

Plant Biodiversity of Government Arts and Science College campus, Aurangabad (M.S.)

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ABSTRACT -

Present study deals with the identification and documentation of plant diversity of Government Arts and Science College campus, Aurangabad (M.S.). Total 110 plant species were recorded with 48 families. Out of which only three species were recorded from gymnosperm, two species from Pteridophyte and two species from Bryophyte. Many plant species were recorded in college campus and most of trees were naturally grown. Number of herbs, shrubs and trees were found in college campus. The Poaceae, Casealpinaceae, Amarantheceae and Mimosaceae were dominant families with large number of species. New species of plants were cultivated and added every year through tree plantation program. All species were conserved by institution with the help of staff botany department and botanical garden committee members. College campus also includes some Aromatic plants and Medicinal plants. In view of recent demand on wild plant variety and medicinal plant entire college campus was scanned to collect biodiversity data. Identified the species using scientific literature and subsequently data was evaluated in present paper.

KEYWORDS - Ethonobotany, Aromatic plant, Medicinal plants

INTRODUCTION -

Biodiversity is the total diversity or varieties of life on earth includes all plants, animals and microbes. It includes genus, species and ecosystem. To understand richness of biodiversity taxonomic flora is very much essential (Rajendran, et.al 2014). To understand the significance of the existing biodiversity it necessary to understand the what is the value of place and what are benefit it provides (Bilge,2001). Several study has been conducted to analyse plant biodiversity in India (Brandes,1995 Krigas et.al1999, Altey et.al 2010,Harshad 2008). Hence present study is scrutinising the vascular plant diversity. In Marathwada region Government college of Arts and Science, Aurangabad near area is historical. The college was oldest college in Marathwada region. The college was established in 1923 at Aurangabad and since then it has been playing pioneering role in providing quality education in this society. The forty eight acres of college campus, known as Kille-Ark is surrounded by a huge rampart constructed in the seventeenth century which is worth mentioning. College campus is with diverse vegetation. The college campus has rich and diverse vegetation. College campus is a very informative to study several floral aspects and plant biodiversity. This study was undertaken to understand the plant biodiversity of college campus and how academic institute



could play significant role in conserving biodiversity for ecosystem and better environment of college campus.

MATERIAL AND METHODS -

The field study was carried out during academic year 2020-21 in the campus of Government College of Arts and Science, Aurangabad.

- I) **Field Work** – The survey was conducted to collect the information about plant species, categorised in different groups of plants on the basis of habitat. Collect the information of plant which is necessary for identification and make documentation of plant information with botanical name and families. Some medicinal plants was also found in campus these plants were categorised in different group on the basis of medicinal uses.
- II) **Laboratory Method and Literature Collection** –
The laboratory work was mainly in the form of comprised the correct identification of plant specimens. The specimens were identified with the help of published flora like Flora of India, (Hooker, 1872-1897). Flora of presidency of Bombay. Vol – I to III. (Cooke. 1901-1908; Repr. 1958.). The Flora of the Maharashtra state; Monocotyledons, (Sharma et al., 1996), Flora of Maharashtra Vol – I to IV (Almeida & Almeida, 2001, 2001, 2003). Flora of Maharashtra state; Dicotyledons Vol – I (Singh & Karthikeyan, 2000), Flora of Maharashtra state Dicotyledons Vol- II (Singh et al.,2001).Flora of Kolhapur District (Yadav & Sardesai, 2002), 'Flora of Baramati' (Bhagat et al., 2008); etc. I)Plant identification was also done on the based on literature study (Hooker 1875, Maheshwari 1963. Jain 1968, Bhandari 1978 Kumar 2001. The plants were identified with the help of Flora of Marathwada- V. N. Naik (1998). Nag and Hasan (2013), Muley and Sharma (2013), Biradar (2013) Names of the plant specimens were searched concerning with the different herbaria.

RESULT AND DISCUSSION –

On the basis of field work and survey conducted in the college campus .Total 103 species belongs to 46 families were collected, identified and listed (Table 1, 2, 3) excluding lichens and mycoflora. Out of 110 plant species 69 species were trees. 26 plant species were shrubs and 08 plant species were herbs. Different plant groups were found in campus in which 103 recorded from Angiosperm, 03species were recorded from gymnosperm (Cycus. Thuja. Christmas tree), 02 species from Pteridophyte (Riccia, Fusarim) and 02 species from Bryophyte. (Adiantum, Nephrolepis). Amongst these species most of the plant species were characterised by natural vegetation and very few were cultivated by college.



Table No. 1 List of Plant species (Herb)

Sr No.	Botanical Name	Common Name	Family	Habit
1	Argemone maxicana	Poppy	Papaveraceae	Herb
2	Asparagus racemosus	Shatavari	Asparagaceae	Herb
3	Curcuma longa	Halad	Zingiberaceae	Herb
4	Mentha arvensis	Pudina	Lamiaceae	Herb
5	Spinacia oleracea	Spinach	Amarantheceae	Herb
6	Tradescantia pallida	Tradescantia	Commelinaceae	Herb
7	Trigonella foenum	Fenugreek	Fabaceae	Herb
8	Zinziber officinale	Adark	Zingiberaceae	Herb

Table No.2 List of Plant species (Shrub)

Sr.No	Botanical Name	Common Name	Family	Habit
1	Spilanthes paniculata	Akalkara	Asteraceae	Shrub
2	Aloe barbadensis	Aloe vera	Liliaceae	Shrub
3	Arabian jasmine	Mogra	Oleaceae	Shrub
4	Bougainvillia spectabilis	Bougainvillia	Nyctaginaceae	Shrub
5	Calatropis procera	Rai	Apocyanaceae	Shrub
6	Capsicum annum	Mirchi	Solanaceae	Shrub
7	Casuarina equisetifolia	Suru	Casuarinaceae	Shrub
8	Cestrum durnum	Dinka raja	Solanaceae	Shrub
9	Cestrum nocturnum	Ratrani	Solanaceae	Shrub
10	Clitoria ternatea	Gokarna	Fabaceae	Shrub
11	Cochlospermum religiosum	Ganeri	Cochlospemaceae	Shrub
12	Datura stromonium	Dhatura	Solanaceae	Shrub
13	Bryophyllum pinnatum	Panputi	Colchicaceae	Shrub
14	Hibiscus rosa-sinesis	Hibiscus	Solanaceae	Shrub
15	Jasminum sps	Jasmine	Oleaceae	Shrub
16	Manilkara zapota (L.)	Chikoo	Sapotaceae	Shrub
17	Opuntia dilleni	Cactus	Cactaceae	Shrub
18	Oscimum tenuiflorum	RamTulsi	Lamiaceae	Shrub
19	Punica granatum L	Dalimb	Punicaceae	Shrub
20	Datura metal	Dhatura	Solanaceae	Shrub
21	Saussurea obvallata	Brahma kamal	Asteraceae	Shrub
22	Solanum wrightii	Vangi	Solanaceae	Shrub
23	Sterculia foetida L	Panchpal	Sterculiaceae	Shrub
24	Thespesia populnea (L.)	Bhendi	Malvaceae	Shrub
25	Trachyspermum	Ajawain	Apiaceae	Shrub
26	Withania somnifera	Ashawagandha	Solanaceae	Shrub



Table No.3 List of Plant species (Tree)

Sr No.	Botanical Name	Common Name	Family	Habit
1	Acacia.farnesiana (L.) Willd.	Deo Babhual	Mimosaceae	Tree
2	Acacia auriculiformis	Babhul	Mimosaceae	Tree
3	Adansonia digitata L	Gorakh chinch	Bombacaceae	Tree
4	Aegle marmelos,Correa	Bel	Rutaceae	Tree
5	Albizia lebbeck (L.)	Shirish	Mimosaceae	Tree
6	Annona muricata L	Hanumanpha	Annonaceae	Tree
7	Annona. reticulata L.	Ramphal	Annonaceae	Tree
8	Annona. squamosa L	Sitaphal	Annonaceae	Tree
9	Aphanamysis polystachya	Rohitak	Meliaceae	Tree
10	Areca catechu L	Supari	Arecaceae	Tree
11	Atalantia racemosa	Makad limbu	Rutaceae	Tree
12	Atocarpus heterophyllus Lam	Phanas	Moraceae	Tree
13	Averrhoa carambola	Star fruit Plant	Oxalidaceae	Tree
14	Azadirachta indica A.	Kadu nimb	Meliaceae	Tree
15	Bixa orellana L	Shendri	Bixaceae	Tree
16	Bombax ceiba L.	Katesavar	Bombacaceae	Tree
17	Butea monosperma	Palas	Fabaceae	Tree
18	Callistemon citrinus (Curtis)	Bottle brush	Myrtaceae	Tree
19	Cassia fistula L.	Bahava	Caesalpiniaceae	Tree
20	Cassia grandis L		Caesalpiniaceae	Tree
21	Cassia siamea Lam	Kashid	Caesalpiniaceae	Tree
22	Chukrasia tabularis	Devdar	Meliaceae	Tree
23	Citharexylum spinosum L	Anantura	Verbinaceae	Tree
24	Citrus aurantifolia	Limbu	Rutaceae	Tree
25	Citrus maxima	Papannas	Rutaceae	Tree
26	Cocos nucifera L	Coconut	Arecaceae	Tree
27	Cordia dichotoma	Bhokar	Boraginaceae	Tree
28	Dalbergia sissoo Roxb	Shisav	Fabaceae	Tree
29	Delonix regia	GulmoharReddish	Caesalpiniaceae	Tree
30	Dillenia indica L	Motha Karmal	Dilleniaceae	Tree
31	Emblica. officinalis	Awala	Euphorbiaceae	Tree
32	Erythrina stricta Roxb	Pangara	Fabaceae	Tree
33	Eucalyptus citriodora Hook	Nilgiri	Myrtaceae	Tree
34	Ficus carica L	Anjir	Moraceae	Tree
35	Ficus religiosa L	Pimpal	Moraceae	Tree
36	Ficus.racemosa L.	Umber	Moraceae	Tree
37	Grevillea robusta	Oak	Proteaceae	Tree
38	Hydnocarpus pentandra	Kadu kavath	Flacourtiaceae	Tree
39	Magnoliagrandifolia	Kavthi Chapha	Magnoliaceae	Tree
40	Mangifera indica L	Amba,Mango	Anacardiaceae	Tree
41	Michelia champaka L.	Son Chafa	Magnoliaceae	Tree
42	Moringa oleifera Lamk	Shevga	Moringaceae	Tree
43	Myristica dactyloides	Jayphal	Myristicaceae	Tree

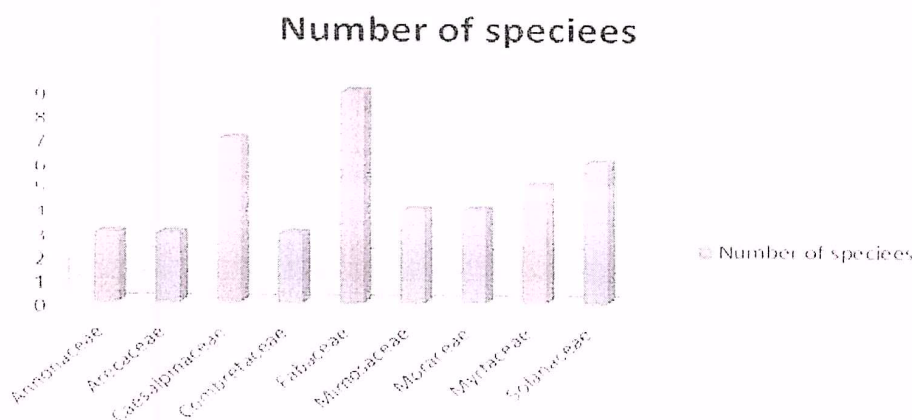


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44	Nerium indicum	Kaner	Apocyanaceae	Tree
45	Nyctanthes arbor tristis L	Parijatak	Oleaceae	Tree
46	Ougeinia oojeinensis	Tiwas	Fabaceae	Tree
47	Pithocellobium dulce (Roxb.)	Vilayatchinch	Mimosaceae	Tree
48	Plumeria acuminata	Lal chapha	Apocynaceae	Tree
49	Plumeria alba L	Pandhara chapha	Apocynaceae	Tree
50	Polyalthia longifolia Thw	Ashoka		Tree
51	Pongamia pinnata (L.)	Karanj	Fabaceae	Tree
52	Prunus dulcis	Badam	Rosaceae	Tree
53	Psidium guava L	Peru	Myrtaceae	Tree
54	Pterocapus marsupiun Roxb	Bibla	Fabaceae	Tree
55	Pterospermum acerifolium	Kanakchampa	Sterculiaceae	Tree
56	Roystonea regia	Bottle palm	Arecaceae	Tree
57	Santalum album L.	Chandan	Santalaceae	Tree
58	Sapindus emarginatus Vahl	Ritha	Sapindaceae	Tree
59	Limonia acidiaaima	Wood apple	Rutaceae	Tree
60	Semecarpus anacardium L	Bhilava	Anacardiaceae	Tree
61	Sesbania grandiflora (L.)	Hadga	Fabaceae	Tree
62	Syzygium aromaticum (L.)	Lawang	Myrtaceae	Tree
63	Syzygium.cumini (L.)	Jambhul	Myrtaceae	Tree
64	Tamarindus indica L.	Chinch	Caesalpinaceae	Tree
65	Tectona grandis L	Sag	Verbinaceae	Tree
66	Terminalia bellirica	Behada	Combretaceae	Tree
67	Terminalia. cuneata Roth	Arjun	Combretaceae	Tree
68	Terminalia.chebula	Hirda	Combretaceae	Tree
69	Ziziphus mauratiana Lamk	Bor	Rhamnaceae	Tree

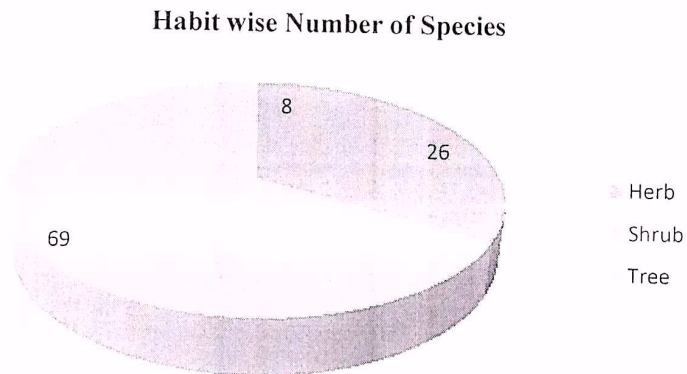
Among identified and listed plant species Fabaceae, Caesalpinaceae, Myrtaceae and Solanaceae were reported as the dominated species. Other main contributing families were Annonaceae, Apocyanaceae, Combretaceae, Mimosaceae and Moraceae.

I) Analysis of total number of species in dominant families

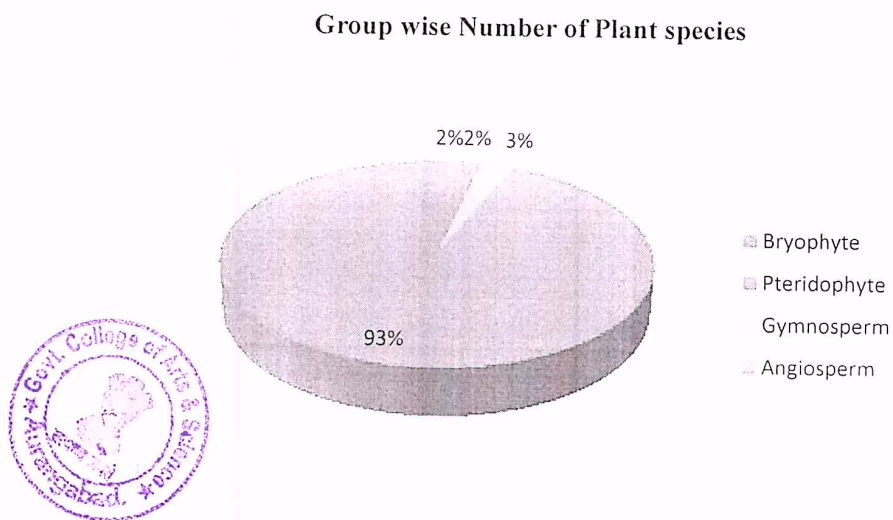


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II) Analysis of habit wise distribution of species



III) Plant group of college campus area



In this study includes all ethanobotanical used plants. Ornamental plants, Medicinal plants Edible fruit plants and Aromatic plants. All plants play an important role to maintain ecosystem of college campus and healthy environments. The works of Rajentra et.al (2014), Rao, P.S, Yadav, A.M. and Shah, R. C. (2017), Jalindarnath G. Babal (2021) Vinayas Ghate and Mandar Datar (2009), Patil R.P. et.al (2013), Gambhire V S, (2008), K.N. Gaikwad and M.V. Mali (2012) and Sharma BD, Karthikeyan S, & Singh NP (1996) were referred for identification and documentation. Biodiversity provides a variety of environmental services from its plant species which are essential at global, national, regional and local level. College management is regularly taking traditional care for conservation of campus biodiversity. On

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other hand equipment is using for trimming of trees and grass lawns which gives extra beautification and healthy atmosphere to the campus. Now a day educational institute maintained and preserve bio data of staff and students of all years. Likewise, we should include the list of newly added plant every year. It has become obvious that the conservation of biological resource is essential for wellbeing and the long term survival of mankind.

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