
WEED FLORA IN CEREAL CROPS OF DISTRICT BANNU

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Abstract

In the present research work (2016-2018), there was reported 100 genera having 114 species distributed among 37 families. Out of which 5 were of monocot families (with 21 genera and 23 spp.) and 32 families of dicot (with 79 genera & 91 spp.). According to percentage data, it was reported that the weed members of family Poaceae was the greatest in cereal crops having 16.666% spp, while the family Asteraceae was next one with 14.912% weeds spp. Family Boraginaceae and Papilionaceae gaining third position having 6.140% weeds spp. Amaranthaceae, Brassicaceae and Solanaceae having 5.263%, Euphorbiaceae (4.385%), Polygonaceae (3.508%), Zygophyllaceae (2.631%), while the remaining families have less than 2.00 % weeds species. It was reported that *Cirsium arvense*, *Convolvulus arvensis*, *Conyza bonariensis*, *Cynodon dactylon*, *Cyperus rotundus*, *Parthenium hysterophorus* and *Sonchus asper* were the common weed found in all the three important cereal crops i.e wheat, maize and rice.

Keywords: Bannu, biodiversity, weeds, cereal crops.

INTRODUCTION

Bannu Division, located in Khyber Pakhtunkhwa province of Pakistan, is surrounded in North by the Tribal Areas and in the East by Karak district; while in the South by Lakki Marwat. The total area of the district including Bannu is 1227 square kilometers. District Bannu is situated at a distance of 190 km, in the South of Peshawar and lies between 32.43° to 33.06° N and from 70.22° to 70.07° E. Most of the areas of FR Bannu are arid and rainfall dependant. However, some parts of Baka Khel area are irrigated with canals from Tochi river while canals from Baran Dam irrigate some areas of Mamman Khel. Important cereal crops of district Bannu are wheat, maize, rice, gram, sugarcane and fodder and grain sorghum. Khan *et al.*, (2012-14). Biodiversity is the variation of life forms within a given ecosystem, biome, or on the entire Earth. Any plant, which occurs at wrong place, is known as weeds, Shah *et al.*, (2006). The word cereal derives from “Ceres”, the name of the Roman goddess of harvest and agriculture. Cereals are grains producing plants belong to the grass family. They are report for over 50% of human being energy and protein requirements. It inhabits two-thirds of all cultivated land. In their natural form (as in whole grain), they are a rich source of vitamins, minerals, carbohydrates, fats, oils and protein, Wang *et al.*,(2007). FR Bannu lies just like a bend around the District Bannu from West to East longitude. Weeds are hidden enemies of crops and cause huge losses to crop yields which amount to Rs. 115 to 200 billion annually (Atta & Khaliq, 2002). They are tough contestant to cereal crops due to their abundant growth in different environmental conditions. Weeds decrease crop yields by competing for nutrients, water, space and light. Some weeds are allelopathic which further aggravate the losses in crop yields. Hamid *et al.*, (1998) reported that weed competition in cereal crop decreased yield by 42-56%. Generally, one kilogram of weed biomass corresponds to a loss of one kilograss in crop biomass (Rao, 2000). Grain yield of wheat is significantly increased by use of different chemicals for weed control as compared with weedy check (Tariful *et al.*, 1998; Chaudhry *et al.*, 2008). A number of studies have been conducted on the weed flora of cereal crops from different regions of Pakistan, from Peshawar (Hussain *et al.*, 1985), Abbotabad (Hashim and Marwat, 2002), Chitral (Hussain *et al.*, 2004), District Bannu (Khan *et al.*, 2004), Qambar village from Swat (Akhtar and Hussain, 2007) and District Karak (Wazir *et al.*, 2007), Pakistan (Naveed & Hussain, 2007; Qureshi *et al.*, 2009 and Waheed *et al.*, 2009). The distribution, density and frequency percentage of weed species of wheat and rice crop of Khairpur district was determined by Memon *et al.*, (2003). Present paper is an attempt to provide the checklist of fully identified problematic weeds of cereal crops in the study area which may provide an idea for future strategies for weed management in cereal crops in light of the findings.

MATERIALS AND METHODS

To collect the required data of weed specimens in cereal crops of Bannu, several field trips were arranged during 2016-2018 from time to time to the research area. Wide varieties of weed specimens were collected from the cereal crops. The collected specimens were pressed, dried and mounted on herbarium sheets. Then the specimens were identified by Dr. Sultan Mehmood Wazir, Department of Botany UST Bannu, Mr. Abdur Rehman, Chairman Department of Botany, Govt. Post Graduate College Bannu, Mr. Naveed Akhtar and Mr. Zabih Ullah Department of Botany, University of Peshawar. The identification was also confirmed with the help of available literature (Stewart 1972, Nasir and Ali, 1971-2007), and Flora of Pakistan (Nasir & Ali, 1970-1979, 1980-1989; Ali & Nasir, 1990-1992 and Ali & Qaiser, 1993-2009). Results were rechecked and compared with literature like that of Rubina, 1998; Ali and Fefevre, 1996, Khalid, 1995.

RESULTS AND DISCUSSION

The present research work conducted during 2016-2018, a total of 100 genera and 114 species were identified distributed among 37 families. Among the 37 families, there were about 5 families of monocot (having 21 genera and 23 species) and 32 families of dicot (having 79 genera and 91 species). The most important family in the term of species representation was Poaceae having (17 genera and 19 species). Poaceae was followed by Asteraceae having (15 genera and 17 species), Papilionaceae (7 genera and 7 species), Boraginaceae (4 genera and 7 species), Amaranthaceae (5 genera and 6 species), Brassicaceae (6 genera and 6 species), Solanaceae (5 genera and 6 species), Euphorbiaceae (3 genera and 5 species), Polygonaceae (3 genera and 4 species), Zygophyllaceae (3 genera and 3 species), Apiaceae (2 genera and 2 species), Caryophyllaceae (2 genera and 2 species), Chenopodiaceae (2 genera and 2 species), Convolvulaceae (1 genera and 2 species), Cucurbitaceae (2 genera and 2 species), Malvaceae (2 genera and 2 species), Plantaginaceae (1 genus and 2 species), Aizoaceae (1 genus and 1 species), Apocynaceae (1 genus and 1 species), Asclepiadaceae (1 genus and 1 species), Asphodelaceae (1 genus and 1 species), Cyperaceae (1 genus and 1 species), Fumariaceae (1 genus and 1 species), Gentianaceae (1 genus and 1 species), Iridaceae (1 genus and 1 species), Liniaceae (1 genus and 1 species), Nyctaginaceae (1 genus and 1 species), Orchidaceae (1 genus and 1 species), Orobanchaceae (1 genus and 1 species), Oxalidaceae (1 genus and 1 species), Papaveraceae (1 genus and 1 species), Primulaceae (1 genus and 1 species), Ranunculaceae (1 genus and 1 species), Resedaceae (1 genus and 1 species), Rubiaceae (1 genus and 1 species), Tiliaceae (1 genus and 1 species) and Verbenaceae (1 genus and 1 species).

Percentage data of family in cereal crops:

The important families in the term of percentage data of family in cereal crops were Poaceae having (16.666%). Poaceae was followed by Asteraceae having (14.912%), Boraginaceae and Papilionaceae having (6.140%), Amaranthaceae, Brassicaceae and Solanaceae having (5.263%), Euphorbiaceae having (4.385%), Polygonaceae (3.508%), Zygophyllaceae having (2.631%), Apiaceae, Caryophyllaceae, Chenopodiaceae, Convolvulaceae, Cucurbitaceae, Malvaceae and Plantaginaceae having (1.754%), Aizoaceae, Apocynaceae, Asclepiadaceae, Asphodelaceae, Cyperaceae, Fumariaceae, Gentianaceae, Iridaceae, Linaceae, Nyctaginaceae, Orchidaceae, Orobanchaceae, Oxalidaceae, Papaveraceae, Primulaceae, Ranunculaceae, Resedaceae, Rubiaceae, Tiliaceae and Verbenaceae having (0.877%).

Common weeds in wheat, maize and rice. There were 11 genera and 12 species belonging to 8 families in wheat, maize and rice. Among the 8 families there were 2 families of monocot (having 2 genera and 2 species) and 6 families of dicot (having 9 genera and 10 species). The highest family in the term of species distribution was Asteraceae having (4 genera and 4 species). Asteraceae was followed by Euphorbiaceae having (1 genus and 2 species), Amaranthaceae (1 genus and 1 species), Convolvulaceae (1 genus and 1 species), Cyperaceae (1 genus and 1 species), Resedaceae (1 genus and 1 species), Poaceae (1 genus and 1 species) and Solanaceae (1 genus and 1 species).

Percentage data of family in wheat maize and rice crops:

In the term of percentage data representation of common families in cereal crop the important family was Asteraceae having (33.333%). Asteraceae was followed by Euphorbiaceae having (16.666%), Amaranthaceae, Convolvulaceae and Cyperaceae, Resedaceae, Poaceae and Solanaceae having (8.333%).

Table-1. General table of weeds in cereal crops of Bannu.

S.No	Plant Name	Family	Local Name	Occurrence		
				Maize	Rice	Wheat
1	<i>Achyranthes aspera</i> L.	Amaranthaceae	Shpazhaka	+	+	-
2	<i>Aerva javanica</i> (Burm. f.) Juss.	Amaranthaceae	kharvorha	+	+	+
3	<i>Alhagi maurorum</i> Medic.	Papilionaceae	Thunda	-	-	+
4	<i>Alopecurus nepalensis</i> Trin. Ex Steud.	Poaceae	Ozhakaye	-	-	+
5	<i>Anagallis arvensis</i> L.	Primulaceae	Peze nanya gul	-	-	+
6	<i>Amaranthus blitoides</i> S. watson	Amaranthaceae	Ranzukka	-	-	+
7	<i>Amaranthus viridis</i> L.	Amaranthaceae	Ranzukka	+	-	+
8	<i>Aristida adscensionis</i> L.	Poaceae	Thor lummi	-	-	+
9	<i>Aristida cyanantha</i> Nees ex Steud.	Poaceae	Speen lummi	+	-	+
10	<i>Arnebia hispidissima</i> DC.	Boraginaceae	Unknown	-	-	+
11	<i>Asphodelus tunifolius</i> Caven.	Asphodelaceae	Piozakai	-	-	+
12	<i>Astragalus hamosus</i> L.	Papilionaceae	Aezai	-	-	+
13	<i>Atriplex stocksii</i> Boiss.	Chenopodiaceae	Unknown	+	-	+
14	<i>Avena fatua</i> L.	Poaceae	karyana	-	-	+
15	<i>Boerhavia procumbens</i> Banks ex Roxb	Nyctaginaceae	Pandrawash	+	-	+
16	<i>Brassica tournefortii</i> Gouan	Brassicaceae	Pari woeri	-	-	+
17	<i>Calendula officinalis</i> L.	Asteraceae	Zer gul	-	-	+
18	<i>Calotropis procera</i> R. Br.	Asclepiadaceae	Spalmuka	-	-	+

19	<i>Carduus argentatus</i> L.	Asteraceae	Aghzekaye	-	-	+
20	<i>Carthamus persicus</i> Willd.	Asteraceae	Conzali	-	-	+
21	<i>Carthamus tinctorius</i> L.	Asteraceae	Catasoora	-	-	+
22	<i>Celosia argentea</i> L.	Amaranthaceae	Palash gul	-	-	+
23	<i>Cenchrus ciliaris</i> L.	Poaceae	Qarashkai	+	-	-
24	<i>Centaurea iberica</i> Spreng.	Asteraceae	Konzalla	-	-	+
25	<i>Centaurium pulchellum</i> (Sw.) Druce	Gentianaceae	Unknown	-	-	+
26	<i>Chenopodium murale</i> L.	Chenopodiaceae	Toor sormai	+	-	+
27	<i>Chrozophora plicata</i> (Vahl) A. Juss. ex Spreng	Euphorbiaceae	Kharpunai	+	-	-
28	<i>Cirsium arvense</i> (L.) Scop.	Asteraceae	Aghzikaye	+	+	+
29	<i>Cistanche tubulosa</i> (Shehenk.) Wight.	Orobanchaceae	Kherghurn	-	-	+
30	<i>Citrullus colocynthis</i> (L.) Shred.	Cucurbitaceae	Maraghinya	+	-	+
31	<i>Convolvulus arvensis</i> L.	Convolvulaceae	Perwatie	+	+	+
32	<i>Convolvulus spicatus</i> Hallier f.	Convolvulaceae	Perwatie	-	-	+
33	<i>Conyza bonariensis</i> (L.) Cronquist	Asteraceae	Shpelaye	+	+	+
34	<i>Corchorus depressus</i> (L.) Stocks	Tiliaceae	Gaanda	+	+	-
35	<i>Croton bonplandianus</i> Bat.	Euphorbiaceae	Lashthee welanaye	+	-	-
36	<i>Cymbopogon distense</i> Schutt.	Poaceae	Surgurai	-	-	+
37	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Barawa	+	+	+
38	<i>Cyperus rotundus</i> L.	Cyperaceae	Delai	+	+	+

39	<i>Datura alba</i> Nees.	Solanaceae	Barbaka	+	+	+
40	<i>Dichanthium annulatum</i> (Forssk.)	Poaceae	Shpazhora barrawa	+	+	-
41	<i>Digera muricata</i> (L.) Mart	Amaranthaceae	Chaatt	+	+	-
42	<i>Dinebra retroflexa</i> (Vahl) Panzer.	Poaceae	Unknown	+	+	-
43	<i>Echinochloa crus-galli</i> (L.) P. Beauv.	Poaceae	Shenepa	+	+	-
44	<i>Echinops echinatus</i> L.	Asteraceae	Catasori	-	+	+
45	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Chezi	+	-	-
46	<i>Eragrostis pilosa</i> (L.) P. Beauv.	Poaceae	Khalipellai	+	-	+
47	<i>Eruca sativa</i> Mill.	Brassicaceae	Shersham	-	-	+
48	<i>Euphorbia oblongata</i> Griseb	Euphorbiaceae	Murdor botti	-	-	+
49	<i>Euphorbia helioscopia</i> L.	Euphorbiaceae	Purparie	+	+	+
50	<i>Euphorbia prostrata</i> Ait.	Euphorbiaceae	Speni wana	+	+	+
51	<i>Fagonia cretica</i> L.	Zygophyllaceae	Spelaghzai	-	-	+
52	<i>Farsetia jacquemontii</i> Jafri	Brassicaceae	Melongay	-	-	+
53	<i>Filago pyramidata</i> L.	Asteraceae	Unknown	-	-	+
54	<i>Fumaria indica</i> Hausskn.	Fumariaceae	Sewa	-	-	+
55	Galium tricorne Stokes	Rubiaceae	Khwrshpazha	+	-	+
56	<i>Heliotropium crispum</i> Desf.	Boraginaceae	Kharpunai	+	-	-
57	<i>Heliotropium europaeum</i> Kazmi	Boraginaceae	Kharpunai	+	-	+
58	<i>Heliotropium strigosum</i> Willd.	Boraginaceae	Unknown	-	-	+
59	<i>Hypecoum pendulum</i> L.	Papaveraceae	Peray gajara	-	-	+
60	<i>Hyoscyamus niger</i> L.	Solanaceae	Badelbang	-	-	+

61	<i>Ifloga spicata</i> Forssk.	Asteraceae	Unknown	-	-	+
62	<i>Iris lactea</i> Pallas	Iridaceae	Deloka	+	+	-
63	<i>Lactuca serriola</i> L.	Asteraceae	Lewani salad	+	+	-
64	<i>Lathyrus aphaca</i> L.	Papilionaceae	mettarraye	-	-	+
65	<i>Launaea procumbens</i> Pravin	Asteraceae	Piawarie	-	-	+
66	<i>Launaea angustifolia</i> Kuntze	Asteraceae	Piawarie	-	-	+
67	<i>Leptochloa panicea</i> Retz.	Poaceae	Shenepa	+	-	-
68	<i>Linum corymbulosum</i> Reichenb.	Linaceae	Unknown	-	-	+
69	<i>Malcolmia africana</i> (L.) R.Br.	Brassicaceae	Bashtha	-	-	+
70	<i>Malva neglecta</i> Wallr.	Malvaceae	Peskie	-	-	+
71	<i>Malvastrum coromendelianum</i> (L.) Garcke	Malvaceae	Unknown	+	+	-
72	<i>Medicago polymorpha</i> L.	Papilionaceae	Maklendye	-	-	+
73	<i>Melilotus indica</i> (L.) All.	Papilionaceae	Unknown	-	-	+
74	<i>Nerium indicum</i> Mill.	Apocynaceae	Gandarie	-	-	+
75	<i>Neslia apiculata</i> Fisch.	Brassicaceae	Unknown	-	-	+
76	<i>Nicotiana plumbaginifolia</i> Viv.	Solanaceae	Unknown	+	+	-
77	<i>Nonea philistaea</i> Boiss.	Boraginaceae	Shunstargi	-	-	+
78	<i>Nonea pulla</i> (L.) DC.	Boraginaceae	Shunstargi	-	-	+
79	<i>Oligomeris linifolia</i> (Vahl.) Macbride	Resedaceae	Unknown	+	+	+
80	<i>Onosma chitralicum</i> I. M. Johnston	Boraginaceae	Kakawvie	-	-	+
81	<i>Oxalis corniculata</i> L.	Oxalidaceae	Tharwekaye	+	+	-

82	<i>Oxyria digyna</i> (L.) Hill.	Polygonaceae	Tassavenye spazha	-	-	+
83	<i>Parthenium hysterophorus</i> L.	Asteraceae	Kherbotta	+	+	+
84	<i>Pegnum harmala</i> L.	Zygophyllaceae	Sponda	-	-	+
85	<i>Phalaris minor</i> Retz.	Poaceae	Chagaa bashtha	-	-	+
86	<i>Plantago lanceolata</i> L.	Plantaginaceae	Speghol	-	+	+
87	<i>Plantago ovate</i> Forssk.	Plantaginaceae	Speghol	-	-	+
88	<i>Poa botryoides</i> (Trin. ex Griseb.) Kom.	Poaceae	Samiaka	+	+	-
89	<i>Poa bulbosa</i> L.	Poaceae	Bagastha	-	-	+
90	<i>Polygonum biaristatum</i> Aitch. & Hemsl.	Polygonaceae	Ghat bandkaye	-	-	+
91	<i>Polygonum plebejum</i> R. Br	Polygonaceae	Sherghanday	-	-	+
92	<i>Portulaca oleracea</i> L.	Aizoaceae	Verkhora	+	-	+
93	<i>Psammogeton biternatum</i> Edgew.	Apiaceae	Peray gajera	-	-	+
94	<i>Ranunculus muricatus</i> L.	Ranunculaceae	Zerri gul	+	-	+
95	<i>Rumex dentatus</i> (Meisn.) Rech.f.	Polygonaceae	Bashtha	-	-	+
96	<i>Sacharum arundinaceum</i> H.K. F.	Poaceae	Kana	-	-	+
97	<i>Setaria pumila</i> (Poir.) Roem	Poaceae	Sherakaie	-	+	+
98	<i>Silene vulgaris</i> (Moench) Garcke,	Caryophyllaceae	Ghorakie	-	-	+
99	<i>Sisymbrium irio</i> L	Brassicaceae	Zangli woeri	-	-	+
100	<i>Sonchus asper</i> (L.) Hill.	Asteraceae	Tharezha	+	+	+
101	<i>Solanum surattense</i> Burm.f.	Solanaceae	Marraghenye	+		+

102	<i>Sorghum halepense</i> (Linn.) Pers.	Poaceae	Didam	+	+	-
103	<i>Spergula fallax</i> (Lowe) E. H. L. Krause	Caryophyllaceae	Baterwana	-	-	+
104	<i>Taraxacum officinale</i> F. H. Wiggers.	Asteraceae	Zyergualaye	-	-	+
105	<i>Torilis nodosa</i> (L.) Gaertn.	Umbelliferae	Unknown	-	-	+
106	<i>Tribulus terrestris</i> L.	Zygophyllaceae	aghzai	+	-	+
107	<i>Trichosanthes dioica</i> Rxb	Cucurbitaceae	Unknown	-	-	+
108	<i>Trigonella corniculata</i> (L.) Linn.	Papilionaceae	Spistherlia	-	-	+
109	<i>Verbena officinalis</i> L.	Verbenaceae	Unknown	-	+	+
110	<i>Vicia hirsuta</i> (L.) S.F.Gray, Nat.	Papilionaceae	Mettarraye	-	-	+
111	<i>Withania coagulans</i> Dunal.	Solanaceae	Shapyang	-	-	+
112	<i>Withania somnifera</i> L.	Solanaceae	Unknown	+	-	-
113	<i>Xanthium strumarium</i> L.	Asteraceae	Ghwatta spazha	-	+	-
114	<i>Zeuxine strateumatica</i> (L.) Schlechter	Orchidaceae	Unknown	-	-	+

Key: + = Presence of weed, - = Absence of weed

Table-2. Distribution of genera and species in various families in cereal crops.

S.No	Family	No. of Genus	No. of Species
1	Aizoaceae	1	1
2	Amaranthaceae	5	6
3	Apiaceae	2	2
4	Apocynaceae	1	1
5	Asclepiadaceae	1	1

6	Asphodelaceae	1	1
7	Asteraceae	15	17
8	Boraginaceae	4	7
9	Brassicaceae	6	6
10	Caryophyllaceae	2	2
11	Chenopodiaceae	2	2
12	Convolvulaceae	1	2
13	Cucurbitaceae	2	2
14	Cyperaceae	1	1
15	Euphorbiaceae	3	5
16	Fumariaceae	1	1
17	Gentianaceae	1	1
18	Iridaceae	1	1
19	Linaceae	1	1
20	Malvaceae	2	2
21	Nyctaginaceae	1	1
22	Orchidaceae	1	1
23	Orobanchaceae	1	1
24	Oxalidaceae	1	1
25	Papaveraceae	1	1
26	Papilionaceae	7	7
27	Plantaginaceae	1	2
28	Poaceae	17	19
29	Polygonaceae	3	4

30	Primulaceae	1	1
31	Ranunculaceae	1	1
32	Resedaceae	1	1
33	Rubiaceae	1	1
34	Solanaceae	5	6
35	Tiliaceae	1	1
36	Verbenaceae	1	1
37	Zygophyllaceae	3	3
Total	37	100	114

Table-3. Monocot families in cereal crops.

S.No.	Family	Genus	Species
1	Asphodelaceae	1	1
2	Cyperaceae	1	1
3	Iridaceae	1	1
4	Orchidaceae	1	1
5	Poaceae	17	19
Total	5	21	23

Table-4. Dicot families in cereal crops.

S.No	Family	No. of Genus	No. of Species
1	Aizoaceae	1	1
2	Amaranthaceae	5	6
3	Apiaceae	2	2

4	Apocynaceae	1	1
5	Asclepiadaceae	1	1
6	Asteraceae	15	17
7	Boraginaceae	4	7
8	Brassicaceae	6	6
9	Caryophyllaceae	2	2
10	Chenopodiaceae	2	2
11	Convolvulaceae	1	2
12	Cucurbitaceae	2	2
13	Euphorbiaceae	3	5
14	Fumariaceae	1	1
15	Gentianaceae	1	1
16	Linaceae	1	1
17	Malvaceae	2	2
18	Nyctaginaceae	1	1
19	Orobanchaceae	1	1
20	Oxalidaceae	1	1
21	Papaveraceae	1	1
22	Papilionaceae	7	7
23	Plantaginaceae	1	2
24	Polygonaceae	3	4
25	Primulaceae	1	1
26	Ranunculaceae	1	1
27	Resedaceae	1	1

28	Rubiaceae	1	1
29	Solanaceae	5	6
30	Tiliaceae	1	1
31	Verbenaceae	1	1
32	Zygophyllaceae	3	3
Total	32	79	91

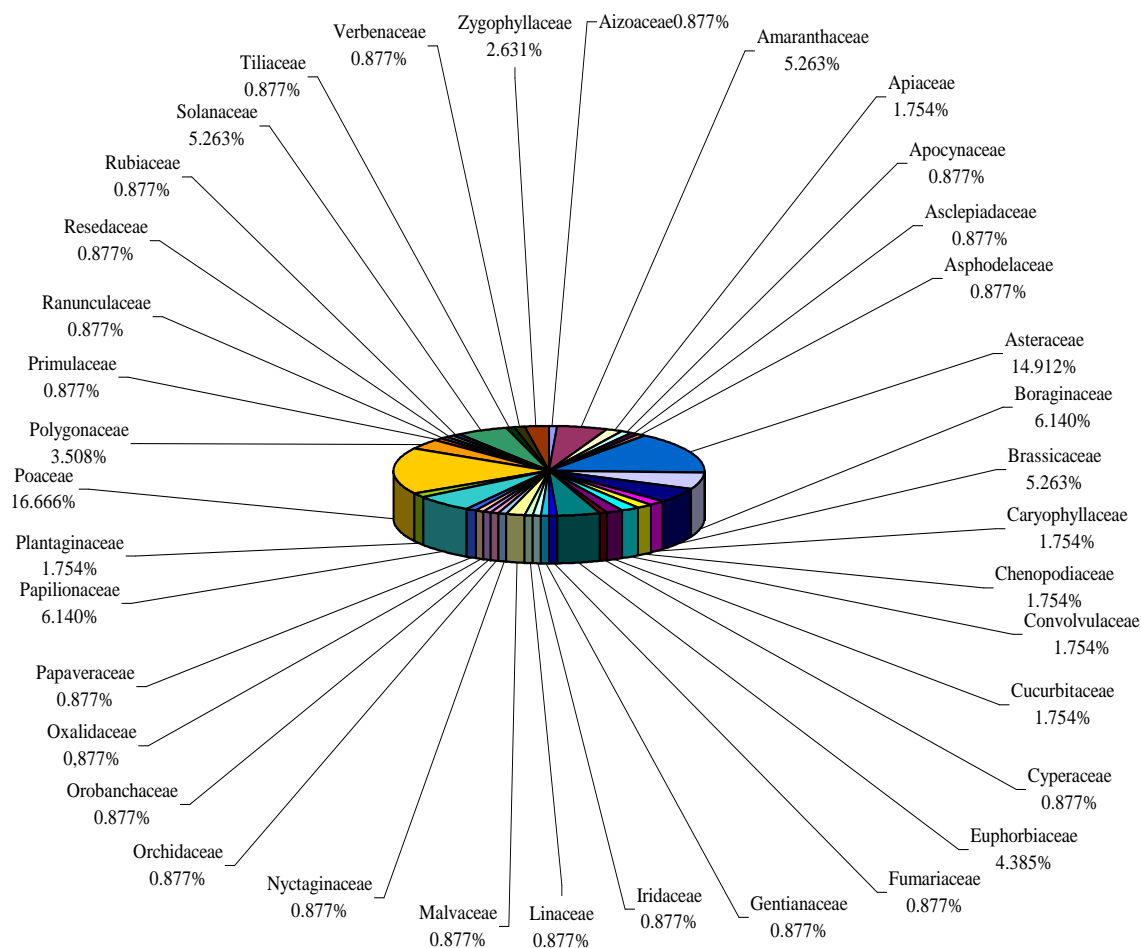


Fig:1. Family percentage data of weeds in cereal crops.

Table-5. Common weeds in wheat, maize and rice crops.

S.No.	Plant name	Family	Local name
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1	<i>Aerva javanica</i> (Burm. f.) Juss.	Amaranthaceae	Kharvorrha
2	<i>Cirsium arvense</i> (L.) Scop.	Asteraceae	Aghzikaye
3	<i>Convolvulus arvensis</i> L.	Convolvulaceae	Perwatie
4	<i>Conyza bonariensis</i> (L.) Cronquist	Asteraceae	Shpelaye
5	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Barawa
6	<i>Cyperus rotundus</i> L.	Cyperaceae	Delai
7	<i>Datura alba</i> Nees.	Solanaceae	Barbaka
8	<i>Euphorbia helioscopia</i> L.	Euphorbiaceae	Purparie
9	<i>Euphorbia prostrata</i> Ait.	Euphorbiaceae	Speni wana
10	<i>Oligomeris linifolia</i> (Vahl.) Macbride	Resedaceae	Unknown
11	<i>Parthenium hysterophorus</i> L.	Asteraceae	Kherbotta
12	<i>Sonchus asper</i> (L.) Hill.	Asteraceae	Tharezha

Table-6. Distribution of common genera and species of weeds in wheat, maize and rice crops.

S.No.	Family	Genus	Species
1	Amaranthaceae	1	1
2	Asteraceae	4	4
3	Convolvulaceae	1	1
4	Cyperaceae	1	1
5	Euphorbiaceae	1	2
6	Resedaceae	1	1
7	Poaceae	1	1
8	Solanaceae	1	1
Total	8	11	12

Table-7. Monocot familie in wheat, maize and rice crops.

S.No.	Family	Genus	Species
1	Cyperaceae	1	1
2	Poaceae	1	1
Total	2 Families	2	2

Table-8. Dicot families in wheat, maize and rice crops.

S.No.	Family	Genus	Species
1	Amaranthaceae	1	1
2	Asteraceae	4	4
3	Convolvulaceae	1	1
4	Euphorbiaceae	1	2
5	Nyctaginaceae	1	1
6	Solanaceae	1	1
Total	6 Families	9	10

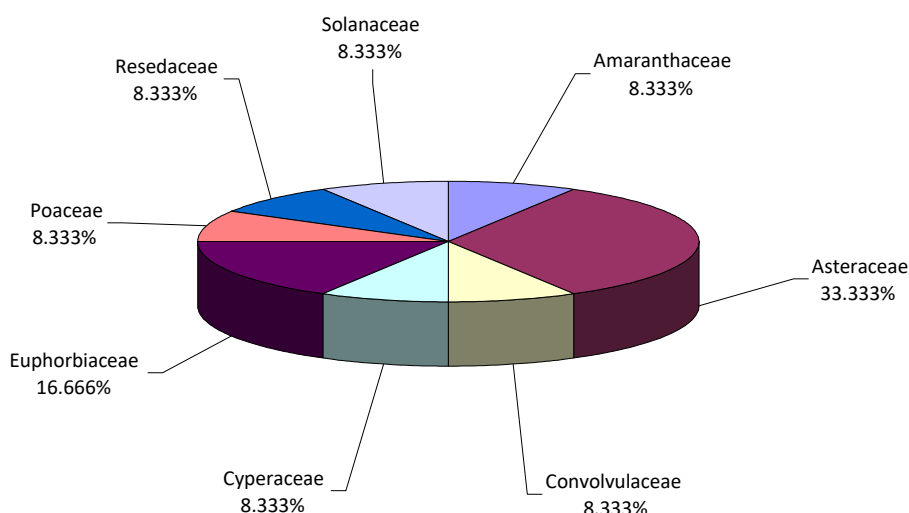


Fig:2 Common family percentage data of weeds in cereal crops.

REFERENCES

- Ali, S.I. and M. Qaiser. (Eds.). 1993-2009. Flora of Pak., No. 194-217. Islamabad, Karachi.
- Ali, S.I. and Y.J. Nasir. (Eds.). 1990-1992. Flora of Pak., No. 191-193. Karachi and Islamabad.
- Akhtar, N. and F. Hussain. 2007. Weeds of wheat fields in village Qambar, District Swat, Pakistan. *Pak. J. Weed Sci. Res.* 13(1): 31-35.
- Ali, A. and J. L. Fefever. 1996. Indigenous Knowledge of plants. A case study in Chitral, *Proc. Ethnobot. Workshop, Sep., NARC, Islamabad*, pp. 136-151.
- Chaudhry, S., M. Hussain, M. A. Ali and J. Iqbal. 2008. Efficacy and economics of mixing of narrow and broad leaved herbicides for weed control in wheat. *J. Agric. Res.* 46(4): 355-360.
- Hamid, E.I., E.E. Hassanein and S.M. Shebl. 1998. Weed/wheat competition in Nile delta, Assiut. *J. Agric. Sci.* 29: 105- 113.
- Hussain, F., K.B. Marwat and K. Ahmad. 1985. Eco taxonomic studies on the weeds of Wheat fields in Peshawar Valley. *Gomal Univ. J. Res.* 5: 27-35.
- Hashim, S. and K.B. Marwat. 2002. Invasive weeds a threat to the biodiversity. A case study from Abbottabad district, N-W Pakistan. *Pak. J. Weed Sci. Res.* 8(1-2): 1-2.

- Hussain, F., A. Murad and M.J. Durrani. 2004. Weed communities in wheat fields of Mastuj, District Chitral, Pakistan. *Pak. J. Weed Sci. Res.*, 10: 101-108.
- Khalid, S. 1995. Plants in danger. Fifth National Conference of plants Scientist, March, 28-30, NARC, Islamabad.
- Khan, N., I. Khan, M. A. Khan and H. Khan. 2004. Major Rabi and Kharif Weeds of agronomic crops of District Bannu. *Pak. J. Weed Sci. Res.* 10(1-2): 79- 86.
- Khan R.U. S. Mehmood, S.U.Khan, A.Muhammad and Z.Hussain. 2014. Comparative Study of Weed Species Recorded In Different Field Crops of Bannu, Khyber Pakhtunkhwa, Pakistan *Pak. J. Weed Sci. Res.*, 20(4): 489-504.
- Khan R.U. S.M.Wazir, M.Subhan, S.Ullah, H.Ullah, A.Farooq, F.Jaffar, Shazia, I.A.Shah and M.Kamal 2012. Weed Flora of Sugarcane in District Bannu, Khyber Pakhtunkhwa, Pakistan *Pak. J. Weed Sci. Res.*, 18(4): 541-552.
- Khan R.U, S.Mehmood, S.U.Khan* M.Subhan (2013) Ethnobotanical Study Of Common Weed Flora Of Sugarcane In District Bannu, Khyber Pakhtunkhwa, Pakistan. *International Journal of Pharmacognosy and Phytochemistry*.2013: 1(4) : 49-78
- Memon, R.A., G.R. Bhatti and S. Khalid. 2003. Weed diversity of wheat crop in Khairpur District, Sindh. *Pak. J. Weed Sci. Res.* 9 (1-2): 99-103.
- Nasir, E. and S.I. Ali. (Eds.). 1970-1979. Flora of West Pakistan, No. 1-131. Islamabad, Karachi.
- Nasir, E. and S.I. Ali. (Eds.). 1980-1989. Flora of Pakistan, No. 132-190. Islamabad, Karachi.
- Nasir, E. and S.I. Ali. 1971-2007. Flora of West Pakistan Department of Botany, University of Karachi, Karachi.
- Qureshi, R., A. Waheed and M. Arshad. 2009. Weed Communities of Wheat crop in district Toba Tek Singh, Pakistan. *Pak. J. Bot.*, 41(1): 239-245.
- Rao, V.S. 2000. Harmful effects caused by weeds. Principles of Weed Science. Oxford and IBH publishing Co. Pvt. Ltd. New Delhi & Calcutta. Pp.1.
- Rubina, A. R. 1998. Need of conservation of indangered medicinal Plants. Proc. wild medicinal plants Resource of N. Pakistan. May 11-12, PFI, Peshawar Pakistan.

- Shah, S. R. U., M. Qasim, I. A. Khan and S.A.U. Shah 2006. Study of medicinal plants among weeds of wheat and maize in Peshawar region. *Pak. J. Weed Sci. Res.* 121 (3): 191-197.
- Stewart, R.R. 1972. Annotated catalogue of vascular plants in West Pakistan and Kashmir. Fakhri Printing Press, Karachi.
- Tarif, M. I., A. K. Emran and M. A. Gaffer. 1998. Influence of crop density and weeding frequency on crop growth and grain yield in wheat. *Pertanika J. Agric. Sci.* 21: 123-28.
- Waheed, A., R. Qureshi, G.S. Jakhar and H. Tareen. 2009. Weed community dynamics in Wheat crop of district Rahim Yar Khan, Pakistan. *Pak. J. Bot.*, 41(1): 247-254.
- Wang, S. L. Duan., J. L., X. Tiam, and Z. Li. 2007. UV-B radiation increase paraquat tolerance of two broad leaved and two grass weed in relation to changes in herbicide absorption and photosynthesis *Weed Res.* 47 (2): 122-128.