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WEED DIVERSITY AND THEIR SEASONAL FLUCTUATIONS IN GANDHINAGAR DISTRICT, GUJARAT, INDIA

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ABSTRACT:

To find the diversity of weeds of Gandhinagar district the study was carried out for period of 2 years from March '2011 to February '2013. The present study was carried out on 20 selected sites of four talukas of Gandhinagar district. Weed collection was made with repeated field trips encompassing all the different seasons. During the field work and collection, special attention was given to record the characters of weeds. Weeds have been investigated by collection and identification. During summer season total 44 species, during monsoon season total 67 species and during winter season total 73 species were recorded in present study. Total 184 weed species were recorded.

KEYWORDS: *Weed diversity, Gandhinagar, Gujarat, India.*

INTRODUCTION:

“Weed” is applied to many plants that grow and reproduce aggressively and invasively. In general therefore, a weed is a plant that is considered by the user of the term to be a nuisance. They are usually the native plants which are best adapted to the environment where they grow, so can easily out-compete with our crop plants. It traditionally has been defined as “A herbaceous plant not valued for use or beauty, growing wild.” According to Brenchely (1920) weed is a plant that

grows so luxuriantly that it chocks out of all other plants that possess more valuable nutritive properties. According to Gohil (2010) “A weed is a plant out of place”.

MATERIALS AND METHODS:

The present study was undertaken during year 2011 to 2013. Extensive collection was made with repeated field trips encompassing all the different seasons. During the field work and collection, special attention was given to record the characters of weeds. Identification of the weed species was done by ‘Flora of Gujarat State’ (Shah, 1978). Quantitative analysis of weeds was done by types of weeds and season wise distribution of weeds.

RESULTS AND DISCUSSION:

The present study was carried out for period of 2 years from March ‘2011 to February ‘2013. Total 184 weed species were recorded in present study. This study was carried out most of the farmlands covered with weeds. Many of the 184 weed species identified occurred in all the three seasons and no single season contained all the 184 weed species.

Profile of types of weed species across season

Acrachne racemosa (Heyne ex R. & S.) Ohwi, *Aristida funiculata* Trin. & Rupr. Sp. Gram., *Avena sterilis* L., *Brachiaria setigera* (Retz.) Hubb, *Cenchrus pennisetiformis* Hochst. & Steud., *Chloris montana* Roxb. Hort. Beng., *Chloris virgata* Sw. Fl. Ind. Occ., *Cynodon dactylon* (L.) Pers. Syn., *Dactyloctenium aegyptium* (L.) P. Beauv., *Dichanthium annulatum* (Forsk.) Stapf., *Digitaria adscendens* (H.B. & K.) Henrard, *Digitaria ciliaris* Prain, *Dinebra retroflexa* (Vahl) Panz., *Echinochloa colonum* (L.) Link. Hort. *Chenopodium album* L. *Chenopodium murale* L. *Amaranthus spinosus* L. *Amaranthus viridis* L. were recorded dominant during winter season. Poaceae is the largest family among the monocotyledon recorded during winter season and Amaranthaceae, Asteraceae, convolvulaceae and chenopodiaceae are main families of dicotyledon recorded during the same season. Poaceae family represented the highest number of species. In dicotyledone, Aateraceae family represented the highest number of genera and species. *Commelina benghalensis* L., *Commelina diffusa* Burm. F. Fl. Ind., *Cyperus compressus* L., *Cyperus esculentus* L., *Cyperus rotundus* L., *Tephrosia villosa* (L.) Pers. were recorded dominant during monsoon. Commelinaceae, Cyperaceae, Papilionaceae and Cesalpiniaceae family recorded during monsoon season. *Argemon maxicana* L., *Blepharis repens* (Vahl) Roth, *Cadaba fruticosa* (L.) Druce, *Capparis deciduas* (Forsk.) Edgew., *Mollugo nudicaulis* Lam. Encycl were recorded during summer season. Amaranthaceae, Asteraceae, Papilionaceae and Poaceae family observed dominant in Gandhinagar district due to their high number of recorded species. Udoh *et al.* (2007) recorded total of 33 dominant weed species were identified of Poaceae, Asteraceae, Euphorbiaceae,

Febaceae, Cyperaceae, Commelinaceae, Nyctaginaceae and Sterculiaceae families. Gohil (2010) recorded total 203 weed angiosperm plant species in Valsad district, South Gujarat in his study. Jangid and Sharma (2011) recorded 204 weed species in Modasa taluka of Sabarkantha district. The present study shows that maximum numbers of weed species (73 species) were found in winter season. In monsoon it was recorded quite high (67 species) (Table – 01). In present study the % population was found highest (39.67 %) in winter because of the highest number of weed species was found in this season. In monsoon it was recorded quite high (36.41%). During summer season the % population of weeds was recorded quite low because the total no. of weed sp. was also recorded quite low (44 species). It was 23.91 % of weeds in summer season (Table – 01).

In Gandhinagar district, winter weeds are most dominant represented growth with 39.67% species. In summer the percentage of weeds were recorded 23.91%, in monsoon the percentage of weeds were recorded 36.41%. This is shown in Table – 01.

CONCLUSION:

Total 184 weed species were recorded in Gandhinagar district. Out of these 73 species (39.67%) were recorded during winter season. In summer the percentage of weeds were recorded 23.91%, in monsoon the percentage of weeds were recorded 36.41%. Different seasonal weeds show very little variation in their percentage representation over different season.

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