

## Campus survey on floristic biodiversity at Jagadamba Mahavidyalaya Achalpur in Amravati district

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**Abstract:** A green campus is an area where teaching and environmental standards work together to encourage eco-friendly and sustainable campus operations. Jagadamba Mahavidyalaya campus in Achalpur is the subject of the current study. The college is located on a eight acres of sprawling campus and it is run by Jagadamba vinkarshikshansansthaAchalpur. The study was for the purpose of monitoring the type and distribution of plant diversity on and around the college campus. Field observations were made and plants were photographed. The purpose of the survey was to gather data on the plant species such as identification and documentation in the form of family and botanical name. The number of *Azadirachta* was found to be the highest planted trees. *Nerium oleander* was the second topmost plant followed by *Bauhinia variegata*, *Cassia fistula*, *Pongamia pinnata* commonly found plants. The important and prominent shrub species are *Asparagus racemosus*, *Adhathodavasica*, *Coleus amboinicus*, *Commiphora mukul*. In order to preserve these enriched floral biodiversity it is very important to cultivate these plants and protect the ones which are naturally present on the grounds. After studying the flora and plants recorded from the JMV campus was found to be economically important.

**Key words:** Jagadamba Mahavidyalaya Achalpur, Biodiversity, Trees, Shrubs.

### Introduction

Biodiversity is critical for the survival of humans, economic wellbeing and the functioning or stability of the ecosystem (Singh, 2002). On the contrary ecosystems is a topic of paramount importance in contemporary ecological discourse, with particular attention devoted to understanding the intricate dynamics of plant communities within diverse habitats. Plants, which perform a significant function for people and the environment, are an important element of any community. Plants are a long-term answer to many problems that people confront, and they are a significant resource for any community, particularly those in urban or suburban environments (Lindenmayer and Laurance, 2016). Flora is an important natural blessing that has always been necessary for nature to function. The basis for real plant learning is the method for experimentation and has moved from one age to the next after being improved and included (Khan et al., 2013).

A world wide watch list of flora maintained by plant taxonomists provides general information on plants. The plant kingdom is directly connected with to provide food, shelter and health. Plants play an important role not only in maintaining life system on the earth but also as a source of economically important products. Based on geographical region and edapo-climatic condition

plants survive to their specific habitat. It has been estimated that approximately ten million species of plants inhabit the planet earth of which, among that only 1.7 million species are known to science (4). Floristic diversity refers to the variety of plants and their variation. It is a well-organized complex association having a typical composition (floristic aspect) and structure (morphological aspect), which results from the interaction through time. It can be measured in different levels with just a number of species in a given area to a complex association with prevailing ecosystem. Flora is an important natural blessing that has always been necessary for nature to function. The diversity of trees provides resources and habitat for nearly all other life forms of forest. The tree species diversity varies significantly with the variation in biogeography and habitat disturbance (Ali et al 2018).

Floristic diversity within a specific area is referred to as the variety of plant species scattered in a particular area, which is based on climate conditions, the appearance of vegetation and biotic influences (Gaston and Spicer 2013). Floristic diversity is a vital foundation for most of our terrestrial ecosystems. Human beings and faunas are completely relying on plant species, by the means of energy source over their capability for converting the sun's energy by the process of photosynthesis. However, due to anthropogenic activities, urbanization, climate change and over-exploitation of natural resources, people are becoming gradually dissociated from nature. To assess the plant biodiversity of an area. To assess the plant biodiversity of an area vegetation/phytosociological analysis is the crucial activity as a state of vegetation. The structural analysis encompasses the study of vegetation and its internal "social" relationships and also provides information on classifications of plant communities' composition and successional relations. This diversity includes the plant species diversity of a particular area representing the local flora of a given area (Qian et al., 2021). The plant resource can also be understood in terms of its richness, dispersion, threat, endemism, commercial use, and other factors. The information was gathered through a survey in order to determine the value of plant species and encourage their preservation.

#### **Materials and Methods: -**

The Jagadamba Mahavidyalaya campus is situated at the foot hills of Melghat region, with a campus of over 8 acres of land. This University is considered as one of the green educational institutions in Amravati district with a rich floral diversity. This campus is known for its excellence in education, and floral diversity. The approximate latitude and longitude for Achalpur are 21.2550 °N longitude 77.5096 °N. The data collected was noted in field notebook. The valuable information of the arboreal flora present in the campus was documented.

**Floristic analysis:** This study was carried out in the session of 2024-2025. Periodical survey was made for the identification and collection of plant species followed by botanical name, family, habit, uses and anthropogenic disturbances to the natural vegetation in campus.

#### **Result and discussion**

The present study has been carried out to explore the diversity of plants species in campus of Jagadamba Mahavidyalaya, Achalpur.

The total number of recorded species surveyed in the present study was 198 species, belonging to 67 families, they are represented by Pteridophyta, Gymnosperm, Monocotyledons and Dicotyledons as shown in table 1( families and number of species in each family. According to the system Engler.

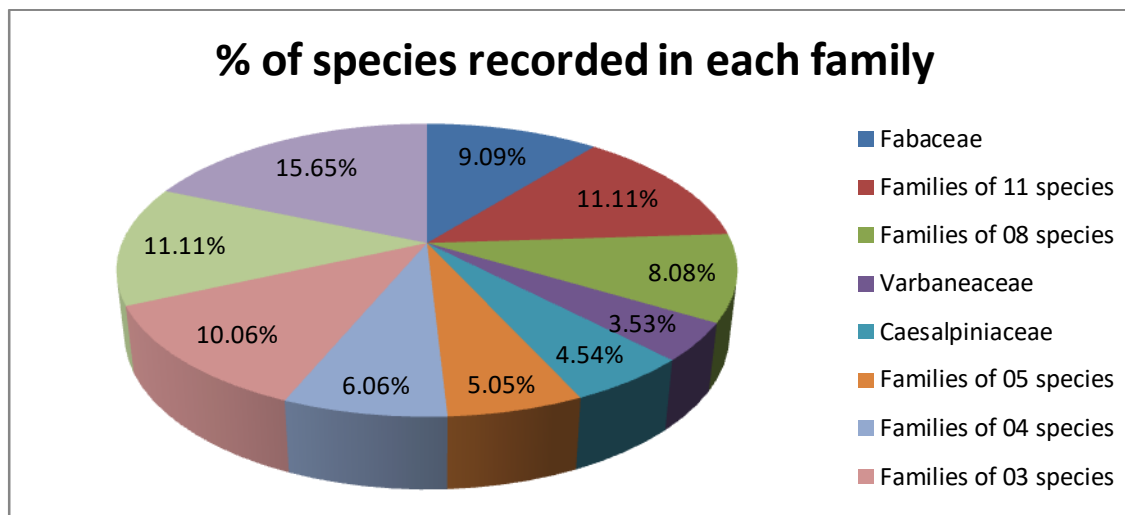
Table (1) Number of species in each family.

Sr.no	Family	Number of species
<b>I. Pteridophyta</b>		
1	Adiantaceae	1
<b>II. Gymnosperm</b>		
1	Cycadaceae	1
2	Cupressaceae	1
<b>III. Angiosperm</b>		
<b>a. Monocotyledone</b>		
1	Liliaceae	4
2	Cactaceae	2
3	Arecaceae	1
4	Orchidaceae	1
5	Asparagaceae	1
6	Amaryllidaceae	1
7	Araceae	1
<b>b. Dicotyledone</b>		
1	Fabaceae	18
2	Euphorbiaceae	11
3	Caesalpiniaceae	09
4	Bignoniaceae	11
5	Asteraceae	08
6	Apocynaceae	08
7	Verbanaceae	07
8	Moraceae	06
9	Malvaceae	04
10	Rubiaceae	05
11	Combretaceae	05
12	Lamiaceae	04
13	Sapindaceae	04
14	Rutaceae	04
15	Mimosaceae	03
16	Asclepidaceae	03
17	Annonaceae	03
18	Capparaceae	03
19	Myrtaceae	03
20	Solanaceae	03
21	Meliaceae	02
22	Papilionaceae	01
23	Nyctaginaceae	02
24	Amaranthaceae	02
25	Phytolaccaceae	01
26	Cucurbitaceae	01
27	Papeveraceae	01
28	Menispermaceae	02
29	Ulmaceae	01
30	Santalaceae	01
31	Convolvulaceae	02

32	Rhamnaceae	01
33	Cannaceae	01
34	Plumbaginaceae	01
35	Crassulaceae	01
36	Oxalidaceae	01
37	Bixaceae	01
38	Sapotaceae	01
39	Clusiaceae	01
40	Zingiberaceae	02
41	Lauraceae	02
42	Piperaceae	03
43	Vitaceae	02
44	Burseraceae	02
45	Bombacaceae	02
46	Sapotaceae	01
47	Acanthaceae	02
48	Tiliaceae	01
49	Oleaceae	02
50	Magnoliaceae	01
51	Alangiaceae	01
52	Anacardiaceae	01
53	Simaroubaceae	01
54	Boraginaceae	01
55	Rhamnaceae	01
56	Commelinaceae	01
57	Protulaceae	01

In dicot, Dominant families were Fabaceae with 18 species(9.09%), Euphorbiaceae and Bignoniaceae with 11 species(11.11%), Caesalpinaceae with 09 species(4.54%), Asteraceae and Apocynaceae with 08 species(8.08%) and Verbanaceae containing 07 species(3.54%). Rubiaceae, Combretaceae with 05 species(5.05%), Lamiaceae, Sapindaceae and Rutaceae containing 04 species(6.06%), Asclepidaceae, Mimosaceae, Annonaceae, Capparaceae, Piperaceae, Myrtaceae and Solanaceae with 03 species(10.06%), Meliaceae, Nyctaginaceae, Amaranthaceae, Menispermaceae, Convolvulaceae, Zingiberaceae, Lauraceae, Vitaceae, Burseraceae, Acanthaceae, Oleaceae containing 02 species(11.11%) and other containing 01 species. In monocot, Family Liliaceae shows 04 species(15.65%).

In the species of Meliaceae, the number of species *Azadirachta indica* found in large number. *Nerium oleander* was the second topmost plant followed by *Bauhinia variegata*, *Cassia fistula*, *Pongamia pinnata* commonly found plants. The important and prominent shrub species are *Asparagus racemosus*, *Adhathodavasica*, *Coleus amboinicus*, *Commiphora mukul*.



**Conclusion:-** The campus flora of JagadmbaMahavidyala, Achalpur is a unique opportunity as an outdoor botanical and ecological learning for the campus community. The recorded plants shows a economical benefits, some of them have medicinal value; some have ornamental value and few are edible. The documentation of the plant is the only way to preserve the fundamental knowledge of the plant resources and it will be useful to the campus students for further research.

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