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Research Article

Weed Flora and their Management in Herbal Garden

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Abstract

An Herbal Garden has been established for the purpose of ex-situ conservation of the Medicinal and Aromatic plants from Chhattisgarh in GGV-(A Central University) Bilaspur Chhattisgarh, India. A field visit in the area of Herbal Garden was made from starting of its development to record the weed species of the plants. Present study focused on the presence and diversity of weeds in Herbal Garden and possible management strategy to control on their spreading in the Herbal Garden. From the area of the study 30 species of the weeds belonging to 12 families were recorded and listed in Table - 1 following their Botanical Name, Family, Habit, Propagation mode. Sharp monitoring was made for identification as well as to follow their removal or avoiding their spreading from the Herbal Garden. Maximum 20 weeds were herbaceous in their habit.

Keywords: Diversity, Herbal Garden, Management, Weed.

Introduction

Weed flora of the newly developed Herbal Garden for ex-situ conservation of the Medicinal & Aromatic Plants was assessed to record their presence and for it's possible management. Weeds are reason for reduction of the crop production or disturbing the planted specific plants in the field. Numerous seeds produced by these weeds and are remarkable for their wide range of seeds dispersal and capacity to tolerance in adverse environmental condition. As weeds are same old in their presence as the crop plants.

Weeds are commonly growing with cropping plants. Weeds are referred as unwanted plants (Kasara et al, 1998). Weeds are also useful as Herbal Medicines (Govindiah, 1981). Floristic diversity and indigenous uses of weeds in maize crops was recorded by Pandal et al, 2013. Weed flora in maize crop fields was assessed by Singh and Dangwal 2013. Much seed production, rapid growth tendency as well as aggressively spreading in the fields was noticed by Dangwal et al 2010. Marwat et al recorted in year 2012 as biodiversity of grassy weeds and their ethno botanical importance in dera ismail khan district KPK Pakistan.

High degree of seed production support rapid propagation (Chaudhari, 1992). Rajput et al recorded the Check list of the weeds found in cotton crops, cultivated in Taluka Ubauro, District Sukkur, Pakistan. Weed species diversity in organic and integrated farming systems (Jastrzebska et al, 2013). Weed flora analysis of organic farming in the Fehar Koros region, Weed flora analysis of organic farming in the Fehar Koros region, was examined by Zalai, 2011. Hyvonen and Salonen 2002 recorded Weed species diversity and community composition in cropping practices at two intensity levels.

A survey on weed diversity in coastal rice fields of Sebarang Perak in peninsular Malaysia. The journal of Animal and Plant Sciences was done by Hakim et al, 2013. Weeds plants vegetation composition may be

differ in different fields' base on location (Uddin et al 2010). It is also affected by the local climatic conditions.

Karim et al studied in 2004 on Weed problems and their management in rice fields of Malaysia. Weeds are undesirable plants in cropping fields (Patil et al, 2010.). Studies on weed diversity of wheat (*Triticum aestivum* L.) crop fields of Marathwada region was made by Dhole et al, 2013. A quantities estimation of weeds of sugarcane crop was assessed by Takim and Amodu 2013.

Materials and Methods

By continuous observations in the Herbal Garden weed species of the plants were recorded and identified by using available literatures. These are classified with their related information in Table 1, 2 and 3.

Table -1. Weed Plant species Diversity in the Herbal Garden.

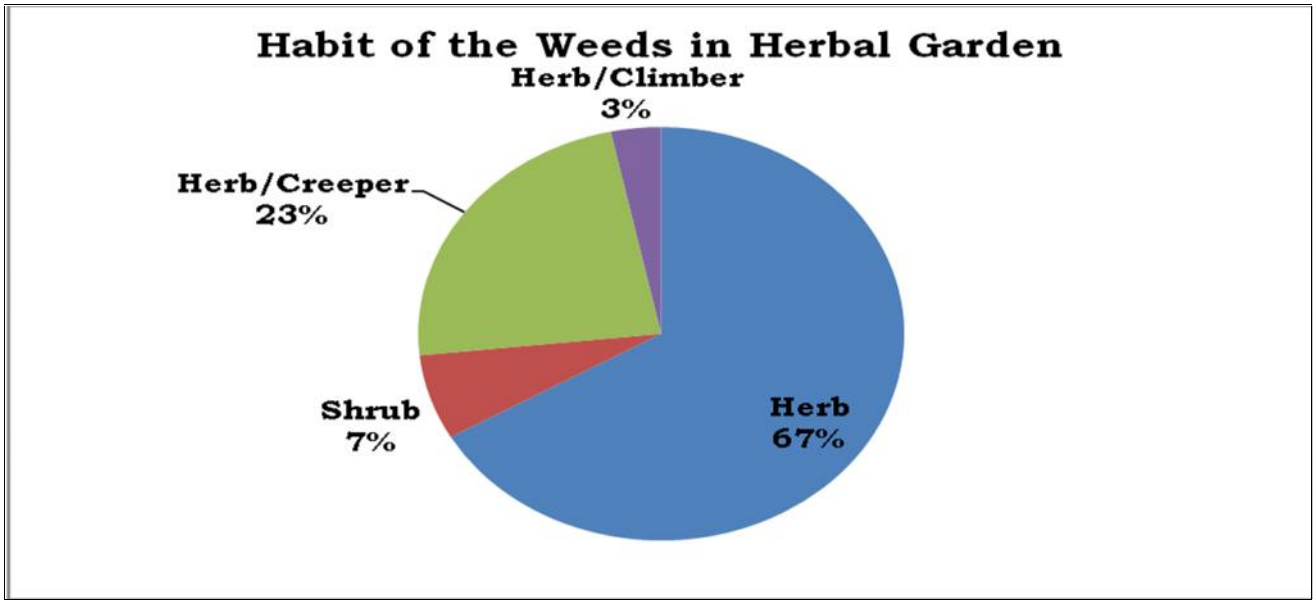
S. No.	Botanical Name	Family	Habit	Propagation
1.	*Ageratum conyzoides* L.	Asteraceae	Herb	Seed
2.	*Alternanthera tenella* Colla	Amaranthaceae	Herb/Creeper	Seed
3.	*Alysicarpus vaginalis (*L.) DC.	Fabaceae	Herb/Creeper	Seed
4.	*Amaranthus retroflexus* L.	Amaranthaceae	Herb	Seed
5.	*Cardamine hirsute* L.	Brassicaceae	Herb	Seed
6.	*Centotheca lappacea* (L.) Desv.	Poaceae	Herb	Seed
7.	*Chloris barbata* Sw.	Poaceae	Herb	Seed
8.	*Crassocephalum crepidioides* (Benth.) S. Moore	Asteraceae	Herb	Seed
9.	*Croton sparsiflorus* Morong	Euphorbiaceae	Herb	Seed
10.	*Desmodium triflorum* DC	Fabaceae	Herb/Creeper	Seed
11.	*Digitaria ciliaris* (Retz.) Koeler	Poaceae	Herb	Seed
12.	*Echinochloa colona* (L.) Link	Poaceae	Herb	Seed
13.	*Eleusine indica* (L.) Gaertn.	Poaceae	Herb	Seed
14.	*Emilia sonchifolia* (L.) DC. ex Wight	Asteraceae	Herb	Seed
15.	*Evolvulus nummularius* (L.) L.	Fabaceae	Herb/Creeper	Seed
16.	*Gamochaeta calviceps* (Fernald) Cabrera.	Asteraceae	Herb	Seed
17.	*Isachne globosa* (Thunb.) O. Ktze.	Poaceae	Herb	Seed
18.	*Kyllinga nemoralis* L.	Cyperaceae	Herb	Seed
19.	*Medicago polymorpha* L.	Fabaceae	Herb/Creeper	Seed
20.	*Merremia gangetica* Cufod.	Convolvulaceae	Herb/Creeper	Seed
21.	*Oldenlandia corymbosa* L.	Rubiaceae	Herb	Seed
22.	*Panicum dichotomiflorum* Michx.	Poaceae	Herb	Seed
23.	*Panicum repens* L.	Poaceae	Herb	Seed
24.	*Portulaca oleracea* L.	Portulacaceae	Herb/Creeper	Seed
25.	*Rumex dentatus* L.	Polygonaceae	Herb	Seed
26.	*Sesbania sesban* (Jacq.) W. Wight	Fabaceae	Shrub	Seed
27.	*Spermacoce articularis* L. F.	Rubiaceae	Herb	Seed
28.	*Triumfetta rhomboidea* Jacq.	Malvaceae	Shrub	Seed
29.	*Urochloa mutica* (Forssk.) T.Q.	Poaceae	Herb	Seed
30.	*Vigna luteola* (Jacq.)	Fabaceae	Herb/Climber	Seed
Total			**30**	

Table - (2) Family wise Diversity of the Weeds in Herbal Garden.

S. No.	Family		Herb	Herb/ Climber	Shrub	Herb/ Creeper	Total
1.	Asteraceae	Herb	4	-	-	-	4
2.	Amaranthaceae	Herb/ Creeper	1	-	-	1	2
3.	Brassicaceae	Herb	1	-	-	-	1
4.	Convolvulaceae	Herb/ Creeper		-	-	1	1
5.	Cyperaceae	Herb	1	-	-	-	1
6.	Euphorbiaceae	Herb	1	-	-	-	1
7.	Fabaceae	Shrub	-	1	1	4	6
8.	Malvaceae	Shrub	-		1		1
9.	Poaceae	Herb	9				9
10.	Polygonaceae	Herb	1				1
11.	Portulacaceae	Herb/ Creeper	-	-	-	1	1
12.	Rubiaceae	Herb	2	-	-	-	2
Total							**30**

Table - 3. Habit of the Weeds in Herbal Garden

S. No.	Habit Type	Number of the Aromatic Plants
1.	Herb	20
2.	Shrub	2
3.	Herb/Creeper	7
4.	Herb/Climber	1
Total		**30**



All possible measures were applied to control on the weeds dispersal in the Herbal Garden developed for the ex-situ conservation of the Medicinal and Aromatic Plants.

Completely removal strategy was mostly applied to control the weed population in Herbal Garden. Application of weed killing chemicals was also applied before introducing the Medicinal and Aromatic Plants (MAPs) in Herbal Garden.

Results and Discussion

Result of the present study shown in Table - 1 with the related information of individuals weed recorded from Herbal Garden during the tenure of its development/plantation.

Weeds were Herb, Shrub, Herb/Creeper, and Herb/Climber in nature. Weeds having tendency of numerous seed production and efficient capability to resist the adverse environmental condition.

Under the current study there are 30 species of weeds were recorded and arranged in tables for easily and clear understanding. Total recorded weeds were belonging to 12 varied families. A maximum member of the weeds noticed from the family Poaceae than in second position 6 members of family Fabaceae, 4 members of the family Asteraceae were recorded from the Herbal Garden. Rest of the families includes one - two members of the weeds.

Most of the members of the weeds found in herbaceous in nature as they registered 20. 2 shrub nature, 7 Herb/creeper and 1 Herb/Climber weeds were found in the Herbal Garden.

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