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Study of Avenue Tree Diversity of Urban Area of Nanded District Maharashtra State India

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Abstract: ***In the whole plant kingdom the flowering plant is major natural source of human companion with biodiversity kin this world. India occupies major geographic region in the world map. The present investigation was carried out in Nanded only 64^{2}sq km area of Nanded district Maharashtra state with the help of survey method during the 2016 total 51 Species were recorded in 25FamiliesThe dominant species are Azadirachta indica. L, Terminalia cattapa.L, Peltophorum petrocarpum.Dc, Ceasalpinia pulcherrima.L, Delonix regia.L .The two gymnospermic species also were reported. Which are grown as avenue trees, shade plant, and ornamental species are grown different region of the town. Basically they are grown along the road side, road dividers.***

Keyword: Nanded city, Avenue, Tree diversity

1. Introduction

The tree, present along the road side is known as avenue tree, including city along with highway.

These tree maintain healthy environment, reduce pollution level,increase greenery and beauty of the place. Avenue tree directly connected with biodiversity. It play dynamic role to maintain the ecological equilibrium. [5] These tree play vital role in the maintenances of eco-system and provide natural, social, physiological services with balancing the nature, and enhance the air quality. [6]

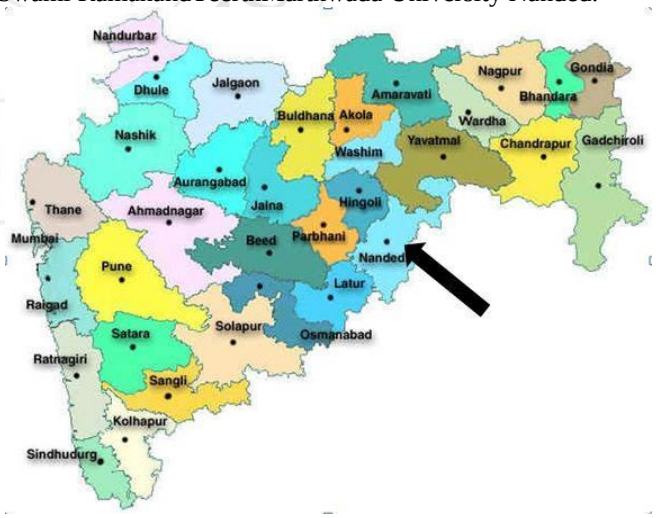
Presently world facing high problem environment and they ultimately disturb the eco-system. The unornamented reason behind that global warming, flood, droughts, toxic gases effect. Every single tree play multiple function in the biodiversity. [3] In recent year the acceleration of carbon di oxide in urban cities is not only directly connected with population but also amplifying the vehicular traffic followed by the industrial pollution. Avenue tree only is solution to protect the environment from these problem.

India is witness of towering level of air pollution. The considerable loss in India due to construction, industrialization with urbanization development. [7]

Present investigation related with Nanded city only. Through these studies we try to provide information about tree diversity status Nanded district located in south west region of Maharashtra state in India. Nanded district lies in between 19.1531 north latitude and 77.3058 east longitudes and city situated on Godavari River. Nanded city consist 64^{squre} km area according to Nanded Waghala City Municipal Corporation Nanded, and population of the city were 550,564 according to 2011 census, major progressive work done in 2008 on the occasion of "Guru-Ta-Gaddi" from present investigation we try to provide a list of trees and shrub for this purpose we doing photography and collecting plant twig of some plant for correct identification we used different types of flora. Through present investigation we try to provide list of trees including shrubs only with local name, short description and distribution in Nanded city.

2. Material and Methods

The study area was only Nanded city 64^{squre} km and for present investigation the study area was divided according to road for easy and systematic study. Weekly survey was made to observe the plant (Trees). The study and survey was done along the road side to represent almost all species of tree at the time of visiting. The photography were taken with high resolution camera and try to identify almost all species in the field but when any species cannot try to identified on the field the twig were collected and identified on the field in the laboratory of Botany Department, School of Life Science, Swami RamanandTeerthMarthwada University Nanded.



Table

Sr. no	*Botincal name*	*Familiy*	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*	*R10*
1	*Mangifera indica*.L.	Anacardiaceae	-	+	+	-	-	+	-	-	+	+
2	*Cocos nucifera*.L	Arecaceae	-	-	-	+	-	-	-	+	+	-
3	*Annona squamosa*.L	Annonaceae	-	-	-	-	-	-	-	+	-	+
4	*Annona reticulata*.L	Annonaceae	-	-	-	-	-	-	-	+	-	-
5	*Neriumindicum*.L	Apocynaceae	-	-	-	-	-	-	-	+	+	+
6	*Thevetia peruvinia*.L	Apocynaceae	-	-	-	-	-	-	-	-	+	+
7	*Plumera rubra*.L	Apocynaceae	+	-	-	-	-	-	-	-	-	-
8	*Alstonia scholaris .R*	Apocynaceae	-	+	+	+	-	+	-	+	-	-
9	*Kigelia pinnata*.DC	Bignoniaceae	-	-	-	-	-	-	-	-	+	-
10	*Millingtonia hortensis.L*	Bignoniaceae	-	+	-	-	-	-	-	-	+	-
11	*Ticoma stans*.L	Biognoniaceae	-	-	-	-	+	-	-	+	-	-
12	*Cordia dichtama*.L	Boraginaceae	-	-	-	-	+	+	-	-	+	-
13	*Hardwickia binate*.L	Caesalpiniaceae	-	-	-	-	-	-	-	-	+	-
14	*Tamarandus indica*.L	Caesalpiniaceae	-	-	-	-	-	-	-	-	-	+
15	*Ceasalpinia pulcherrima*.L	Caesalpiniaceae	+	+	-	-	+	+	+	+	+	+
16	*Delonix regia*.L	Caesalpiniaceae	+	+	+	-	+	+	-	+	+	+
17	*Peltophorum petrocarpum*.Dc.	Caesalpiniaceae	-	+	+	+	+	+	+	-	-	+
	Casaurina equisetifolia.L	Casurinaceae	-	+	-	-	-	-	-	+	+	-
19	*Quisaqualis indica*.L	Combrateace	-	-	-	-	-	-	-	+	+	+
20	*Terminalia cattapa*.L	Combreteaceae	-	+	-	+	-	+	+	+	+	+
21	*Emblica officinalis*.L	Euphorbiaceae	-	-	+	-	-	-	-	-	-	-
22	*Ricinus communis*.L	Euphorbiaceae	-	-	-	-	-	-	-	-	-	+
23	*Butea monosperma*. L	Fabaceae	-	+	-	-	-	-	-	-	-	+
24	*Bauhinia racemosa*.L	Fabaceae	-	-	-	-	-	-	-	-	+	-
25	*Pongamia pinnata.L.*	Fabaceae	-	+	-	-	-	+	-	-	-	+
26	*Dalbergia sissoo.R*	Fabaceae	+	-	+	-	-	+	-	-	+	-
27	*Melia azedaraha*.L	Meeliaceae	-	-	-	+	-	-	-	-	-	-
28	*Azadirachta indica*. L	Meliaceae	-	+	+	+	+	+	+	+	+	+
29	*Morus alba*.L	Moraceae	-	-	-	-	-	-	-	-	+	+
30	*Ficus carica*.L	Moreceae	-	-	-	-	-	-	-	-	-	+
31	*Ficus racemose*.L	Moraceae	+	-	+	-	+	-	+	+	-	+
32	*Ficus religiosa* .L	Moraceae	+	-	+	+	+	-	+	-	+	-
33	*Moringa olifera*.L	Moringaceae	-	-	-	-	-	-	-	+	+	+
34	*Albizia saman*	Mimosaceae	-	+	-	-	+	+	+	-	-	+
35	*Acacia arabica. L*	Mimosaceae	-	+	-	-	+	+	+	+	-	+
36	*Albizia lebbeck*.L	Mimosaceae	-	-	-	-	+	+	-	+	+	+
37	*Acacia catechu*. L	Mimosaceae	-	-	+	-	-	-	-	-	-	+
38	*Eucalytus globulus.L*	Myrtaceae	-	+	+	+	-	+	-	-	+	+
39	*Psidium guajava*.L.	Myrtaceae	-	-	+	-	-	-	-	-	-	+
40	*Syzygium cumini*.L	Myrtaceae	-	+	-	-	+	-	-	-	+	+
41	*Callistemon viminails*.L	Myrtaceae	-	+	+	-	-	-	-	-	-	-
42	*Prunus avium*.L	Rosaceae	-	-	-	-	-	-	-	-	-	+
43	*Bougainvillea glabra*.L	Nyctaginaceae	-	-	-	+	+	-	-	-	+	+
44	*Bombax malabaricum*.L	Poaceae	-	-	-	-	-	-	+	-	-	+
45	*Bambusa vulgaris*.L	Poaceae	-	+	-	-	-	-	-	+	+	-
46	*Ziziphus mavritiana*.L	Rhamnaceae	-	-	+	-	-	-	-	+	-	+
47	*Prunus avium*.L	Rosaceae	-	-	-	-	-	-	-	-	-	+
48	*Limonia acidissima*.L	Rubiaceae	-	-	-	-	-	-	-	-	+	-
49	*Tectona grandis*.L	Verbenaceae.	-	-	+	-	+	-	-	-	+	-
Gymnosperm:-												
50	*Cycasbeddomi*	Cycadaceae	**Present at Bhagayanagar corner**									
51	*Thujaoccidentalis*	Cupressaceae	**Present at workshop corner road**									

Abbreviations:-
R1. SP office to Klamandir, R2 Klamandir to Shivajinagar, R3 Shivajinagar to Raj corner, R4 Work shop corner to Anand Nagar petrol pump,
R5 Maharana.P chowk to Sathe chowk, R6 Sathe chowk to ITI corner,
R7 Visava Garden to Bhagayanagar corner, R8 Anand Nagar to Visava Garden,
R9 Sathe chowk to Mahivir chowk, R10 Mahavir chowk to railway station

3. Result

In present investigation total 51 species were recorded. In 51 species 49 belongs to angiosperm and 2 belongs to gymnosperm. And 25 families were reported in which two

belongs to gymnosperm. Mostly species belong to dicot and very less belongs to monocot. The dominant species are *Azadirachta indica*. L, *Terminalia cattapa*.L, *Peltophorum petrocarpum*.Dc, *Ceasalpinia pulcherrima*.L, *Delonix regia*. L.Beside overhead trees some shrub cultivated along the divider and road side. These are *Nerium indicum*.L, *Plumera rubra*.L etc. almost all species are deciduous and very few are ever green. The reported plant were arranged family wise and their presence and absence are indicated by + ve and –ve symbol.

4. Discussion

In present investigation total 51 were recorded and belongs 25 families. The dominant specie *Azadirachtaindica*. L, *Terminalia cattapa*.L, *Peltophorum petrocarpum*.Dc, *Ceasalpinia pulcherrima*.L, *Delonix regia*.L .The all reported species play significant role in the maintenance of eco system, shade, ornamental, and medicinal value.Exotic trees are very good for cultivation because these tree species survival in any climatic condition. The main aspect of tree cultivation in the city to provide shade, greenery belt, ornamental, aesthetic, and many more benefit. Another one important task of planting in city area is to reduce the carbon di oxide level with reducing pollution. The inventory of avenue tree is prepared by their botanical name, common name, family, fruiting flowering season and distribution in Nanded city. Major plantation were done in 2008 in "Guru ta Gaddi" program and almost species were cultivated by Gurdwara department. In these investigation it also reported that various place are neglected from the cultivation of plant.

5. Conclusion

The present investigations provide status of avenue tree diversity. Nanded district one of the developing city of Maharashtra state and want to create high plantation along the road side with development because these carriage way to reduce the pollution. Trees are nature air purifier and they maintain the natural energy importance for cooling by 10% to 50% and electricity used by 24% in California. [4]

From present investigation it is revealed that avenue tree are not only important purifier for city environment but also they provide pure oxygen to human and animal. There is more free spaces were recorded where plantations is escape. These all spaces are suitable for growth of plant. Some trees are died because inappropriate administration. Beside these some plants are cultivated in improper manner. Present study also reported some trees are kill due to electricity wire because of tree creating problem to electricity supply. Here is important to save tree because simple small plant require many year and affords to convert into tree.

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