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# WEED ASSEMBLAGES IN FOUR VEGETABLE CROPS OF TEHSIL GOJRA, DISTRICT TOBA TEK SINGH, PAKISTAN

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## ABSTRACT

Distribution of various weeds in the fields of Okra, Sponge-gourd, Bitter-gourd and Red-gourd in Tehsil Gojra, District Toba Tek Singh, Punjab, Pakistan was investigated during 2007-2008 and forty weed species of seventeen different angiosperm families were identified with Poaceae having the maximum of weeds species, i.e. 10 while eleven families had only single weed species in each. The Family Importance value Index (FIVI) of Cyperaceae and Poacaeae were 2.67 and 5.40 respectively. On the other hand, among the dicot families, the FIVI of 7 weed species of Asteraceae was 5.55. Euphorbiaceae and Solanacae had 6.1 and 3.68 while F1V1 of each weed species of remaining ten families ranged between 20.73 to 2.46. On the basis of percentage frequency distribution, 35 weed species were found below average, 3 on average while one (*Cynodon dactylon*) assertive and one *Convolvulus arvensis* ascendant in distribution.

**Key-words:** Vegetable crops, Gojra, Toba Tek Singh, Pakistan,

## INTRODUCTION

Any plant growing out of place or where it is not wanted is called a weed (Anonymous, 2001). According to the European weed research society weed is "Any plant or vegetation, excluding fungi, interfering with the objectives or requirements of the people". Weeds may be annual, biennial or perennial but majority of the weeds are annuals with high reproductive potential (Grime, 1979; Walker and Evenson, 1985; Eberlein *et al*., 1988).

The weeds are harmful, adversely affect crop productivity and cause health hazards in humans and animals. Moreover, the yield losses of crops from weeds are huge in terms of its quality and quantity. The damage specificity of the crops by weeds is resulting in decreased crop yield, plant diseases, inefficient use of land, water management problems, higher cost to control the insects, poor quality products and lowering the efficiency of humans (Kingman and Ashton, 1982). Ecological prevalence, adaptability of weeds in different environmental conditions and plasticity of genotype raised weeds as the strong competitors of the economically important crops for light, water and food (Sinzar *et al*., 1992; Misovic *et al*., 1992).

Hussain *et al.* (1985) identified 84 weeds of 26 families from three wheat growing areas of Quetta. The weed species were belonging to family Asteraceae (13 spp.), Papillionaceae (10 spp.), Brassicaceae (9 spp.), Chenopodiaceae (8 spp.), Poaceae (97 spp.), Boraginaceae (5 spp.), Lilliaceae (4 spp.), Euphorbiaceae, Lamiaceae and Polygonaceae (each with 3 spp.) Caryophyllaceae and Scorphulariaceae (each with 2 spp.), and Convolvulaceae, Cyperaceae, Dipsacaceae, Fumariaceae, Geraniaceae, Malvaceae, Papaveraceae, Plantaginaceae, Ranunculaceae, Rubiaceae, Rutaceae, Solanaceae, Verbenaceae and Zygophyllaceae (each with one spp.). Marais (1985) studied the weed competition in maize with reference to peasant farming and stated that one of the major problems caused by weeds was remarkable reduction in yield from 25-50%.

Mumtaz *et al*. (1991) carried out a survey on the spectrum, frequency and density of weeds in wheat and reported *Chenopodium album* as the most prevalent and densely populated weed of Punjab in different crops. They concluded that *Phalaris minor* was the most frequently occurring weed of the wheat in the canal irrigated areas of the Punjab province of Pakistan. Boz *et al*. (2000) studied the distribution and density of weed species occurring in wheat fields of Denizli Province, Turkey and seventy two different species of plants were recorded. Among the weed species recorded, prostrate knotweed (*Polygonum aviculare*) was defined as the most common species with the frequency of 57% and 45% followed by lambs quarters (*Chenopodium album*) and field bindweed (*Convolvulus arvensis*) with frequency of 41%.

Cheema *et al*. (2001) studied the weed flora in maize fields of Tehsil Gojra (T.T. Singh), Pakistan in respect of floristic composition, life form, frequency and density and reported 38 weed species of 20 families among which 25 weed species were therophytes, 12 hemicryptophytes and 1 geophyte. Ali *et al.* (2002) recorded 49 weed species of 20 different families in fields of wheat in Tehsil Pasroor, District Sailkot, Pakistan with respect to the floristic composition, life form, frequency, and density. The frequently occurring weeds were *Avena sativa* (80.66 %), *Poa*

*annua* (65.33 %), and *Phalaris minor* (65.00 %). Among the 49 recorded weed species, 33 species were therophytes, 14 hemicryptophytes and 1 geophyte and one parasite. Memeon *et al*. (2003) studied the weed diversity of wheat crop in Khairpur District, Sindh, Pakistan and reported 24 weed species of 9 families. They classified the weed species as assertive, ascendant, average and below average. Ali and Hassan (2004) studied the weed flora of potato fields in the Tehsil Pasroor, District Sailkot, Pakistan and they reported 29 weed species, belonging to 14 different families. The frequently occurring weeds were *Poa annua* (70.00 %), *Avena sativa* (66.66 %) and *Euphorbia helioscopia* (63.33 %). Among 29 recorded weed species 13 weeds were therophytes, 15 hemicryptophytes and the only one species was geophyte.

Muhammad *et al*. (2005) recorded the analytical characteristics of 35 weeds of 20 families in wheat crop of Tehsil Gojra (T.T.Singh), Pakistan. They reported 35 weed species belonging to 20 different weed families. *Anagalis arvensis*, *Euphorbia helioscopia* and *Cynodon dactylon* exhibited highest importance value index i.e. 28.25, 19.85 and 19.04 respectively. Shah and Khan (2006) prepared a checklist of 63 noxious weeds of 32 families which were common in four major crops viz: wheat, maize, rice, tobacco and vegetables of District Mansehra, Pakistan. Muhammad *et al*. (2007) studied the importance value index of 34 weeds of 17 different families of some maize fields of Tehsil Gojra (T.T.Singh), Pakistan. Ebenezer-Ige *et al*. (2008) conducted a phytosociological study of weed flora of three abandoned farm lands within Owo Local Government area of Ondo State, Nigeria. The data indicated that *Chromolaena odorata*, *Tridax procumbens* and *Imperata cylindrica* were the most dominant weed species in the area. The weed biology and its implications for weed management were also discussed by them. Qureshi *et al*. (2009) studied the weed communities of wheat crop different wheat growing localities of District Toba Tek Singh. Total of 38 weed species distributed across 35 genera and 17 families were recorded. Waheed *et al*. (2009) conducted a phytosociological survey to find out the community dynamics of weeds in wheat crop of District RahimYar Khan. Pakistan and reported 37 weed species distributed in 33 genera of 17 different weed families.

**Study Area:** The study area, Tehsil Gojra (T.T.Singh), Pakistan is located at an elevation of 465m from the sea level and situated at the latitude of 31$^{o}$ 25 North and at longitude of 73 $^{o}$ 20 East. The boundaries of Tehsil Gojra are joined on the Eastern side with the Faisalabad District, the West with District Jhang. Its North boundary with District Chiniot and the South with District Toba Tek Singh. The present research work was carried out to find the ecological distribution of weeds of four vegetable crops of Tehsil Gojra (T.T.Singh).

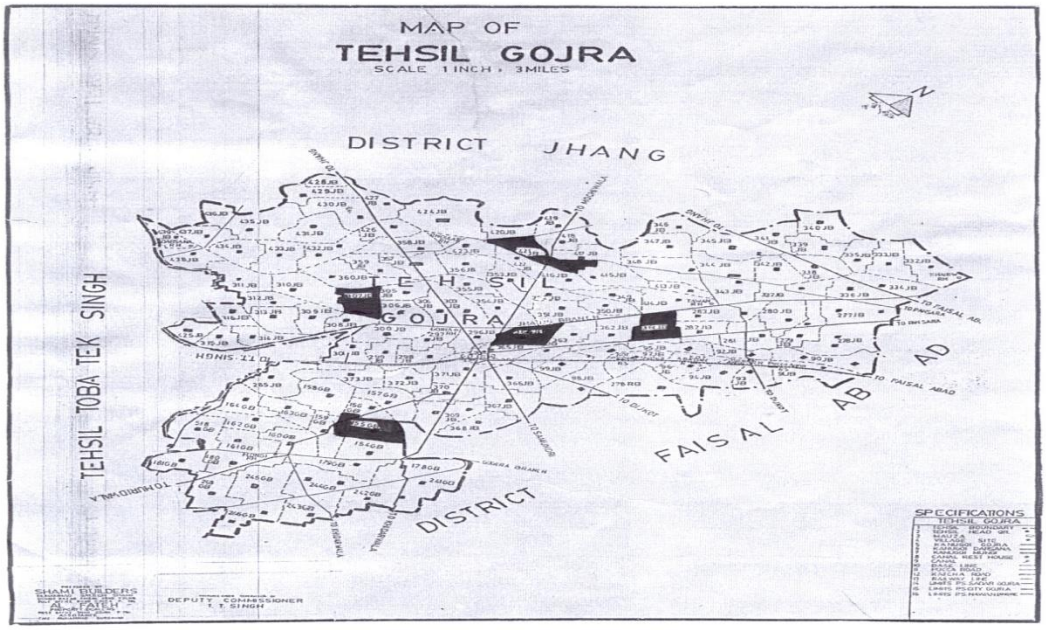


Fig. 1. Topographical details of Study Area (Tehsil Gojra)

## MATERIALS AND METHODS

The present study was undertaken during 2007-2008 to find out the weeds of *Abelmoschus esculentus* Linn., *Cucurbita maxima* (Duch. ex Lam.) Duch. ex Poir., *Luffa cylindrica* (L.) Roem. and *Momordica charantia* L. fields

of five villages of Tehsil Gojra. Three sites were selected in each village. The quadrat method was used for the present study after Clements (1905). By taking each quadrat of 1m × 1m the percentage frequency and density was calculated after Oasting (1956) and Ambasht and Ambasht (1969) respectively in order to find out the Family Importance Value Index (FIVI) of the weeds (Curtis, 1959). The weed species were classified in to different categories on the basis of percentage frequency as shown below after Memon *et al*. (2003). The plants were collected, dried, preserved and identified with the help of available literature (Nasir and Ali, 1971-1995). The voucher specimens were deposited in Dr. Sultan Ahmad Choudhary Herbarium Botany Department; GC University Lahore, Pakistan.

**Categories of weed species according to % frequency**

| S. No. | Weed Category | % Frequency |
|---|---|---|
| 01 | Assertive | Species having more than 60 % frequency |
| 02 | Ascendant | Species having frequency between 50-60 % |
| 03 | Average | Species having frequency between 30-49 % |
| 04 | Below average | Species having frequency below 30 % |

**RESULTS**

Total 40 weed species were collected from *Abelmoschus esculentus* Linn., *Cucurbita maxima* (Duch.ex Lam.) Duch. ex Poir., *Luffa cylindrica* (L.) Roem. and *Momordica charantia* L. crop fields of Tehsil Gojra (T.T.Singh). Out of these 40 weed species 35 weed species were below average, 3 weed species were average, one was average and one weed species was assertive according to the percentage frequency distribution as depicted in Table 1. *Abelmoschus esculentus* vegetable fields contain 23 weed species, *Cucurbita maxima* vegetable fields contain 29 weed species, *Luffa cylindrica* contain 24 weed species and *Momordica charantia* contain 22 weed species in vegetable crop fields of Tehsil Gojra. Seven weed species were found to be common in all the vegetable crops i.e. *Cynodon dactylon, Dactyloctenium scindicum, Echinochloa colona, Digera arvensis, Convolvulus arvensis, Malvestrum coromendelianum and Polygonum plebejum* as shown in Table 1.

These 40 weed species were distributed among two monocot families and the 15 dicot families. Out of the two monocot families 10 weed species were only present in family Poaceae having family importance value index (FIVI) 5.40 and the second monocot family was Cyperaceae containing only one weed species having family importance index (FIVI) 2.67. Remaining 15 dicot families contain the family Asteraceae with highest number of the genera and having family importance value index (FIVI) 5.55, family Euphorbiaceae and Solanaceae contain 4 weed species each and having family importance index (FIVI) 6.11 and 3.68 respectively. Family Amaranthaceae and Boraginaceae contain 2 weed species each having family importance value index (FIVI) 6.65 and 3.05 respectively. Family Aizoaceae, Asclepiadaceae Capparidaceae, Chenopodiacea, Convolvulaceae, Cucurbitaceae, Malvaceae, Polygonaceae, Scirphulariaceae and Umbellifereae contain 1 weed species each having family importance value index (FIVI) 3.55, 4.70, 2.71, 2.46, 20.73, 3.09, 15.04, 9.61, 2.78 and 2.47 respectively as shown in Table 1.

Family Poaceae contain weed species *Brachieria cruciformis, Brachieria reptans, Cynodon dactylon, Dactyloctenium scindicum, Digitaria corymbosa, Dinebra retroflexa, Echinochloa colona, Imperata cylindrica, Setaria pumila and Sorghum halepense* having importance value index (IVI) 4.01, 2.94, 23.2, 4.52, 3.02, 2.23, 3.02, 2.51, 6.58 and 2.20 respectively. Family Cyperaceae contain only one weed species i.e. *Cyprus rotundus* having IVI value 2.67 as shown in Table 2.

Family Asteraceae contain weed species *Cichorium intybus*, *Conyza ambigua*, *Eclipta alba*, *Launaea nudicaulis, Parthenium hysterophorous*, *Phyla nodiflora* and *Sonchus asper* having IVI value 3.18, 3.51, 5.06, 4.51, 5.20, 5.46 and 11.93 respectively. Family Euphorbiaceae contain weed species *Croton sparsiflorus, Chrozophora tinctoria*, *Euphorbia hirta* and *Euphorbia prostrata* having IVI value 5.28, 3.70, 7.71 and 6.30 respectively. Family Solanaceae contain weed species *Nicotiana plumbaginifolia*, *Physalis divaricata, Solanum nigrum* and *Withania somnifera* having IVI value 5.99, 1.49,4.23 and 3.02 respectively as shown in Table 2.

Table 1. Occurrence & Family Importance Value Index (FIVI) of weed species.

| S. No. | Family | Weed Species | *V1 | *V2 | *V3 | *V4 | *FIVI |
|---|---|---|---|---|---|---|---|
| 1 | Poaceae | 1. *Brachieria cruciformis* (J.E.Sm.) Stapf. | + | + | - | - | **5.40** |
| | | 2. *Brachiaria reptans* (Linn.) (Gardner & Hubbard) | - | - | - | + | |
| | | 3. *Cynodon dactylon* (Linn.) Pers. | + | + | + | + | |
| | | 4. *Dactyloctenium scindicum* Bioss. | + | + | + | + | |
| | | 5. *Digitaria corymbosa* (Roxb.) Merrill | + | - | + | - | |
| | | 6. *Dinebra retroflexa* (Vahl.) Panzer | - | - | + | - | |
| | | 7. *Echinochloa colona* L. | + | + | + | + | |
| | | 8. *Imperata cylindrica* L. | - | - | + | + | |
| | | 9. *Setaria pumila* (Poir.) Roem & Schult | - | + | + | + | |
| | | 10. *Sorghum halepense* L. Pers. | + | + | - | + | |
| 2 | Cyperaceae | 1. *Cyprus rotundus* L. | + | - | - | + | **2.67** |
| 3 | Asteraceae | 1. *Cichorium intybus* L. | - | - | - | + | **5.55** |
| | | 2. *Conyza ambigua* Dc. | - | + | - | + | |
| | | 3. *Eclipta alba* (L.) Hasskl. | + | + | - | - | |
| | | 4. *Launaea nudicaulis* Hk.f. | + | + | + | - | |
| | | 5. *Parthenium hystenoph*orum | - | - | + | - | |
| | | 6. *Phyla nodiflora* (L.) Greene | + | + | + | - | |
| | | 7. *Sonchus asper* (L.) Hill | - | + | - | + | |
| 4. | Euphorbiaceae | 1. *Croton sparsiflorus* (Morong) | + | + | - | - | **6.11** |
| | | 2. *Crozophora tinctoria* (L.) Raf. | - | + | - | + | |
| | | 3. *Euphorbia hirta* L. | + | + | + | - | |
| | | 4. *Euphorbia prostrata* Ait. | - | + | + | - | |
| 5. | Solanaceae | 1. *Nicotiana plumbaginifolia* Viv. | - | - | + | - | **3.68** |
| | | 2. *Physalis divaricata* D. Don | + | + | - | + | |
| | | 3. *Solanum nigrum* L. | - | + | + | + | |
| | | 4. *Withania somnifera* (L). Dunal | + | + | - | - | |
| 6. | Amaranthaceae | 1. *Amaranthus viridus* L. | + | - | + | - | **6.65** |
| | | 2. *Digera arvensis* Forssk. | + | + | + | + | |
| 7. | Boraginaceae | 1. *Cynoglossum lanceolatum* Forssk. | - | + | + | + | **3.05** |
| | | 2. *Heliotropium curassavicum* L. | + | + | - | - | |
| 8. | Asclepiadaceae | 1. *Calotropis procera* (Ait.) Ait.f. | - | + | + | - | **3.55** |
| 9. | Aizoaceae | 1. *Portulacastrum* sp. L. | + | - | - | + | **4.70** |
| 10. | Capparidaceae | 1. *Cleome viscosa* L. | - | + | + | - | **2.71** |
| 11. | Chenopodiaceae | 1. *Chenopodium album* L. | + | - | + | + | **2.46** |
| 12 | Convolvulaceae | 1. *Convolvulus arvensis* L. | + | + | + | + | **20.73** |
| 13. | Cucurbitaceae | 1. *Cucumis prophetarum* L. | - | - | + | - | **3.09** |
| 14. | Malvaceae | 1. *Malvastrum coromendelianum* (L.) Garcke. | + | + | + | + | **15.04** |
| 15. | Polygonaceae | 1. *Polygonum plebejum* R.Br. | + | + | + | + | **9.61** |
| 16. | Scorphulariaceae | 1. *Mazus rugosus* Lour. | + | + | - | - | **2.78** |
| 17. | Umbelliferae | 1. *Anethum graveolens* L. | - | + | - | + | **2.47** |

**Key to abbreviations:**

*V1: *Abelmoschus esculentus* vegetable crop
*V2: *Cucurbita maxima* vegetable crop
*V3: *Luffa cylindrica* vegetable crop
*V4: *Momordica charantia* vegetable crop
+: The presence of weed in particular crop
- : The absence of weed in particular crop
*FIVI: Family Importance Value Index

Family Amaranthaceae contain weed species *Amaranthus viridus* and *Digera arvensis* having IVI value 4.63 and 7.68 respectively. Family Boraginaceae contain weed species *Cynoglossum lanceolatum* and *Heliotropium curassavicum* having IVI value 1.76 and 4.35 respectively. Family Ascelpiadaceae, Aizoaceae, Capparidaceae, Chenopodiaceae, Convolvulaceae, Cucurbitaceae, Malvaceae, Polygonaceae, Scorphulariaceae and Umbelliferae contain weed species *Calotropis procera*, *Portulacastrum* sp., *Cleome viscosa*, *Chenopodium album*, *Convolvulus arvensis*, *Cucumis prophetarum*, *Malvastrum coromendelianum*, *Polygonum plebejum*, *Mazus rugosus* and *Anethum graveolens* respectively having IVI value 3.55, 4.70, 2.71, 2.46, 20.73, 3.09, 15.04, 9.61, 2.78 and 2.47 respectively as depicted in Table 2.

Table 2. Importance Value Index (IVI) of weed species.

| Family | Weed Species | Weed Category | % *Freq. | % *Dens. | *R.F. | *R.D. | *IVI |
|---|---|---|---|---|---|---|---|
| Poaceae | *Brachieria cruciformis* (J.E.Sm.) Stapf. | Below average | 9.44 | 7.00 | 4.42 | 3.60 | 4.01 |
| | *B. reptans* (Linn.) (Gardner & Hubbard) | Below average | 7.31 | 5.00 | 3.32 | 2.57 | 2.94 |
| | *Cynodon dactylon* (Linn.) Pers. | Assertive | 78.21 | 21.13 | 35.58 | 10.82 | 23.2 |
| | *Dactyloctenium scindicum* Bioss. | Below average | 14.25 | 5.35 | 6.48 | 2.57 | 4.52 |
| | *Digitaria corymbosa* (Roxb.) Merrill | Below average | 8.75 | 4.00 | 3.98 | 2.06 | 3.02 |
| | *Dinebra retroflexa* (Vahl.) Panzer | Below average | 6.43 | 3.00 | 2.92 | 1.54 | 2.23 |
| | *Echinochloa colona* L. | Below average | 8.75 | 4.00 | 3.98 | 2.06 | 3.02 |
| | *Imperata cylindrica* L. | Below average | 8.78 | 3.00 | 3.99 | 1.03 | 2.51 |
| | *Setaria pumila* (Poir.) Roem & Schult | Below average | 18.78 | 9.13 | 8.54 | 4.63 | 6.58 |
| | *Sorghum halepense* L. Pers. | Below average | 6.31 | 3.00 | 2.87 | 1.54 | 2.20 |
| Cyperaceae | *Cyprus rotundus* L. | Below average | 7.21 | 4.00 | 3.28 | 2.06 | 2.67 |
| Asteraceae | *Cichorium intybus* L. | Below average | 10.61 | 3.00 | 4.82 | 1.54 | 3.18 |
| | *Conyza ambigua* Dc. | Below average | 10.91 | 4.00 | 4.96 | 2.06 | 3.51 |
| | *Eclipta alba* (L.) Hasskl. | Below average | 13.21 | 8.00 | 6.00 | 4.12 | 5.06 |
| | *Launaea nudicaulis* Hk.f. | Below average | 11.92 | 7.00 | 5.42 | 3.60 | 4.51 |
| | *Parthenium hystenoph*orum L. | Below average | 13.78 | 8.00 | 6.29 | 4.12 | 5.20 |
| | *Phyla nodiflora* (L.) Greene | Below average | 16.13 | 7.00 | 7.33 | 3.60 | 5.46 |
| | *Sonchus asper* (L.) Hill | Average | 33.21 | 17.00 | 15.10 | 8.76 | 11.93 |
| Euphorbiaceae | *Croton sparsiflorus* Morong | Below average | 15.31 | 7.00 | 6.96 | 3.60 | 5.28 |
| | *Crozophora tinctoria* (L.) Raf. | Below average | 11.78 | 4.00 | 5.35 | 2.06 | 3.70 |
| | *Euphorbia hirta* L. | Below average | 23.73 | 9.00 | 10.79 | 4.63 | 7.71 |
| | *E. prostrata* Ait. | Below average | 19.81 | 7.00 | 9.01 | 3.60 | 6.30 |
| Solanaceae | *Nicotiana plumbaginifolia* Viv. | Below average | 17.31 | 8.00 | 7.87 | 4.12 | 5.99 |
| | *Physalis divaricata* D. Don | Below average | 4.31 | 2.00 | 1.96 | 1.03 | 1.49 |
| | *Solanum nigrum* L. | Below average | 11.81 | 6.13 | 5.37 | 3.09 | 4.23 |
| | *Withania somnifera* (L.) Dunal | Below average | 8.75 | 4.00 | 3.98 | 2.06 | 3.02 |
| Amaranthaceae | *Amaranthus viridus* L. | Below average | 11.33 | 8.00 | 5.15 | 4.12 | 4.63 |
| | *Digera arvensis* Forssk. | Below average | 21.31 | 11.31 | 9.69 | 5.67 | 7.68 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Boraginaceae | *Cynoglossum lanceolatum* Forssk. | Below average | 4.38 | 3.00 | 1.99 | 1.54 | 1.76 |
| | *Heliotropium curassavicum* L. | Below average | 15.78 | 4.00 | 7.17 | 1.54 | 4.35 |
| Asclepiadaceae | *Calotropis procera* (Ait.) Ait.f. | Below average | 12.23 | 3.00 | 5.56 | 1.54 | 3.55 |
| Aizoaceae | *Portulacastrum* sp. L. | Below average | 12.77 | 7.11 | 5.80 | 3.660 | 4.70 |
| Capparidaceae | *Cleome viscosa* L. | Below average | 8.75 | 4.12 | 3.98 | 1.54 | 2.71 |
| Chenopodiaceae | *Chenopodium album* L. | Below average | 8.90 | 6.00 | 1.84 | 3.09 | 2.46 |
| Convolvulaceae | *Convolvulus arvensis* L. | Ascendant | 58.31 | 29.14 | 26.52 | 14.94 | 20.73 |
| Cucurbitaceae | *Cucumis prophetarum* L. | Below average | 10.23 | 3.00 | 4.65 | 1.54 | 3.09 |
| Malvaceae | *Malvastrum coromendelianum* (L.) Garcke. | Average | 30.83 | 13.11 | 14.02 | 6.70 | 15.04 |
| Polygonaceae | *Polygonum plebejum* R.Br. | Average | 32.11 | 9.01 | 14.60 | 4.63 | 9.61 |
| Scorphulariaceae | *Mazus rugosus* Lour. | Below average | 7.73 | 4.00 | 3.51 | 2.06 | 2.78 |
| Umbellifereae | *Anethum graveolens* L. | Below average | 5.31 | 3.00 | 3.41 | 1.54 | 2.47 |

**Key to abbreviations:**
% *Freq.: Percentage frequency, % *Dens.: Percentage density, *R.F.: Relative frequency
*R.D.: Relative density and *IVI: Importance Value Index

While studying the weed categories according to the percentage frequency distribution *Cynodon dactylon* was found to be assertive having maximum percentage frequency 78.21. One weed species i.e. *Convolvulus arvensis* was found to be ascendant having 58.31% frequency. Three weed species i.e. *Sonchus asper, Malvestrum coromendelianum and Polygonum plebejum* were found to be average having 33.21%, 32.11% and 30.83% frequency respectively. Remaining thirty five weed species were found to be below average according their percentage frequency distribution as shown in Table 1.

## DISCUSSION

Agriculture is the largest sector of Pakistan's economy. Most of the population, directly or indirectly is dependent on this sector which is contributing about 24 percent in our Gross Domestic Product (GDP). It accommodates half of our employed labour force, largest source of foreign exchange earnings and feeds whole rural and urban population. Realizing its importance, in recent years, due to persistent hikes in the prices of essential commodities like pulses, onions, potatoes, chilies and tomatoes have gained economic importance (Anonymous, 2008). Apart from the economic importance of the vegetable crops, the field management of vegetable crops was found lacking. Due to which the production of the cash crops especially the vegetable is not up to the mark with the world standards in which many factors are contributing out of which problem of weed is the biggest contributor in the loss of total production. These losses occur due to the competition for nutrients, water, solar radiations, space and other growing factors (Rao, 1983; Malik, 2002).

Total forty weed species were distributed among the seventeen different families among which the distribution of the *Cynodon dactylon*, *Cyperus rotundus* and *Chenopodium album* are markedly significant as in other studies (Larik, 1987; Zabta *et al*., 1990; Mumtaz *et al*., 1991). Presence of the *Chenopodium album* in three of the vegetable crops confirms it as the most densely distributed weed of the cash crops (Ahamd *et al*., 1994). *Convolvulus arvensis* was considered to be the most abundantly found obnoxious weed of the major cash crops but it is now found everywhere as its results with 58.31% frequency distribution confirms the previous studies (Qureshi and Bhatti 2001a; Jakhar *et al*., 2005). *Parthenium hysterophorus* an alien weed species was found to be newly emerged weed of vegetable crop which confirms its establishment as the alarming threat to the crop economy (William and Grovers, 1980; Javaid and Anjum, 2005). Along with these the presence of the *Cynodon dactylon*, *Cyperus rotundus* and *Echinochloa colona* are among the major contributor weeds to reduce the production of the crop as their ecological distribution in this study confirms the earlier results (Holm *et al*., 1977). In this study besides the negative impacts of the weeds on crops we found that there are certain weeds which can also be used ethnobotanically and ethnomedicinally such as *Chenopodium album*, used in certain cooking recipes and *Cichorium intybus*, *Cynodon*

*dactylon*, *Convolvulus arvensis*, *Cyperus rotundus*, *Sonchus asper*, *Solanum nigrum* and *Withania somnifera* are being used for medicinal remedies which confirms the previous studies (Ahmad *et al*., 2006; Ahmad *et al*., 2006; Nejad *et al*., 2006; Shah and Khan, 2006).

The values of the population dynamics of individual weed species needs to be fully apprised because the weed abundance is the reflection of the population growth rates of the weed communities as it is resulted due to the weed management. By keeping all the aspects of the weeds as threat to crop economy proper weed management should be planned and this taxo-ecological study will help to identify and recognize the biological and ecological factors for the long term persistence of the weeds within the crop fields.

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