



Floristic Diversity Of Vrundavan Education Campus-Ganeshpura, Kadi Taluko, Mehsana District, Gujarat

¹ Pathu D. Paradiya, ² Bhargav N. Chauhan, ³Dr.Nancy R. Kumbhani

¹M.Sc. Student, ² M.Sc. Student, ³HOD and Assistant Professor (Botany)

¹ Department of Botany,

¹Vrundavan M.Sc. College, Ganeshpura, India.

Abstract: Vrundavan education campus, Ganeshpura is established in 2013 which is situated in Kadi Taluka in Mahesana District of Gujarat State, India. The present investigation was carried out in order to explore the existing diversity of herbs, shrub, climbers, and trees of Vrundavan education campus, Ganeshpura. Field surveys were conducted continuously during the year 2022-2023 to document the floristic diversity at selected study area. Floristic enumeration of species in the study area reveals a total of 68 species belongs to 64 genera and 37 families. According to the analysis of the habit, trees are dominant as compared to herbs and shrubs. The most dominant families were Asteraceae and Combretaceae. Most of the plants documented in the study showed some ethnobotanical and/or pharmacological significance. The present study revealed that Vrundavan campus is enrich with the variety of plant species which makes the healthy and pleasant environment in campus and further it also helps to relieve stress and renew the spirits by providing calm and comfortable surroundings.

Index Terms:-Floristic diversity, Vrundavan Education Campus, Ganeshpura, Kadi, Mehsana, Gujarat, India.

I. INTRODUCTION

Plants are vital to humanity not only economically, environmentally and industrially but also spiritually, historically and aesthetically because they provide a wide range of essential products to mankind for their survival of life [1]. They are nature's most valuable gifts and one of the most important key components of every ecosystem including various types of herbs, shrubs, creepers, trees and other life forms. Many of them have medicinal properties. Some have beautiful flowers; others have beautiful fruits or foliage. Some are fragrant, while others are unsightly but economically vital [2]. Their abundance and diversity, as well as their immeasurable direct and indirect values, have an impact on humanity's well-being [3]. One of the finest ways to estimate the state of an ecosystem's environment is by the quality of its vegetation. Vegetation plays a crucial role in enhancing the urban environment by supporting a number of fundamental subsystems in the urban environment, such as the hydrological cycle, biogeochemical cycle, atmospheric gas balance, and others. The use of plants as a source of medicine has been passed down through the generations and is a crucial part of the healthcare system [4]. Therefore, it needs to develop green area for the improvement of the urban environmental conditions. Considering the above, the main aim of the present study was to explore the existing diversity of herbs, shrub, climbers, and trees of Vrundavan education campus, Ganeshpura.

Study area

Vrundavan education campus, Ganeshpura is established in 2013 which is situated in Kadi Taluka in Mehsana District of Gujarat State, India. It is located 45 KM towards South from District head quarters Mehsana. 40 KM from State capital Gandhinagar. It is 0.5 km away from Ahmedabad - Mehsana Highway. Latitude and longitude of selected area is 23.37725 and 72.46125 respectively and spread over in 5 acres. It is situated on 58 meters height from the sea level of Gujarat.

Material and method

Field surveys were conducted continuously during the year 2022-2023 to document the floristic diversity at Vrundavan Education Campus –Ganeshpura. A survey of the vegetation was made and observed different plants such as herbs, shrubs, creepers and trees. The identification of plant species during field work was done by using the standard flora books as well as authenticated by expert [5]. For documentation, the photographs were also taken for selected plant species during the field work. The genera in a family and species in genus are arranged alphabetically. Authenticate literatures were referred to know the botanical information of the recorded plant species. The plant species includes botanical name, family, common name and life form.

Result and Discussion

List of the plant species recorded in the Vrundavan education campus- Ganeshpura are shown along with the botanical information in Table 1. Floristic enumeration of species in the study area reveals a total of 68 species belongs to 64 genera and 37 families (Table 1&2). Of these 37 families found, dicots are represented with 28 families, 48 genera and 1290 total no.of species whereas monocots are represented with 9 families, 16 genera and 137 total no. of species (Figure 1). Asteraceae is most dominant family comprising 420 species followed by Combretaceae 294 spp., Euphorbiaceae with 220 spp., Amarantaceae 150 spp., Cyperaceae 100 spp. And so on. (Table 2 and Figure 2). Analysis of life form shows that trees predominant with 30 species (47%), followed by herb, shrub with 16 species (25%), creeper with 2 species (3%) as shown in figure 3.

Conclusion

The present work is the output of continuous field study and 68 plant species belonging to 37 families were recorded. According to the analysis of the habit, trees are dominant as compared to herbs and shrubs. The most dominant families were Asteraceae and Combretaceae. Most of the plants documented in the present study showed some ethnobotanical and/or pharmacological significance. The present study revealed that Vrundavan campus is enrich with the variety of plant species which makes the healthy and pleasant environment in campus and further it also helps to relieve stress and renew the spirits by providing calm and comfortable surroundings.

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Table 1: Botanical information of plant species in Vrundavan education campus, Ganeshpura.

Sr.No.	Botanical name	Family	Common name	Life form
1.	<i>Achyranthes aspera</i> L.	Amaranthaceae	Andhedi	Herb
2.	<i>Adhatoda vasica</i> L.	Acanthaceae	Ardusi	Shrubs
3.	<i>Aegale marmelos</i> L.	Rutaceae	Billi	Tree
4.	<i>Aganonerion polymorphum</i> Spire	Apocynaceae	River leaf	Herb
5.	<i>Agave Americana</i> L.	Asparagaceae	Ram ban	Shrub
6.	<i>Aloe barbadense</i> L.	Asphodelaceae	Aloevera	Herb
7.	<i>Amaranthus viridis</i> L.	Amaranthaceae	Chilbhagi	Herb
8.	<i>Annoma squamosa</i> L.	Annonaceae	Sitafal	Tree
9.	<i>Araucaria hetrophylla</i>	Araucariaceae	Cristmus tree/island pine	Tree
10.	<i>Archontophoenix myolensis</i> Dowe	Arecaceae	Palm	Tree
11.	<i>Areca catechu</i> L.	Aracaceae	Sopari	Tree
12.	<i>Azadirachta indica</i> L.	Meliaceae	Neem	Tree
13.	<i>Bambusa ventricosa</i>	Poaceae	Vans/bamboo	Herb
14.	<i>Bismarckia nobilis</i>	Arecaceae	Pankha tad	Tree
15.	<i>Calotropis gigantia</i> L.	Apocynaceae	Ankado	Shrubs
16.	<i>Carica papaya</i> L.	Caricaceae	Papaya	Tree
17.	<i>Catharanthus roseus</i> L.	Apocynaceae	Barmasi	Herb
18.	<i>Citrus limon</i> L.	Rutaceae	Lemon	Shrubs
19.	<i>Cocos nucifera</i> L.	Aracaceae	Coconut	Tree
20.	<i>Conocarpus erectus</i> L.	Combretaceae	Conocarpus	Tree
21.	<i>Cordyline fruticosa</i> L.	Asparagaceae	Ti plant	Shrubs
22.	<i>Cyanthillium cinereum</i> L.	Asteraceae	Sahdevi	Herb
23.	<i>Cycas circinalis</i> L.	Cycadaceae	Cycas	Tree
24.	<i>Cyperus rotandus</i> L.	Cyperaceae	Chio	Herb
25.	<i>Dracaena trifasciata</i>	Asparagaceae	Snake plant /dracaena	Herb
26.	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Dudheli	Herb
27.	<i>Ficus benjamina</i> L.	Moraceae	Weeping fig /rubber fig	Tree
28.	<i>Ficus microcarpa</i> L.f.	Moraceae	Vad /golden fig	Tree
29.	<i>Hamelia patens</i>	Rubiaceae	Fire bush	Tree
30.	<i>Hibiscus rosa sinensis</i> L.	Malvaceae	Jasud	Shrub
31.	<i>Hymenocallis littoralis</i> Jacq.	Liliaceae	Lilli	Herb
32.	<i>Ixora chinesis</i> Lam.	Rubiaceae	Ixora	Shrubs
33.	<i>Launaea sarmentosa</i>	Asteraceae	Launaea	Herb
34.	<i>Luffa aegyptiaca</i>	Cucurbitaceae	Turia	Creepers
35.	<i>Mangifera indica</i> L.	Anacardiaceae	Mango	Tree
36.	<i>Melaleuca alternifolia</i>	Myrtaceae	Tea tree	Tree
37.	<i>Melia azedarach</i> L.	Meliaceae	China berry	Tree
38.	<i>Mimusops elengi</i> L.	Berberidaceae	Spanishberry	Tree
39.	<i>Murraya koenigii</i> L.	Rutaceae	Mithi limdi	Shrubs
40.	<i>Musa acuminata</i> Colla	Musaceae	Banana	Tree
41.	<i>Nerium oleander</i> L.	Apocynaceae	Red karan	Shrub
42.	<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	Parijat	Shrub
43.	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulsi	Herb
44.	<i>Parthenium hysterophorus</i> L.	Asteraceae	Congress ghas	Herb
45.	<i>Phoenix paludosa</i> Roxb.	Aracaceae	Khajur	Tree
46.	<i>Phyllanthus emblica</i> L.	Phyllanthaceae	Amla	Tree
47.	<i>Phyllanthus urinaria</i> L.	Euphorbiaceae	Bhoyamli	Herb
48.	<i>Physalis longifolia</i> Nutt.	Solanaceae	Moti popati	Herb
49.	<i>Plumeria alba</i> L.	Apocynaceae	White champo	Tree
50.	<i>Plumeria obtusa</i> L.	Apocynaceae	Red champo	Tree
51.	<i>Plumeria pudica</i> Jacq.	Apocynaceae	Nag champo	Shrubs
52.	<i>Polyalthia longifolia</i> L.	Annonaceae	Asopalav	Tree
53.	<i>Portulaca grandiflora</i>	Portulacaceae	Office time / Moss rose	Herb
54.	<i>Pterocarpus santalinus</i> L.f.	Fabaceae	Lal Chandan	Tree
55.	<i>Ravenala madagascariensis</i> Sonn.	Strelitziaceae	Ravenala	Shrubs
56.	<i>Rosa alba</i> L.	Rosaceae	White rose	Shrubs
57.	<i>Rosa mister Lincoln</i>	Rosaceae	hybrid Red rose	Herb
58.	<i>Santalum album</i> L.	Santalaceae	Chandan	Tree
59.	<i>Swietenia mahagoni</i>	Meliaceae	Mahagani	Tree

60.	<i>Terminalia bucerus</i> L.	Combretaceae	Harde,sadar	Tree
61.	<i>Thuja occidentalis</i> L.	Cupressaceae	Thuja	Shrubs
62.	<i>Tridax procumbens</i> L.	Asteraceae	Pardesibhangaro	Creepers
63.	<i>Vitex negundo</i> L.	Lamiaceae	Nirugdi/ nagod	Shrub
64.	<i>Ziziphus nummularia</i> Burm.f.	Rhamnaceae	Chanibor	Tree

Table 2: Distribution of plant species according to their family.

Family	Species
Asteraceae	420
Combretaceae	294
Euphorbiaceae	220
Amaranthaceae	150
Cyperaceae	100
Annonaceae	43
Apocynaceae	38
Moraceae	24
Anacardiaceae	14
Meliaceae	14
Rutaceae	14
Lamiaceae	12
Aracaceae	11
Berberidaceae	9
Asparagaceae	8
Cucurbitaceae	6
Malvaceae	6
Rhamnaceae	5
Rubiaceae	5
Acanthaceae	4
Strelitziaceae	4
Araucariaceae	3
Asphodelaceae	3
Fabaceae	3
Oleaceae	3
Poaceae	3
Cupressaceae	2
Cycadaceae	2
Liliaceae	2
Musaceae	2
Myrtaceae	2
Portulacaceae	2
Rosaceae	2
Caricaceae	1
Phyllanthaceae	1
Santalaceae	1
Solanaceae	1

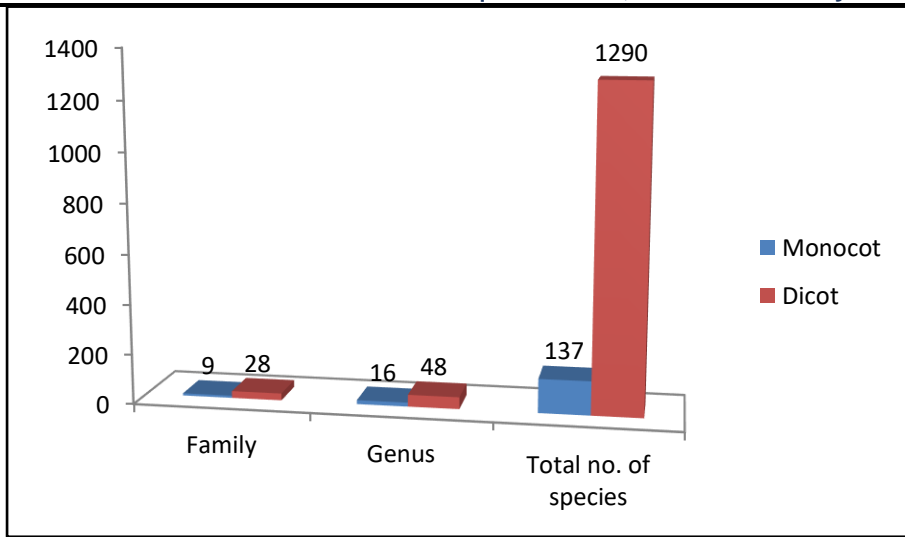


Figure 1: Floristic richness of Vrundavan education campus, Ganeshpura

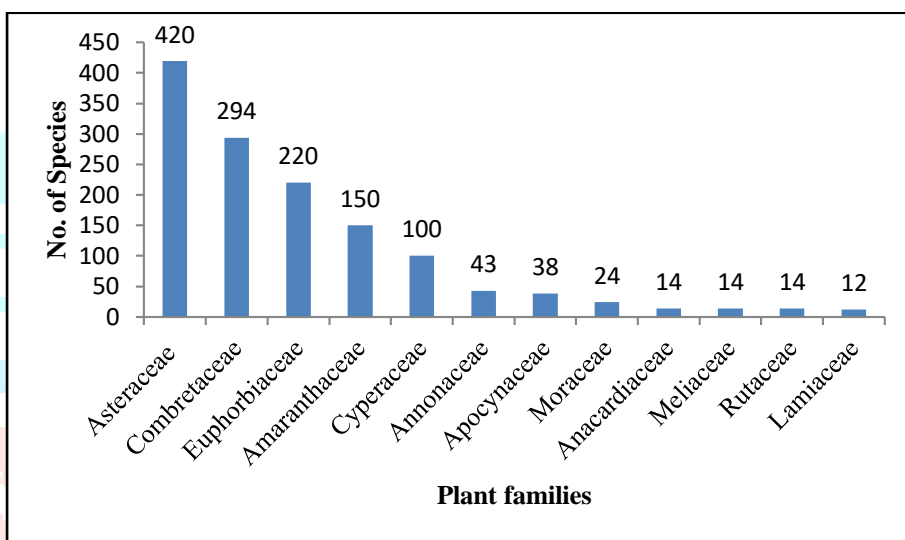


Figure 2: Dominant families with total no. of plant species

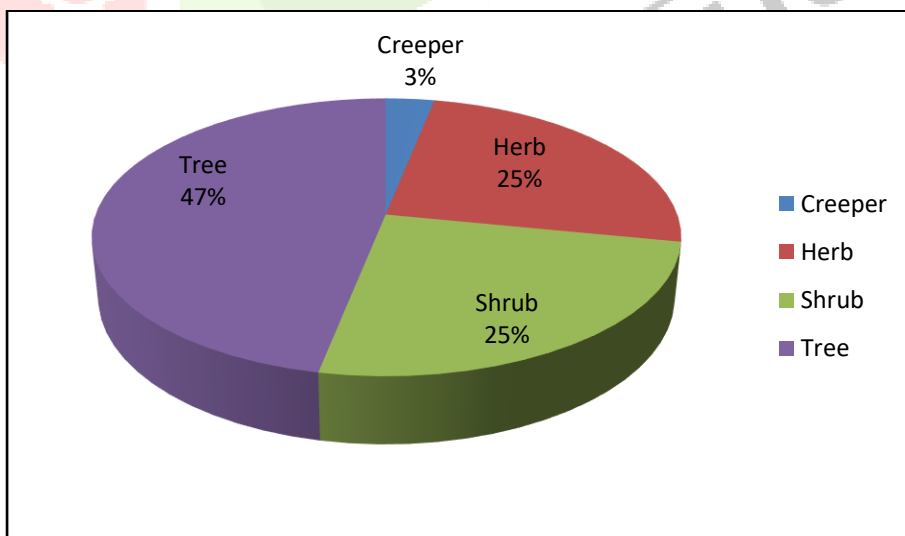


Figure 3: No. of Plant species belonging to different life forms in selected study area