaceae	7	9
20	Convolvaceae	1	2
21	Cucurbitaceae	2	2
22	Cupressaceae	1	1
23	Cuscutaceae	1	1
24	Cyperaceae	1	2
25	Dipsacaceae	1	1
26	Ephedraceae	1	1
27	Euphorbiaceae	4	7
28	Fumariaceae	1	1
29	Geraniaceae	1	1
30	Iridaceae	2	3
31	Lamiaceae	7	8
32	Leonticaceae	1	1
33	Liliaceae	2	3
34	Malvaceae	1	2
35	Mimosaceae	2	2
36	Meliaceae	1	1
37	Moraceae	2	3
38	Oleaceae	2	2
39	Oxalidaceae	1	1
40	Papaveraceae	3	4
41	Papilionaceae	11	23
42	Pinaceae	1	1
43	Plantaginaceae	1	1
44	Plumbaginaceae	1	3
45	Poaceae	27	32
46	Polygonaceae	4	5
47	Punicaceae	1	1
48	Ranunculaceae	3	4
49	Resedaceae	1	1
50	Rhamnaceae	1	1

51	Rosaceae	1	1
52	Rubiaceae	2	2
53	Rutaceae	1	2
54	Salicaceae	2	4
55	Sapindaceae	1	1
56	Scrophulariaceae	2	2
57	Simaroubaceae	1	1
58	Solanaceae	2	3
59	Tamaricaceae	1	5
60	Urticaceae	1	1
61	Valerianaceae	1	1
62	Verbenaceae	1	1
63	Violaceae	1	1
64	Vitaceae	2	2
65	Zygophyllaceae	4	4
Total		197	270

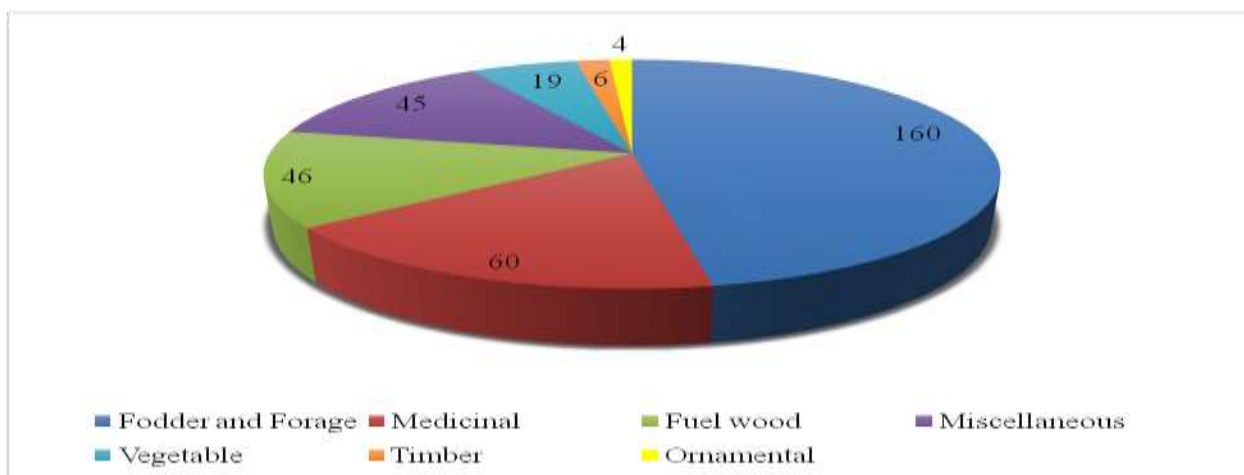


Figure 2: Pie Chart Showing Ethnobotanical Use of Various Plants of District Pishin

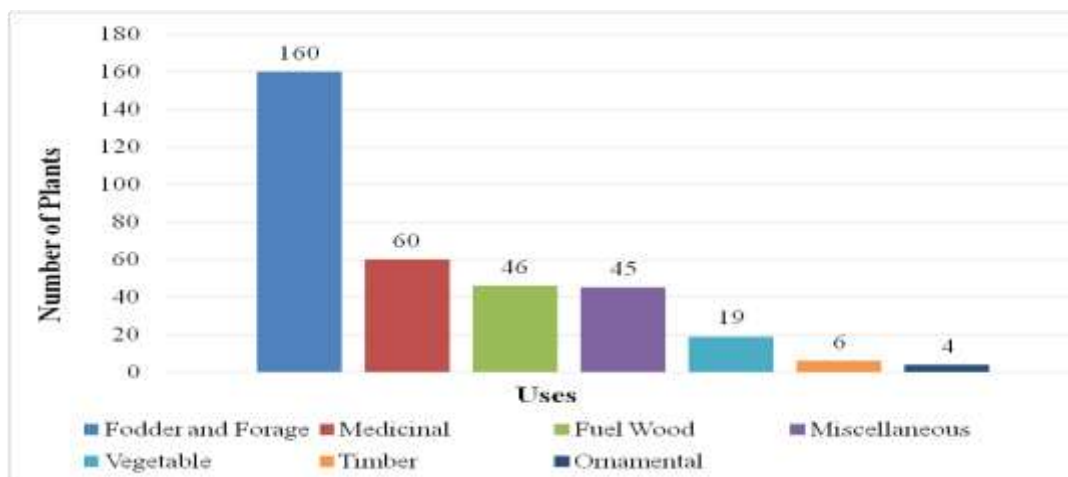


Figure 3: Bar Chart Showing Ethnobotanical Use of Various Plants of District Pishin

CONCLUSION

It was concluded from the results that District Pishin Balochistan is a biodiverse area carries 270 plants belonging to 65 families of local use. The area is under extreme high pressure of cutting and overgrazing and hence, care is needed to preserve these plants and save ethnobotanical resources for the upcoming generations.

CONFLICT OF INTEREST

The authors declared that present study was performed in absence of any conflict of interest.

AUTHOR CONTRIBUTIONS

R wrote the manuscript and carried out field survey. MFS supervised the study. S and GJ helps R in field survey and collection of data. MA reviewed the manuscript and helps in identification of plants. All authors read and approved the final version.

Copyrights: © 2020@ author (s).

This is an open access article distributed under the terms of the **Creative Commons Attribution License (CC BY 4.0)**, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author(s) and source are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

REFERENCES

- Ahmad S, Ali A, Beg H, Dasti AA and Shinwari ZK, 2006. Ethnobotanical studies on some medicinal plants of Booni Valley, District Chitral, Pakistan. *Pak. J. Weed. Sci. Res.* 12(3): 183-190.
- Ajaib M, Nasir I, Ishtiaq M, Shafi F, Hussain T, Bhatti KH, 2020. Exploration of Traditional Knowledge of wild plants of Sarsala and its adjoining areas, District Bhimber, Azad Jammu and Kashmir. *Bioscience Research.* 17(4): 2739-2749.
- Ajaib M, Khan Q and Khan Z, 2013. A contribution to the ethnobotanical studies of some plants of Loralai District, Baluchistan. *Biologia (Pakistan)* 59(2): 323-327.
- Ali SI and Qaisar M, (Eds.). 1995-2010. *Flora of Pakistan*. University of Karachi.
- Altaf R, Bhatti KH, Mirza SA, Ajaib M and Ishtiaq M, 2019. Ethnomedicinal Study of Tehsil Wazirabad Gujranwala Punjab Pakistan. *Pak. J. Sc.* 70(3): 233-238.
- Durrani MJ and Hussain F, 2005. Ethnoecological profile of plant of Harboi rangeland, Kalat, Pakistan. *Int. J. Biol. & Biotch.* 2(1): 15-22.
- Fazal H, Ahmad N, Rashid A and Farooq S, 2010. A Checklist of phanerogamic flora of Haripur Hazara, Khyber Pakhtunkhwa, Pakistan. *Pak. J. Bot.* 42(3): 1511-1522.
- Hazrat A, Shah J, Ahmad S, Nisar M, Jan AK and Sikandar, 2010. Medicinal plants of Ushera Valley, Dir, NWFP, Pakistan. *Pak. J. Bot.* 42(1): 31-34.
- Khan RU, Khan SU, Mehmood S, Ullah I, Khan A, 2013. Study of Chemical Constituents and Medicinal Uses of Indicator of District Bannu. *Int. J. Herb. Med.* 1(2): 59-80.
- Mahmood A, Mahmood A and Tabassum A, 2011. Ethnomedicinal survey of plants from District Sialkot, Pakistan. *J. App. Pharm.* 2(3): 2012-220.
- Manan Z, Sirajuddin A, Razzaq, Islam M and Ikramullah, 2007. Diversity of medicinal plants in Wari subdivision District Upper Dir, Pakistan. *Pak. J. Pl. Sci.* 13(1): 19-26.
- Maqbool M, Ajaib M, Bhatti KH, Ishtiaq M, Khanum H, Hussain T, Ghani H and Mushtaq W, 2019a. Traditional knowledge based inventory of wild plants of Watala National Park and allied villages from Bhimber District, Azad Jammu & Kashmir, Pakistan. *Appl. Ecol. Env. Res.* 17(5):12023-12055.
- Maqbool M, Ajaib M, Ishtiaq M, Azam S and Hussain T, 2019b. Ethnomedicinal Study of Plants Used in Phytotherapeutics among Indigenous Communities of District Bhimber, Azad Kashmir and Migrants to United Kingdom. *Proc. Pak. Acad. Sci.* 56 (2): 55-74.
- Marwat SK, Usman K, Shah RA, Shah A and Khan EA, 2013. Floristic account at emergent-aquatic and marsh land, Angiosperm at D.I. Khan District KPK, Pakistan. *Pak. J. Bot.* 45:279-288.
- Nasir E and Ali SI(Eds.), 1971-1994. *Flora of Pakistan*. PARC, Islamabad.
- Qureshi MA and Khan KA, 1971. An illustrated Flora of Peshawar District and Khyber Agency. Ranunculaceae to Moringaceae. *Pak. J. For.* 1. 212.
- Shah M and Hussain F, 2008. Ethnobotanical study of some medicinal plants of Mount Elum, District Bunir, Pakistan. *Pak. J. Pl. Sci.* 14(2): 91-95. 256.