



A SURVEY ON BIODIVERSITY OF FLORA AT COLLEGE CAMPUS OF JAMNER JALGAON (MS) INDIA

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ABSTRACT:

The present study were made with the aims to know the diversity of flora and to do its proper documentation present in the campus area of ACS College Jamner placed in Jalgaon district, Maharashtra. The documentation of flora helps to know the floral diversity which is economically, medicinally important. It also helps to conserve this diversity by knowing existing ecosystem. During this survey, 79 genera belonging to 41 different families were recorded, of which four species belongs to Gymnosperm and one was represented by Pteridophyte. Order Fabales shows highest species followed by Lamiales, Sapindales, Zingiberales. It was found that Apocynaceae, Fabaceae were dominant families among all. All the plants have been documented with their Vernacular name, Scientific name, Family, Habit, economic importance. This study is the first ever study conducted at this college.

Key words: Biodiversity, flora, ecosystem, species

INTRODUCTION

“Diversity is the hallmark of living things on earth today. In its absence the earth’s surface would be as monotonous as that of the moon or the planets about which we know”. The word diversity means variety, diverseness, differences, variations among the individuals. The term Biodiversity refers to the totality of Genus, Species and Ecosystem of the region. It is fact that all the species can occur at one place whether or not a species can occur on a site. It is determined by the environmental conditions of the site and the range of tolerance of the species. Our country is one of the 12 mega-diversity centres of the world, because of its richness in plant diversity. With about 10 bio-geographic zone possessing more than 1,27,000 species of microbes, plants and animals representing all major ecosystem. In India, there are about 17,817 species of angiosperms which account for 38 % of the total Indian flora (Anonymous, 2012). Among the Indian species, about 10 % of the entire angiospermic plants have been considered as endangered out of which about 800 species are reported from north-eastern India (Nayar and Sastry 1987, 1988, 1990).

The biodiversity hot spots in India include mainly the Eastern Ghats, the Western Ghats and north hills. It ranks ninth in terms of plant species richness. Biodiversity is responsible for maintaining natural sustainability and eco balance as well. Each species present in every ecosystem, no matter how small, has a specific role. A diverse ecosystem can withstand environmental stress. Therefore it is very important to have knowledge of biodiversity and its proper utilization for a sustainable livelihood. In order to preserve this diversity, we need to first understand the diversity we have. While efforts have been taken on large scale for

some economically important groups, but other scattered groups or diversity are still not properly collected and documented. With the aim of this we collected information of every plant available in the campus area of our Institute to make database of existing plant diversity.

Taluka Jamner is the small town in Jalgaon district of Maharashtra in India. It belongs to Khandesh and Northern Maharashtra region, ACS College Campus has been selected as an experimental area for studying the Biodiversity.

MATERIAL AND METHODS

Study area: Arts, Commerce and Science College, Jamner.

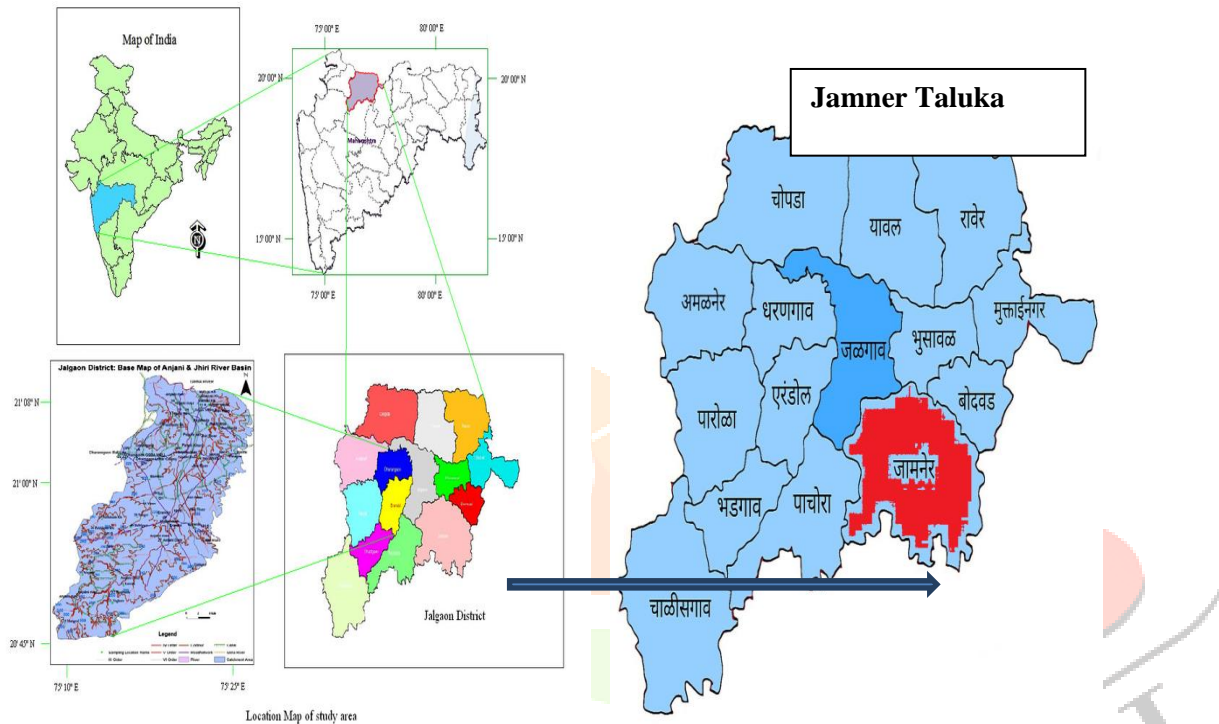


Figure 1: Map Showing Jamner in Jalgaon district marked in Maharashtra of India.

In the Indian state of Maharashtra's Jalgaon district sits the city of Jamner. It is roughly 20 km east of Jalgaon city and is located on the Girna River's banks. This study was conducted in the campus of Arts, Commerce and Science College, Jamner, Jalgaon, Maharashtra, India. The area under study is extended over 4 acres. This study was conducted for a period of one year June 2022 to May 2023 in different localities of the campus. The survey was conducted each week to record all the species. With the help of literature based on floras available in college Library and discussion with experts, Identification of each species was done. Also Photographs were taken.



Figure 2: Plate showing images of Campus of Jamner College

OBSERVATION

During field survey it was observed that total 79 species under 71 genera belonging to 41 families were recorded (Fig 4). List of plants prepared according to their vernacular and scientific name, Habit, family and order and economic importance (table 1). The campus is rich in various types of vegetation including different types of trees, shrubs, herbs, climbers, palms, some members of Gymnosperms, Pteridophytes etc. According to habit, it was found that the no of Trees and Shrubs are more followed by Herbs. The least are climbers (Fig 5). Some plants have grown naturally while others have been planted for study and beautification purpose. Out of the total recorded plants 74 are Angiosperms which include 69 species of Dicotyledons and 5 species belongs to Monocotyledon. About 4 species recorded as Gymnosperm and remaining one species belongs to Pteridophytes (fig.5). According to survey it is observed that Apocynaceae contained the high no of species (7) followed by Fabaceae (6), Caesalpiniaceae (5), Rutaceae (5), Verbenaceae (5) and Zinziberaceae (4). More than 40% of the total flora is represented by these families. Trees belonging to 28 species, shrubs belonging to 28, herbs belonging to 20, climbers belonging to 3 species recorded from this survey of campus. Some medicinal plants are also present in campus. The following checklist was observed in our study area.

Table 1: Checklist of Floral diversity with respective order and family

Angiosperm					
Sr. No.	Vernacular Name	Botanical Name	family	Order	Habit
1	Kanchan	<i>Bauhinia acuminata</i>	Caesalpiniaceae	Fabales	Shrub
2	Shankasur	<i>Caesalpinia pulcherima</i>	Caesalpiniaceae	Fabales	Shrub
3	Ashoka	<i>Polyalthia longifolia</i>	Caesalpinaceae	Fabales	Tree
4	Gulmohar	<i>Delonix regia</i>	Caesalpiniaceae	Fabales	Tree
5	Anjan	<i>Hardwickia binata</i>	Caesalpinaceae	Fabales	Tree
6	Vilayati chinch	<i>Pithecolobium dulce</i>	Mimosaceae	Fabales	Tree
7	Rain tree	<i>Samania saman</i>	Mimosaceae	Fabales	Tree
8	Kasawa	<i>Cassia siamea</i>	Fabaceae	Fabales	Tree
9	Karanj	<i>Pongamia pinnata</i>	Fabaceae	Fabales	Tree
10	Undirmari	<i>Gliricidia sepium</i>	Fabaceae	Fabales	Tree
11	Bavchi	<i>Psorolea coraliifolia</i>	Fabaceae	Fabales	Herb
12	Kerda	<i>Millettia pinnata</i>	Fabaceae	Fabales	Herb
13	Gunaj	<i>Abrus precatorius</i>	Fabaceae	Fabales	Climber
14	Subabhul	<i>Leucaena leucocephala</i>	Mimosaceae	Fabales	Tree
15	Lajalu	<i>Mimosa pudica</i>	Mimosaceae	Fabales	Herb
16	China rose	<i>Hibiscus rosa sciences</i>	Malvaceae	Malvales	Shrub
17	Kapok tree	<i>Ceiba pentandra</i>	Malvaceae	Malvales	Tree
18	Nag champa	<i>Plumeria pudica</i>	Apocynaceae	Gentianales	Shrub
19	Chapha	<i>Plumeria obtusa</i>	Apocynaceae	Gentianales	Shrub
20	Chandani	<i>Tabernaemontana divaricata</i>	Apocynaceae	Gentianales	Shrub
21	Sonchafa	<i>Plumeria acutifolia</i>	Apocynaceae	Gentianales	Tree
22	Sadafuli	<i>Vinca rosea</i>	Apocynaceae	Gentianales	Herb
23	Sarpagandha	<i>Rauwolfia serpentina</i>	Apocynaceae	Gentianales	Shrub
24	Saptarni	<i>Alstonia schollaris</i>	Apocynaceae	Gentianales	Tree
25	Scarlet ixora	<i>Ixora coccinia</i>	Rubiaceae	Gentianales	Shrub
26	Madhukamini	<i>Murrya exotica</i>	Rutaceae	Sapondales	Shrub
27	Kadhipatta	<i>Murrraya koenighii</i>	Rutaceae	Sapondales	Shrub
28	Madhukamini	<i>Murrya exotica</i>	Rutaceae	Sapondales	Shrub
29	Suyalimbu	<i>Citrus limon</i>	Rutaceae	Sapondales	Shrub
30	Limbu	<i>Citrus medica</i>	Rutaceae	Sapondales	Tree
31	Acalypha	<i>Acalypha wilkesiana</i>	Euphorbiaceae	Malpighiales	Shrub
32	Castor	<i>Ricinus communis</i>	Euphorbiaceae	Malpighiales	Shrub
33	Duranta	<i>Duranta repens</i>	Verbanaceae	Lamiales	Shrub
34	Ghaneri	<i>Lantena camea</i>	verbanaceae	Lamiales	Herb
35	Sag/Teak	<i>Tectona grandis</i>	Verbinaceae	Lamiales	Tree
36	Shiwan	<i>Gmelina arborea</i>	Verbinaceae	Lamiales	Tree
37	Nirgundi	<i>Vitex nigundo</i>	Verbinaceae	Lamiales	Shrub
38	Adulasa	<i>Adathoda vasica</i>	Acathaceae	Lamiales	Shrub
39	Tulas	<i>Ocimum sanctum</i>	Lamiaceae	Lamiales	Shrub
40	Parijatak	<i>Nyctanthus arborites</i>	Oleaceae	Lamiales	Shrub
41	Pudina	<i>Mentha viridis</i>	Lamiaceae	Lamiales	Herb
42	Shyonak tree	<i>Oroxylum indicum</i>	Bignoniaceae	Lamiales	Tree
43	Kagadi flower	<i>Boganvallia spectabilis</i>	Nyctaginaceae	Caryophyllales	Shrub
44	Pipari	<i>Ficus benjamina</i>	Moraceae	Rosales	Shrub
45	Vad	<i>Ficus benghalensis</i>	Moraceae	Rosales	Tree
46	Umber	<i>Ficus racemosa</i>	Moraceae	Rosales	Tree
47	Rose	<i>Rosa sp.</i>	Rosaceae	Rosales	Shrub

48	Shrawani	<i>Lagerstroemia indica</i>	Lythraceae	Myrtales	Shrub
49	Crysanthemum	<i>Crysanthamum multifolium</i>	Asteraceae	Asterales	Herb
50	Kadulimb	<i>Azadirachta indica</i>	Meliaceae	Sapindales	Tree
51	Mahogani	<i>Swietenia macrophylla</i>	Meliaceae	Sapindales	Tree
52	Gugul	<i>Commiphoramukul</i>	Burseraceae	Sapindales	Herb
53	Shewaga	<i>Moringa oleifera</i>	Moringaceae	Brassicales	Tree
54	Ashwaghandha	<i>Withenia somnifera</i>	Solanaceae	Solanales	Shrub
55	Pimpali	<i>piper longum</i>	Piperaceae	Piperales	Tree
56	Almond	<i>Terminilia catappa</i>	Combretaceae	Myrtales	Tree
57	Arjun	<i>Terminalia arjuna</i>	Combretaceae	Myrtales	Tree
58	Ajwain	<i>Trachyspermum ammi</i>	Apiaceae	Apiales	Herb
59	Brahamni	<i>Centlia asiatica</i>	Apiaceae	Apiales	Herb
60	Tradescantia	<i>Tradescantia pallida</i>	Commelinaceae	Commelinales	Herb
61	Halad	<i>Curcuma longa</i>	Zingiberaceae	Zingiberales	Herb
62	Ambe halad	<i>Curcuma aromatic</i>	Zingiberaceae	Zingiberales	Herb
63	Elaychi	<i>Elettaria Cardamomum</i>	Zingibaraceae	Zingiberales	Herb
64	Rasana	<i>Alpinia galangal</i>	Zingiberaceae	Zingiberales	Herb
65	Korfad	<i>Aloe vera</i>	Liliaceae	Liliales	Herb
66	Satavri	<i>Asparagus recemosus</i>	Liliaceae	Liliales	Climber
67	Panfuti	<i>Bryophyllum calycinum</i>	Crassulaceae	Saxifragales	Herb
68	Sitaphal	<i>Annona squamosa</i>	Annonaceae	Magnoliales	Tree
69	Kandavel	<i>Cissus quadrangularis</i>	Vitaceae	Rhamnales	Climber
70	Gavati chahha	<i>Andropogon citratum</i>	Poaceae	Poales	Herb
71	Vala	<i>Vetiveria zizanoide</i>	Graminae	Poales	Herb
72	Areca palm	<i>Chrysalidocarpus lutesence</i>	Arecaceae	Arecales	Shrub
73	Date palm	<i>Phoenix dactylifera</i>	Arecaceae	Arecales	Shrub
74	Bottel palm	<i>Hyophorbe lagenicaulis</i>	Arecaceae	Arecales	Tree

Gymnosperm and Pteridophyte

Sr No.	Vernacular Name	Botanical Name	family	order	Habit
75	Suru	<i>Casuarina equisetifolia</i>	Casuarinaceae	Fagales	shrub
76	Thuja	<i>Thuja oxidentalis</i>	Cupressaceae	Cupressales	Shrub
77	Cycas	<i>Cycas revolute</i>	Cycadaceae	Cycadales	Tree
78	Christmas tree	<i>Aarucaria columanaris</i>	Arucariaceae	Conifers	Tree
79	Nephrolepis	<i>Neohrolepis exaltata</i>	Lomariopsidaceae	Polipodiales	herb


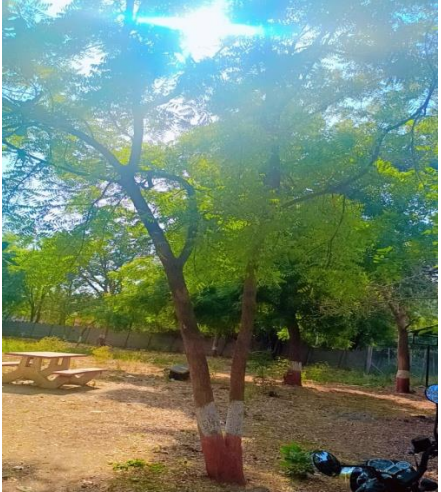

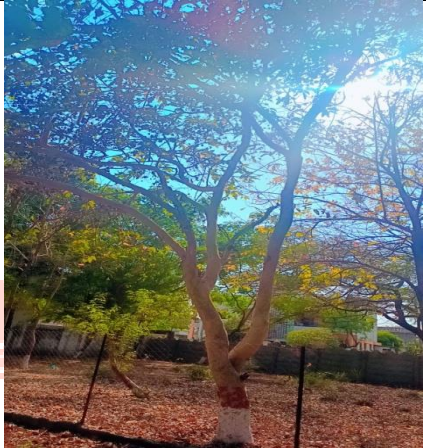

Angiosperms		
		
<i>Ficus benghalensis</i>	<i>Azadirachta indica</i>	<i>Pithecolobium dulce</i>
		
<i>Ficus racemosa</i>	<i>Plumeria acutifolia</i>	<i>Terminalia arjuna</i>
Gymnosperms		
		
<i>Cycas revolute</i>	<i>Aarucaria columanaris</i>	<i>Casuarina equisetifolia</i>

Figure 3: Plate showing images of biodiversity

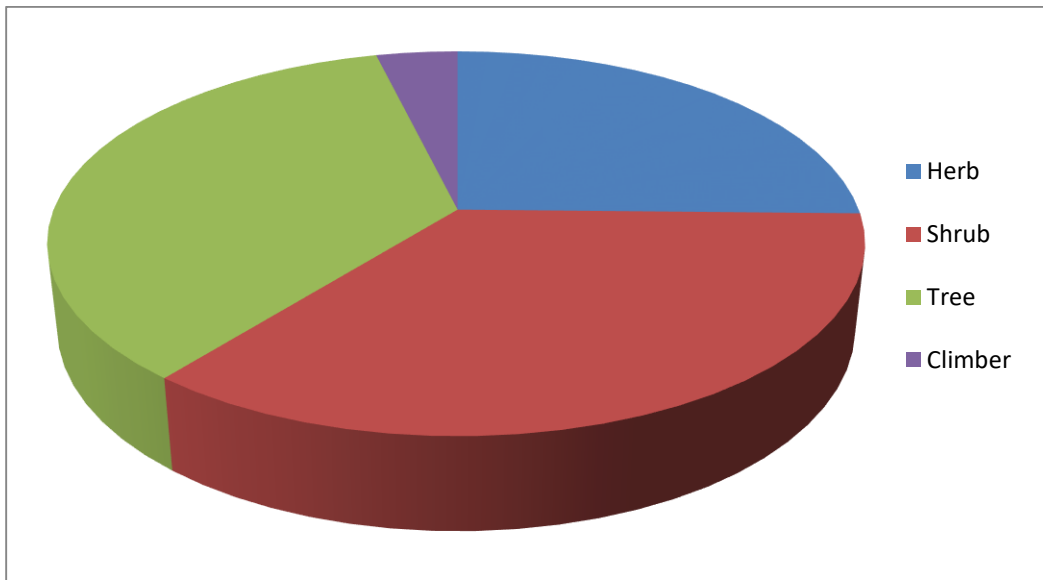


Figure 4: Analysis of habit-wise distribution of plant species in the campus

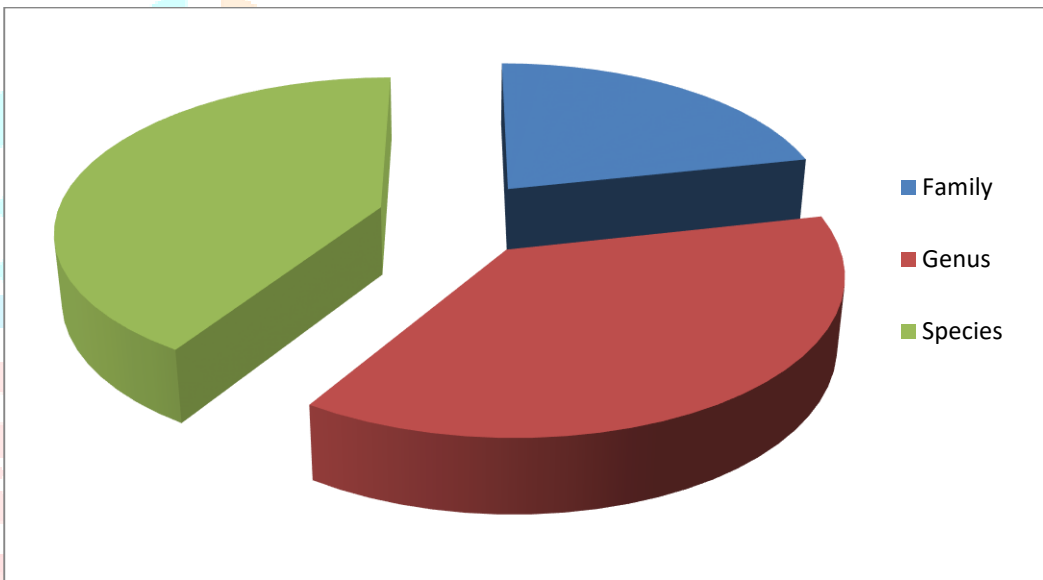


Figure 5: Analysis of total no. of Family, Genus and plant species in the campus

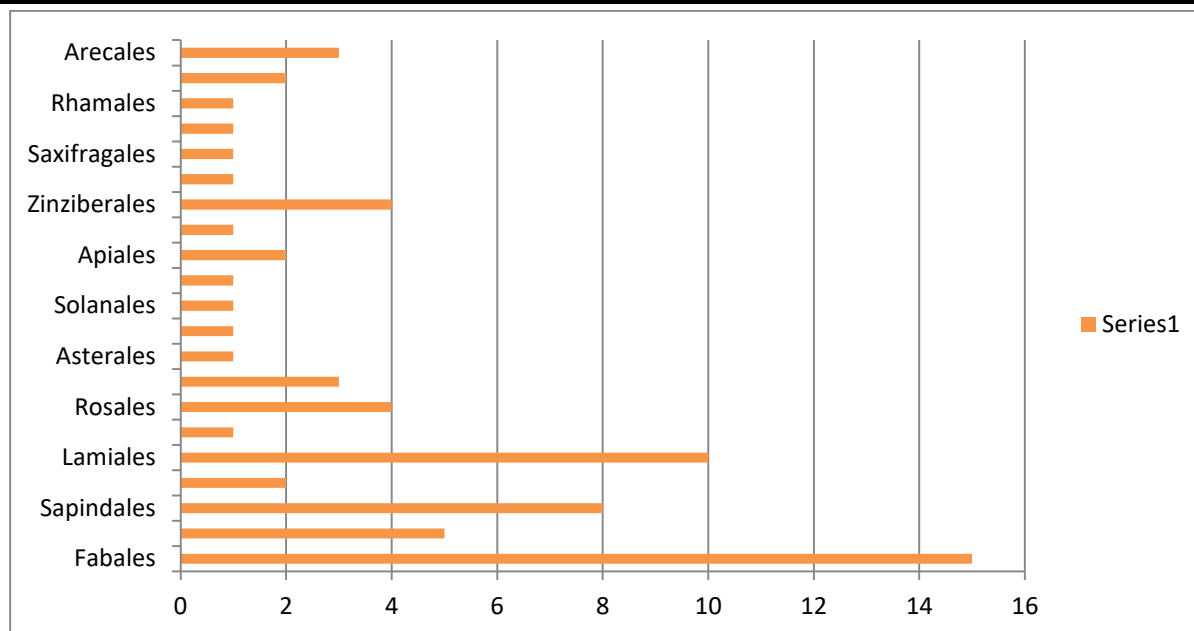


Figure 6: Order wise percentage composition of Flora recorded

RESULT AND DISCUSSION

During this study we have observed 79 different species of flora from one year study. These plant species belonged to 21 different orders of Angiosperms. Out of which order Fabales was dominant in our study area with 15 species in its category followed by Order Lamiales with 10 species, Sapindales with 8, Gentianales with 5. List of recorded Angiosperms, Gymnosperm and Pteridophytes is mentioned in Table 1 and order wise percent composition is shown in figure 6. In our study there were invasive species also like *Parthenium hysterophorus* (Gajar Ghas) and *Lantana camara* (West Indian Lantana).

CONCLUSION

The above study showed that the campus is rich in diversity of plants and has various patches which include Angiosperm, Gymnosperm and Pteridophyte. Most of the species are economically important and having medicinal values. Fabales and Lamiales order were dominant in our study. The present study would be helpful for the conservation of diversity especially in the context of endemic plants which has to be conserved. Proper scientific documentation helps to know the floral diversity present in the surrounding and create awareness and will give an insight to community for sustainable utilization and conservation of plants.

REFERENCES

1. Anonymous, (2012). Plant Discoveries (2011). New Genera, Species and New Records. Botanical Survey of India, Ministry of Environment and Forests, Government of India
2. Bagul R.M. (2017) Biodiversity of tree species with special reference to rare, endangered and threatened plants species of padmalaya forest region of jalgaon district(M.S.), India Plant Archives Vol. 17 No. 2, pp. 866-868 ISSN 0972-521
3. Cook (1958). Flora of The Presidency of Bombay. Vol. I, II & III. Bot. Survey of India, Calcutta, (Repr.ed.).
4. Kshirsagar S.R. and Patil D.A. (2008) Flora of Jalgaon district, Maharashtra Bishen Singh Mahendra Pal Singh, Dehradun, 41-376..
5. Kshirsagar SR and Patil DA (2004). Observation to Endemic Plants in Jalgaon District (Maharashtra). Journal of Economic and Taxonomic Botany 3 856-860
6. K.Patil, B.Arts (2012) Biodiversity of vulnerable and endangered plant from Jalgaon district of North Maharashtra, Environmental science, Biology.
7. Nayar, M. P and A. R. K. Sastry (1988). Red Data Book of Indian Plants. Volume II. Botanical Survey of India.
8. Nayar, M. P. and A. R. K. Sastry (1987). Red Data Book of Indian Plants. Volume I. Botanical Survey of India.

9. Patil D. A. (2003). Flora of Dhule and Nandurbar District (Maharashtra), (Bishen Singh Mahendra Pal Singh, Deheradun, India).
10. Patil Vidya and Yadav S.S. (2016). Critically endangered flowering plants in the forest of jalgaon district (M.S) India Indian Journal of Plant Sciences ISSN: 2319–3824.

