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DIVERSITY OF WEEDS IN VSK UNIVERSITY CAMPUS BALLARI, KARNATAKA

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ABSTRACT

The present investigation was carried out to identify the weeds and their interrelationships, structure and composition in VSK university, The field study was conducted during the year 2021 to 2023. Weeds are considered undesirable unattractive or troublesome, especially one that grows where it is not wanted and often grows or spreads fast or takes the place of desired plants. Some alien weeds are present among those we have recorded. Weeds move from place of their origin by seeds or other parts to a new area and establish there and become introduces weeds such weeds are called alien weeds. The impact /effect of weeds are reduction in crop yield, increasing in cost of cultivation, the quality of yield produce is reduced, weeds harbour increases insect, pests and diseases etc. In the present survey majority of plants belong to the family was Asteraceae (11 spp.) followed by Euphorbiaceae (7), Fabaceae (6), Poaceae (4) Amaranthaceae (3), Capparaceae (2), Apocynaceae (1), Aristlochiaceae (1), Asparagaceae (1), Solvadoraceae (1), Sapindaceae (1), Nyctaginaceae (1), Cleomaceae (1), Acanthaceae (1), Zygophyllaceae (1), Malvaceae (1), Aizoaceae (1) and the majority of weeds we found to have high medicinal values like *Tephrosia purpurea, Cleome viscosa, Fagonia indica, Cressa cretica, Senna italica* etc. This study provides us most needed information about distribution of weed community; it also gives basic information about weeds. Interesting thing noticed in the study was there were huge numbers of dominant weeds in both the study areas. This is alarming situations for which control measures must be initiated.

(Key words: Senna, weeds, diversity, VSK, Ballari)

INTRODUCTION

The convention for biological diversity (1992) envisage "biological invasion of alien species as the second worst threat after habitat destruction". Weeds are unintentionally sown, generally obnoxious, troublesome plants which grow in places where they are not wanted. They are important not only because they are undesirable and obnoxious, but also because some of them act as alternate hosts in carrying various microbial pathogens, which causes diseases in crop plants resulting in the heavy yield losses in all crop fields. Many in invasive alien plant species also cause heavy economic and environmental damage. Weeds also endanger biodiversity; affect human and animal health, aquatic ecosystem and grass lands. Agriculture is the mainstay of Indian economy and Karnataka state has diverse agro-ecological regions comprising different crops and cropping systems and accordingly there is a diversity of weed flora associated with different crops. Therefore, control and eradication of weeds is the paramount importance in predominantly agriculture based country. There has been tremendous interest in the study of weeds and their impact on native diversity. Weed interference is one of the most important limiting factors which decrease crop yields and consequently global food production weed represent about 0.1% of the world flora and in Agro ecosystems (Mohammadi, 2013). Weeds and crops have co-evolved together right from the prehistoric times as revealed by pollen analysis studies. Weed can suppress crop yield by competing for environmental resources like water, light and nutrients and production of allelopathic compounds. Hence, the weed management have been a major challenge for crop productions from the start of agriculture. At the earlier times, since no synthetic chemicals were known, weed control was achieved by some methods such as hand weeding, crop rotation, polyculture and other management practices that were low input but sustainable. In the present study about 80% of the plant species collected are weedy in nature and are resistant to high temperature and humidity. Such plants are considered high medicinal valued plants. Because most of them are insect/pest resistant, herbicide resistant and hence predators do not consume them. The medicinal values of weeds are mentioned by Sagar and Rajanna (2015) in her book on 'A Handbook on Weeds of Karnataka'. As stated earlier, not all weeds are that much a menace as they are projected to be. Many weeds are actually useful and extremely beneficial to mankind in many respects. Most

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of the weeds are known to have medicinal attributes (Parrotta, 2001). The chemical method of weed control can be very effective in killing the weeds before their emergence as well as post emergence (Deshkari *et al.,* 2019). To complete the life cycle of plants, organic matter as well as elements or nutrients are very essential. The soil constituents are most importance for agriculture (Yadav *et al*., 2019).The productivity of black soils constrained by the excessive contents of basic cations as Fe. (Tamuly and Bastin, 2019).

Useful and effective formulations for controlling insects (Ahmed, 2008), have been indigenously developed from weeds and many of these unwanted plants are gainfully looked upon as sources of antimicrobial and antifungal compounds (Rathore, 2009). Farmers consider weeds which can be used as a food and fodder. Weeds also are important from socio-economic and soil conservation values (Singh and Tulachan, 2002). Vijayanagara Sri Krishnadevaraya University, Ballari is located in a semi-arid zone and comprise of majority of xerophytes and succulents. The campus seemed to be infested by alien species, general weeds of abandoned lands, disturbed lands. When an observation for 2 years from 2021-2023 was made regarding the area where native plant species and weeds were grown together. It was found that weeds were infested to the majority areas reducing the populations of native flora. This observation, prompted us to undertake the Phyto-sociological studies of the weeds of VSK University campus, Ballari. The aim of the present study was to provide the extant of spread of weeds by using combinations of different weedy species that characterize discrete vegetation units in the campus. This study provides the most needed information about distribution of weed community, along with basic information about weeds.

Study area

The area of study was Vijayanagar Sri Krishnadevaraya university, campus is a spacious 95.35 acre campus situated in the Vinayaknagar area of Ballari city,

Ballari city is the northern part of Karnataka, the city covered over an area of 85.95 Km^2 and is situated at an altitude of 485 M from the mean sea level. The coordinates of this city is 15 09È N 76 55È E. Ballari is the head quarters with number of industries and business organizations. Average rainfall of approximately 131 mm in Ballari occurs in the month of September (Sagar, 2019).

MATERIALS AND METHODS

The study was based on extensive and intensive fields surveys of the campus during the peak period of weed growth from 2021-2023 which included seasonal surveys repeatedly in order not to miss any weed species of the campus. The collected plant species were identified by referring local district flora (Seetharam *et al.,* 2000), State flora (Ramaswamy and Razi, 1973; Singh, 1988) and national floras (Hooker, 1872, 1897; Gamble, 1957). The species were pressed and herbarium were prepared for each plant.

Quadrate and phyto-sociological studies

1m x 1m quadrats were laid out at two locations (5 quadrates in each location). The location 1 was the area surrounding the science block and location 2 was the area surrounding boys hostel building. Names of species and number of individual species in each unit were recorded. Percentage frequency, density and abundance were calculated by the formula.

$$\text{Frequency} = \frac{\text{No. of quadrates in which species occurred}}{\text{Total number of quadrate studied}} \times 100$$

$$\text{Abundancy} = \frac{\text{Total number of individuals}}{\text{Number of quadrate occurrence}}$$

$$\text{Density} = \frac{\text{Total number of individuals}}{\text{Number of quadrate studied}}$$

RESULTS AND DISCUSSION

During the study of the weeds in and around Science block and Boys hostel at VSK University campus from 2021-2023, around 53 weedy species were encountered belonging to 21 families, of which Asteraceae (11), Euphorbiaceae (7), Fabaceae (6), Poaceae (4), Amaranthaceae (3), Capparaceae (2) were found dominant followed by Apocynaceae, Acanthaceae, Convolvulaceae, Solanaceae, Malvaceae, Cleomaceae, Oxalidaceae, Zygophyllaceae, Scropulariaceae, Aizoaceae, Sapindaceae, Solvadoraceae, Nyctaginaceae, Asparagaceae, Papaveraceae, families were recorded 1 species each, The plants were enlisted in alphabetical order in Table 1 and 2. Species diversity which also relates 'richness', corresponds to the number of species present and plays major role in community organization. The present study provides to understand species richness, frequency and abundance of the weedy species in VSKU Ballari campus. The most common weeds which exhibited their frequency 100% which were common in both the blocks were *Parthenium hysterophorous, Oxalis corniculata, Cynodon dactylon and Blumea lacera.* Other common species present which were found abundantly in both blocks were *Oxalis corniculata* and *Parthenium hysterophorous*. In both blocks in terms of density common weeds seen were *Oxalis corniculata, Parthenium hysterophorous and Euphorbia hirta*. All these common. Some plants were more dominant in one location and it was not dominant in other location even the soil content and climate is also same. Species diversity which also relates 'richness', corresponds to the number of species present and plays major role in community organization. The present study provides to understand species richness, frequency and abundance of the weedy species in VSKU Ballari campus. The most common weeds which exhibited their frequency 100% which were common in both the blocks were *Parthenium hysterophorous, Oxalis corniculata, Cynodon dactylon and Blumea lacera.* Other common species present which were found abundantly in both the blocks were *Oxalis corniculata and Parthenium hysterophorous*. In both the blocks in terms of density common weeds seen were *Oxalis*

corniculata, Parthenium hysterophorous and Euphorbia hirta. All these are common. Some plants were more dominant in one location and it was not dominant in other location even the soil content and climate is also same. Biological diversity in natural ecosystems can be considered at three main levels: *viz*., genetic diversity, species diversity and ecosystem diversity. Many environmental weeds are capable of causing an impact at one or more of these levels, although the degree of impact is rarely quantitatively determined. (Adair and Grooves, 1998). The impact of weeds is always obscure and it becomes visible when the critical time has gone; whereas that of insects and pathogens is visible at all times. This is the reason the why the weeds are mostly ignored and on contrary the insects and pathogens attacks are given proper heed. (Tiwari, *et al*., 2016). The impact of the invasive species on the quantitative loss of medicinal and other native species in their localities. There was constant losing many medicinally and economically plants due to invasion of the weeds (Sagar *et al.,* 2014). A systematic approach to weed management in agronomic and landscape settings is often needed in order to address both the economic and environmental consequences of invasive weeds and other pests (Weston and Inderjit, 2007). Weeds are plants that are considered undesirable in a crop at a given time. Weeds are harmful for a number of reasons. They reduce crop yields, interfere with the harvest support pathogens and insect pests and contaminate seeds (Daniel and Maryse, 2007). Impact of invasive alien species is also considerably affecting the biodiversity of the area. Extinction of local flora due to alien plant invasion centuries ago, the problem of biological invasion due has received very recently (Rao and Sagar, 2012). In the present study it was observed that weeds are dominating on the native flora which are having medicinal values. Hence, control methods regulating weeds is the need of the hour in the campus.

Surrounding science block

100 % frequency of weed population was recorded for *Parthenium hysterophorous, Oxalis corniculata, Dipteracanthus prostrata, Acalypha indica, Cynodon dactylon, Blumea oxyodenta and Tephrosia purpurea*, while about 80% frequency was recorded for *Croton bonplandinum, Euphorbia thymifolia, Fagonia indica, Azima tetracantha, Chloris bournei, Senna uniflora* and about 60% for *Cyanthillium cinereum, Tragia plukenetti, Prosopis juliflora* and 40% for *Alternanthera paronochioides, Argemone mexicana, Amaranthus viridis*. The species like *Oxalis corniculata, Dipteracanthus prostrata, Euphorbia hirta, Parthenium hysterophorous, Cressa cretica* were found in abundance. In terms of density *Euphorbia hirta, Oxalis corniculata, Parthenium hysterophorous* were dominated. The different diversity indices were also calculated for the weeds. It was found that in species. Simpson diversity index was 0.0692, 0.023, 0.087, Simpson reciprocal index 14.45, 41.76, 11.48, Shannon diversity index 4.505, 5.501, 4.25, Margoloffs index 7.504, 6.414, 7.43, Pielou index 0.151, 0.030, 0.184, Menhinick's diversity index 1.506, 0.919, 1.602, Gini coefficient 0.679, 0.295, 0.710, for density, frequency and abundancy respectively.

The Anova result, reveals that at Science block the average and variance result of density were 3.124528 and 21.41612, abundance were 3.994423 and 21.74134, and frequency were 61.92308 and 1133.484. Their r and p values were not significant.

Surrounding boys hostel

Frequency, abundancy and density: 100% frequency of weed population was recorded for *Alternanthera paronochioides, Croton bonplandinum, Parthenium hysterophorous, Cascabela thevetia, Cleome viscosa, Senna italica, Tragia plukenetti, Cynodon dactylon, Blumea oxyodenta. Chloris barbata, Euphorbia hirta, Oxalis corniculata, Malvastrum coromandelianum.* While about 80% was recorded for *Euphorbia tithymiloides, Gomphrena celosoides, Boerhavia diffusa, Sonchus flaracum, Capparis grandiflora* and 60% for *Acalypha indica, Argemone mexicana, Amaranthus virdis. Cassia auriculata, Cenchrus biflorus, Chloris bournei, Taverneira cuneifolia,* and 40% for *Prosopis juliflora, Dicoma tomentosa, Trianthema portulocastrum, Calotropis gigantea*, and 20% for *Argemone mexicana, Asparagus racemosa, Fagonia indica, Cadaba fruticosa, Cardiospermum helicababum, Pergularia daemia and Calotropis gigantea.* In terms of abundancy species like *Cynodon dactylon, Oxalis corniculata, Tephrosia purpurea, Euphorbia hirta, Parthenium hysterophorous, Cleome viscosa, Blumea lacera* were found to be abundant. The area was being densely populated by species *Cynodon dactylon, Blumea lacera, Blumea oxyodenta, Euphorbia hirta, Oxalis corniculata, Parthenium hysterophorous, and Dipteracanthus prostrata.* The different diversity indices were also calculated for the weeds. Simpson diversity index was 0.065, 0.023, 0.147, Simpson Reciprocal index 15.28, 42.67, 6.782, Shannon diversity index 4.38, 5.517, 3.732, Margoloffs index 6.821, 6.377, 6.248, Pielou index 0.145, 0.028, 0.346., Menhinick's diversity index 1.172, 0.898, 0.826, Gini coefficient 0.703, 0.278, 0.786 for density, frequency and abundance respectively.

The Anova result, reveals that average and variance with regard to diversity at Boys hostel were 4.656604 and 21.41612, and average and variance result of abundance were 4.953846 and 38.91312 and that of frequency were 65.76923 and 1150.377. Their r and p values were not significant.

Table 1. Weed diversity at the Science block in VSKU campus

Sl.no.	Name of the species	Family	No. of Individuals in the Quadrates					Tot. no. of quadrate of occurrence	Tot. no. of quadrate studied	Tot. no. of individuals	Density (%)	Abun-dance (%)	Frequency (%)
			1	2	3	4	5						
1.	*Acalyphaindica*	Euphorbiaceae	1	1	2	3	1	5	5	7	1.6	1.6	100
2.	*Alternanthera paronochioides*	Amaranthaceae	2	1	0	0	0	2	5	3	0.6	1.5	40
3.	*Amaranthusvirdis*	Amaranthaceae	4	2	4	5	5	5	5	20	4	10	40
4.	*Amberboaramosa*	Asteraceae	0	0	0	0	3	1	5	3	0.6	3	20
5.	*Argemonemexicana*	Papaveraceae	2	1	0	0	0	2	5	3	0.6	1.5	40
6.	*Aristlochiabracteata*	Aristlochiaceae	0	0	0	0	2	1	5	2	0.4	2	20
7.	*Asparagus racemosa*	Asperagaceae	1	0	0	0	1	2	5	2	0.4	1	40
8.	*Azimatetracantha*	Solvadoraceae	2	2	1	1	0	4	5	6	1.2	1.5	80
9.	*Blumealacera*	Asteraceae	2	1	3	3	5	5	5	14	2.8	0.2	100
10.	*Blumeaoxyodenta*	Asteraceae	5	4	2	15	18	5	5	44	8.8	8.8	100
11.	*Boerhaviadiffusa*	Nyctaginaceae	1	1	2	3	8	5	5	15	3	3	100
12.	*Cadabafruticosa*	Capparaceae	1	2	2	3	4	5	5	12	2.4	2.5	100
13.	*Calotropisgigantea*	Asclepediaceae	1	0	0	0	0	1	5	1	0.2	1	20
14	*Calotropisprocera*	Asclepediaceae	0	0	0	0	1	1	5	1	0.2	1	20
15	*Capparisgrandiflora*	Capparaceae	0	1	0	0	0	1	5	1	0.2	1	20
16.	*Cardiospermum helicababum*	Sapindaceae	3	0	0	0	0	1	5	3	0.6	3	20
17.	*Cascabelathevetia*	Apocynaceae	0	1	0	0	0	1	5	1	0.2	12	20
18.	*Cassia auriculata*	Fabaceae	0	0	1	2	0	2	5	3	0.6	1.5	40
19.	*Cenchrusbiflorus*	Poaceae	0	0	0	0	3	1	5	3	0.6	3	20
20.	*Chlorisbarbata*	Poaceae	8	7	6	3	12	5	5	36	7.2	7.2	100
21.	*Chlorisbournei*	Poaceae	1	1	1	0	1	4	5	4	0.8	1	80
22.	*Cleome viscos*	Cleomaceae	2	2	1	1	2	5	5	8	1.6	1.6	100
23.	*Cressacretica*	Convolvulaceae	0	2	2	1	1	4	5	6	1.2	12	80
24	*Croton bonplandinum*	Euphorbiaceae	7	0	3	4	2	4	5	16	3.2	4	80
25.	*Cyanthilliumcenerium*	Asteraceae	0	1	0	1	1	3	5	3	0.6	1	60
26.	*Cynodondactylon*	Poaceae	4	8	9	12	15	5	5	48	9.6	1.4	100
27.	*Daturainoxia*	Solanaceae	0	0	1	1	0	2	5	2	0.4	1	20
28.	*Dicomatomentosa*	Asteraceae	1	0	0	0	0	1	5	1	0.4	2	20
29.	*Dipteracanthusprostrata*	Acanthaceae	10	10	12	18	30	5	5	80	16	16	100
30.	*Euphorbia tithymiloides*	Euphorbiaceae	2	0	1	0	1	3	5	4	0.8	1.3	6

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31.	Euphorbia gossypholia	Euphorbiaceae	0	0	0	0	1	1	5	1	0.2	2	20
32.	Euphorbia hirta	Euphorbiaceae	3	8	15	20	22	5	5	68	13.6	13.6	20
33.	*Euphorbia thymifolia*	Euphorbiaceae	2	1	1	4	0	4	5	8	1.6	2	80
34.	*Fagoniaindica*	Zygophyllaceae	0	3	0	0	4	2	5	7	9.6	1.4	100
35.	*Gomphrenacelosoides*	Amaranthaceae	3	2	2	2	3	5	5	12	2.4	1.2	100
36.	*Launeaprocumbense*	Asteraceae	1	2	3	0	0	3	5	6	1.2	1.2	100
37.	*Malvestrumcoromandium*	Malvaceae	2	8	18	10	12	5	5	50	10	10	100
38.	*Oxalis corniculata*	Oxalaceae	18	17	16	18	40	5	5	109	20.2	20.2	60
39.	*Partheniumhysterophorous*	Asteraceae	20	1	1	20	35	5	5	77	15.4	15.4	100
40.	*Pantanemaindicum*	Asteraceae	1	0	0	0	0	1	5	1	0.2	1	100
41.	*Pergulariadaemia*	Asclepediaceae	1	1	0	0	0	2	5	2	0.4	1	20
42.	*Prosopisjuliflora*	Fabaceae	1	1	0	0	2	3	5	4	0.8	1.3	60
43.	*Sennaitalica*	Fabaceae	1	1	1	2	2	5	5	7	1.4	1.4	100
44.	*Sennauniflora*	Fabaceae	1	0	1	2	4	5	5	8	2	2.5	40
45.	*Sonchusflaracum*	Asteraceae	0	0	10	5	1	3	5	16	3.5	5.3	80
46.	*Sonchusoleraceus*	Asteraceae	0	0	0	0	2	1	5	2	0.4	2	60
47.	*Stemodiaviscosa*	Scropulariaceae	0	0	1	0	1	2	5	2	0.4	7	40
48.	*Taverneiracuneifolia*	Fabaceae	1	2	3	6	8	5	5	20	4	4	20
49.	*Tephrosiapurpurea*	Fabaceae	2	1	4	6	8	5	5	21	4.5	4.2	100
50.	*Tragiacannabina*	Euphorbiaceae	1	0	0	0	0	1	5	1	0.2	1	100
51.	*Tragiaplukenetti*	Euphorbiaceae	1	1	1	0	0	3	5	3	0.6	1	60
52.	*Triantemaportulocastrum*	Aizoaceae	0	0	0	0	1	1	5	1	0.2	1	20
53.	*Tridaxprocumbens*	Asteraceae	1	1	2	2	3	5	5	9	2	2	100

Table 2. Weed diversity at the Boys hostel in VSKU campus

Sl.no	Name of the species	Family	No. of Individuals in the Quadrates					Tot. no. of quadrate of occurrence	Tot. no. of quadrate studied	Tot. no. of individuals	Density (%)	Abun-dance (%)	Frequency (%)
			1	2	3	4	5						
1.	*Acalyphaindica*	Euphorbiaceae	3	1	1	0	0	3	5	5	1	1.66	60
2.	*Alternanthera paronochioides*	Amaranthaceae	3	2	3	1	2	5	5	10	2	2	100
3.	*Amaranthusvirdis*	Amaranthaceae	11	14	16	18	21	5	5	80	16	1.6	100
4.	*Amberboaramosa*	Asteraceae	0	0	0	0	1	1	5	1	0.2	1	20
5.	*Argemonemexicana*	Papaveraceae	0	0	0	1	1	1	5	2	0.4	2	20
8.	*Azimatetracantha*	Solvadoraceae	1	1	1	2	1	5	5	6	2.2	2.2	100
9.	*Blumealacera*	Asteraceae	14	13	18	20	21	5	5	86	17.2	17.2	100
10.	*Blumeaoxyodenta*	Asteraceae	18	19	14	13	15	5	5	84	16.8	16.8	100

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11.	*Boerhaviadiffusa*	Nyctaginaceae	1	0	1	1	1	4	5	4	0.8	1	80
12.	*Cadabafruticosa*	Capparaceae	0	0	0	0	1	1	5	1	0.2	1	20
13.	*Calotropisgigantea*	Asclepediaceae	0	1	0	0	1	2	5	2	0.4	1	40
14	*Calotropisprocera*	Asclepediaceae	0	0	1	0	0	1	5	1	0.2	1	20
15	*Capparisgrandiflora*	Capparaceae	1	1	0	1	1	4	5	4	0.8	1	80
16.	*Cardiospermumhelicababum*	Sapindaceae	0	1	0	0	0	1	5	1	0.2	1	20
17.	*Cascabelathevetia*	Apocynaceae	2	6	7	8	9	5	5	32	6.4	6.4	100
18.	*Cassia auriculata*	Fabaceae	1	1	2	0	0	3	5	4.	0.8	1..33	60
19.	*Cenchrusbiflorus*	Poaceae	0	0	1	2	1	3	5	4	0.8	1.3	60
20.	*Chlorisbarbata*	Poaceae	8	10	11	13	15	5	5	57	11.4	11.4	100
21.	*Chlorisbournei*	Poaceae	1	0	0	1	1	3	5	3	0.6	1	60
22.	*Cleome viscosa*	Cleomaceae	8	13	11	14	18	5	5	64	12.8	12.8	100
23.	*Cressacretica*	Convolvulaceae	8	7	6	7	12	5	5	40	8	8	100
24	*Croton bonplandinum*	Euphorbiaceae	4	3	2	5	8	5	5	22	4.4	4.4	100
25.	*Cyanthilliumcenerium*	Asteraceae	1	1	0	0	0	2	5	2	0.4	1	40
26.	*Cynodondactylon*	Poaceae	18	15	30	31	55	5	5	149	29.8	29.8	100
27.	*Daturainoxia*	Solanaceae	0	0	1	0	0	1	5	1	0.2	1	20
28.	*Dicomatomentosa*	Asteraceae	1	0	0	0	1	2	2	5	0.4	1	40
29.	*Dipteracanthusprostrata*	Acanthaceae	9	7	6	5	15	5	5	42	8.4	8.4	100
30.	*Euphorbia tithymiloides*	Euphorbiaceae	6	7	3	0	8	4	5	24	4.	6	80
31.	*Euphorbia gossypholia*	Euphorbiaceae	1	0	0	0	0	1	5	1	0.2	1	20
32.	*Euphorbia hirta*	Euphorbiaceae	8	10	13	17	18	5	5	66	13.2	13.2	100
33.	*Euphorbia thymifolia*	Euphorbiaceae	3	0	1	8	10	4	5	22	4.4	5.5	80
34.	*Fagoniaindica*	Zygophyllaceae	0	0	0	1	0	1	5	1	0.2	1	20
35.	*Gomphrenacelosoides*	Amaranthaceae	10	11	18	0	18	4	5	57	11.4	14.25	80
36.	*Launeaprocumbense*	Asteraceae	0	0	0	0	1	1	5	1	0.2	1	20
39.	*Partheniumhysterophorous*	Asteraceae	8	7	13	12	18	5	5	68	13.6	13.6	100
40.	*Pantanemaindicum*	Asteraceae	1	0	0	1	1	3	5	3	0.6	1	60
41.	*Pergulariadaemia*	Asclepediaceae	0	1	0	0	0	1	5	1	0.2	1	20
42.	*Prosopisjuliflora*	Fabaceae	1	0	1	0	0	2	5	2	0.4	1	40
43.	*Sennaitalica*	Fabaceae	2	3	1	1	2	5	5	9	1.8	1.8	100
44..	*Sennauniflora*	Fabaceae	0	0	0	2	4	3	5	6	1.2	2	60
45.	*Sonchusflaracum*	Asteraceae	0	4	3	1	1	4	5	9	1.8	2.25	80
46.	*Sonchusoleraceus*	Asteraceae	0	0	0	0	1	1	5	1	0.2	1	20
47.	*Stemodiaviscosa*	Scropulariaceae	0	0	0	0	1	1	5	1	0.2	1	20
48.	*Taverneiracuneifolia*	Fabaceae	0	0	1	4	5	3	5	10	2	3.33	60
49.	*Tephrosiapurpurea*	Fabaceae	8	10	14	18	35	5	5	85	17	17	100
50.	*Tragiacannabina*	Euphorbiaceae	3	1	8	9	10	5	5	36	7.2	7.2	100
51.	*Tragiaplukenetti*	Euphorbiaceae	2	2	1	1	1	5	5	7	1.4	1.4	100
52.	*Triantemaportulocastrum*	Aizoaceae	0	1	2	0	0	2	5	3	0.6	1.5	40
53.	*Tridaxprocumbens*	Asteraceae	8	7	3	2	8	5	5	28	5.6	5.6	100

Table 3. Weed diversity at the science block in VSKU campus

Sl.no.	Metric	Density	Abundancy	Frequency
1	Simpson diversity index	0.0692	0.087	0.023
2	Simpson reciprocal index	14.45	11.48	41.76
3	Shannon diversity index	4.505	4.25	5.501
4	Margalef index	7.504	7.43	6.414
5	Pielou index	0.151	0.184	0.030
6	Menhinick index	1.506	1.602	0.919
7	Gini coefficient	0.6791	0.710	0.295

Table 4. Weed diversity at the boys hostel in VSKU campus

Sl.no.	Metric	Density	Abundancy	Frequency
1	Simpson diversity index	0.065	0.147	0.023
2	Simpson reciprocal index	15.28	6.782	42.67
3	Shannon diversity index	4.38	3.732	5.517
4	Margalef index	6.821	6.248	6.377
5	Pielou index	0.145	0.346	0.028
6	Menhinick index	1.172	0.826	0.898
7	Gini coefficient	0.703	0.786	0.278

Table 5.Values of r, p, F of Density, Abundancy and Frequency

Sl.no.	Result of Density	Result of Abundancy	Result of Frequency	Not Significant
r – Value	0.574	0.368	0.488	
p – Value	0.166	0.376	0.562	
F – Value	1.941	0.789	0.336	
F - Critical	3.932	3.934	3.934	

Present study was conducted as a first attemptfrom VSK University campus, Ballari to explore and to identify the weeds of campus. This will help the research scholars, teachers and agriculture scientists to identify the weeds and thus help in planning a suitable strategy for controlling spread of these weeds. It gives basic information about the weed, abundance, density and frequency in these two sites where it was observed that native flora inhabiting these sites were found to be found declining,This result is useful for weed management and further research by other branches working on weed. Interesting thing noticed in the study that there were huge numbers of dominant weeds in both the study areas, This is alarming situations for which control measures must be initiated.

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