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AWARENESS OF THE CITIZENS ABOUT AVENUE TREES IN ANAND AND VIDYANAGAR, GUJARAT

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ABSTRACT:

The present investigation is an attempt to record the taxonomical studies of avenue trees of Anand and Vidyanagar in different habitat and status of awareness about the avenue trees. An attempt was made to assess the status of awareness about the avenue trees among different walks of people, mainly the students, at the beginning of this study. Total 250 individuals were selected randomly at various spots, and interviewed for this purpose. 71 avenue tree species were recorded. Among them Caesalpiniaceae, Mimosaceae, Meliaceae, Combretaceae, Euphorbiaceae, Bignoniaceae are the dominant families of avenue trees in Anand and Vidyanagar.

KEY WORD: Avenue tree, Dominant, Anand, Vidyanagar.

INTRODUCTION:

The word tree may be define as an adult woody plant which is always perennial and capable of attaining maximum height up to 4 meter tall and having non climbing and self-supporting trunk. They may be usually branched. Trees are generally grown for various purposes such as for shading, as avenue or for economic values. Tree are beneficial for all including living and non-living organisms. Animals and birds are also depending on them for their food, shelter and other purposes. They provide place even for other plants such as bushes, shrubs and herbs to flourish under the canopy, epiphytes, parasites and climbers to grow on over the canopy. More over the dead tree are also useful for various kind of organism in the sense to provide

support the life to insects, fungi etc. Trees also helpful to improve the environment in such a way check soil erosion, maintain soil moisture, clearance of atmosphere by releasing Oxygen and protect the environment.

Variety of trees are found in nature differing in shape size and form. Each species is distinct and often recognizable by a range of morphological characters. It include features of bark, leaves, flower etc. The landscape value hold the prime importance of tree. Man has also developed techniques to have the desired benefit from the tree to the maximum extent. This process has been increased due to the advent of biotechnology. Tree planted along the road sides, private and public places often with high movement of people are known as avenues tree, which are based on the species of trees grown in the particular area. Trees add beauty, giving shade and protecting the houses. Trees regarded as ornaments of road. Trees are pre dominant features in landscape design planting along the road is more or less clothing the road.

Classification of Trees.

The trees may be classified into different categories depending upon many criteria.

I: Botanical classification.

In this method trees are classified largely on the basis of morphological characters into different taxonomic categories such as under, family, genus and species. Trees belonging to particular family, genus or species have some characters in common by which they may be distinguished from other trees. For instance *Melia azedarach* and *Melia composite* are the two species belonging to the same genus, 'Melia'; while *Melia* and *Azadiracta* are the two genera belonging to the same family, 'Meliaceae'.

II: Behaviour Classification.

Trees are also classified according to habitat of their growth, type of leaves, nature of climate under which they grow best.

1. Deciduous Trees:

Deciduous trees come in a wide variety of sizes, shapes, forms, colors and textures. Deciduous trees are those that lose their leaves each fall, go dormant for the winter, and leaf out again in spring. They provide us with beauty, shade, and shelter, and are an integral part of our landscapes. Trees also reduce soil erosion, recycle nutrients, and exchange carbon dioxide for the oxygen we need. Perhaps most important to many people, deciduous trees provide visual structure and canopy, contributing greatly to the aesthetics of our landscape designs. While many trees are quite tall at maturity, we also utilize a good deal of smaller, ornamental trees in our landscapes. Deciduous trees are often collectively referred to as hardwoods.

Azadirachta indica, *Kigelia pinnata* are the most common examples of deciduous trees.

2. Evergreen Trees:

These trees don't shed their leaves off in specific season, but old leaves shed while new leaves emerged continuously almost throughout the year or in specific season. These trees never become leafless and may have two or three flushes of vegetative growth during a year. In general new growth starts in spring and then again in the autumn season. These trees do not go in dormancy. *Tamarindus indica*, *Achras zapota*, *Mangifera indica* etc are familiar examples of this category. There are some tree species that may be semi evergreen or semi deciduous. They do not behave strictly as evergreen or deciduous, but remain in between the two classes as they have the ability to adjust themselves according to the climatic conditions.

III: Climatic classification.

1. Temperate Trees: plants require a cold winter season as well as a summer growing season, and are adapted to survive temperatures considerably below freezing. Temperature may go beyond 0°C even up to -32°C . Summers are mild and only such trees that can pass through severe winter can survive. Trees are mostly depending on natural rainfall or snow. Trees are usually tall, spreading and have strong framework and are quite resistant to such conditions. Examples include *apples*, *cherries*, *peaches*, *maples*, *cottonwoods*, and *aspen*. In temperate-zones, tropical and sub-tropical plants are grown as annuals and houseplants.

2. Tropical Trees: plants originate in tropical climates with a year-round summer-like growing season without freezing temperatures. Summers are quite hot and there is less rainfall. The temperature in summer may reach 48°C or more while during winter may decrease around $2-3^{\circ}\text{C}$. Only xerophytic trees that may tolerate drought conditions can survive. They may have small leaves like needles, swollen leaves or shoots as in *Thuja* sps. Examples include *Cocoa*, *Cashew* and *Macadamia* nuts, *Banana*, *Mango*, *Papaya*, and *Pineapple*.

3. Sub-Tropical Trees: plants cannot tolerate severe winter temperatures but need some winter chilling. The type of climate is mild *i.e.* summers are not too hot and winters are not too cool. The temperature even goes above 45°C during summer and below $4-5^{\circ}\text{C}$ in winter. Trees have luxuriant growth during the whole year. Trees of tropical and temperate climate can adjust themselves well to these conditions. Examples include *Citrus*, *Dates*, *Figs*, and *Olives*.

MATERIAL AND METHODS:

STATUS OF AWARENESS ABOUT THE AVENUE TREES

The avenue trees of our habitations are closely associated with our daily life. Every day we come across them while sipping the morning cup of coffee in the corridor listening to the melodious song of koel hidden in

the tree canopy. While driving the car or riding the two wheeler along the roads in the town, while going to office from home and returning back, while walking across a street, while watching the sky through the window of living room and so on. It may be very difficult to find anyone who does not come across a tree in his/her daily life. Whether we do agree or do not with the poets who tried to teach us that tree also express and exchange their feelings with us, provided we are sensitive to grasp their feelings, it is certain that avenue trees are the silent spectators of not only our feelings and progress but also the growth of each and every sphere of society. Therefore, it becomes a genuine reason that we should know the tree of our surrounding by its name (be it a universal one or vernacular one) is like knowing a tree of our neighbor by his/her name if people have the awareness about trees and their values it will help us to make our environment more pleasant and safe live.

Focusing on this to logical background and forming a hypothesis that many of trees species occurring in Vallabh vidyanagar and Anand are known to many of the citizens living there in an attempt was made to assess the status of awareness about the avenue trees among different walks of people, mainly the students, at the beginning of this study. 250 individuals were selected randomly at various spots within and around the university campus and interviewed for this purpose. Out of 250, 211 are from student community and 37 are either employed or housewives or involved in some other profession, while 2 are illiterate housewives. Along the total of 211 students 121 are from science stream and 82 are from Arts or commerce (non- Science) streams, while 8 are from school students of X class or below standard where science and non-science students are not differentiated. In the context of gender the respondents comprised of 70% (175/250) females and 30% (74/250) males. Each selected individual, on the spot, was asked to name the tree found nearby that particular spot. Incidentally, about 90-95% of the selected persons showed interest in this exercise and readily responded to the interviews.

34 tree species which are commonly found at various spots, where interviews conducted were covered in the survey. Each selected person was asked to recognize and name at least five plants of the spot.

The responses were recorded in the field notebook in the form a table. The abstract of the finding are shown in the table 1.

RESULTS AND DISCUSSIONS:

It is evident from the earlier chapter that though the avenue trees of Vallabh Vidyanagar and Anand are represented by a wide range of species, they are mostly dominated by five species, namely the copper pod tree (*Peltophorum pterocarpum*), the neem tree (*Azadirachta indica*), the sausage tree (*Kigelia pinnata*), the Indian medlar tree (*mimusops elengi*), the kasod tree (*Cassia siamea*), the red cassia tree (*Cassia roxburghii*), the rain tree (*Samanea saman*), and Indian Laburnum tree (*Cassia fistula*). However, the neem tree and the mast tree are the only two trees which are very familiar to the citizens of Vallabh

Vidyanagar and Anand. They are almost unmistakably recognized by the respondents. Out of 220 people asked about neem tree, only 2 give wrong name (lemon); while 5 persons were not confident, hence said "Don't Know". Rest of all 213 respondent named correctly as Neem, Limdo, Kadvo Limado and *Azadirachta indica* etc. In case if the mast tree out of 215 people asked for, 212 named it correctly by calling it, Asopalav or Ashok. Two gave wrong names while one was ignorant of it. Among the two one called it mango tree another one called it champa tree.

Likewise mango, peepal, sapota, Eucalyptus, jamun are the few other tree sps which were satisfactorily named by the majority of people. Rest of the tree sps from Vallabh Vidyanagar and Anand could not be recognized by the majority of people. Sapota, mango and jamun are familiar due to their edible fruits, whereas peepal tree and vad are popular because of religious importance.

Peltophorum pterocarpum is most dominant tree found along the avenues of V.V.Nagar and Anand. This tree represented by 649 individuals almost all over street of town ship. However 72% responded are ignorant of this tree, only 4% could correctly name it and 25% ignored it. Out of this the 30 respondents who gave incorrect name 24 mistaken with Gulmohar, while 3 compare with Temarend tree

Similarly in case of *Albizia lebbeck* is another dominant tree species. About 85% respondents expressed their view of it by seeing don't know. While 9 % wrongly name, only 6% could correctly name this tree. Another example is that out of 34 respondents for recognizing the rain tree (*Samanea Saman*), 30 were not able to name it, while 4% wrongly call it Gulmohar. Other tree species such as Sausage tree, Red *Cassia*, Devil's tree, Canon ball tree were not recognizing by even a single person.

A glance at age group of respondents revealed that people of 40 to 50 years ago gave answer are more satisfactory than young generation. It clearly against the assumption that the student community is more aware of trees as they are the part of natural living resources.

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Table 1: Status of Awareness among the citizens of Vallabh Vidyanagar and Anand about the avenue trees.

Name of the tree	A	B	C	D	E
<i>Acacia nilotica</i> (L.) Del.	45	40	3	2	88.89
<i>Achras zapota</i> L.	30	22	-	8	73.33
<i>Albizia lebbbeck</i> (L.) Bth.	170	15	12	143	8.82
<i>Alstonia schlolaris</i> R. Br.	9	2	1	6	22.22
<i>Annona squamosal</i> L.	8	6	1	1	75.00
<i>Azadirachta indica</i> A. Juss.	220	213	2	5	96.82
<i>Bauhinia purpurea</i> L.	6	1	1	4	16.67
<i>Cassia fistula</i> L.	43	27	12	4	62.79
<i>Casuarina equisetifolia</i> L.	22	2	3	17	9.09
<i>Ceiba pentandra</i> L. Gaertn.	17	5	1	11	29.41
<i>Delonix regia</i> (Boj.) Raf.	15	6	-	9	40.00
<i>Eucalyptus globulus</i> Labill.	27	23	2	2	85.19
<i>Ficus benghalensis</i> L.	24	10	2	12	41.67
<i>Ficus racemosa</i> L.	29	17	5	7	58.62
<i>Ficus religiosa</i> L.	94	90	3	1	95.74
<i>Holoptelea integrifolia</i> (Roxb.) Planch.	23	4	2	17	17.39

Name of the tree	A	B	C	D	E
<i>Kigelia pinnata</i> (Jacq.) DC.	15	5	-	10	33.33
<i>Madhuca indica</i> J. F. Gmel.	8	1	2	5	12.50
<i>Manilkara hexandra</i> (Roxb.) Dub.	14	1	-	13	7.14
<i>Mangifera indica</i> Linn.	95	87	6	2	91.58
<i>Mimusops elengi</i> L.	20	3	2	15	15.00
<i>Parkia biglandulosa</i> Wight. & Arn.	11	-	5	6	0.00
<i>Peltophorum pterocarpum</i> (DC.) Backer ex Heyne	138	35	19	84	25.36
<i>Polyalthia longifolia</i> (Sonn.) Thw.	215	212	2	1	98.60
<i>Plumeria rubra</i> L.	25	2	4	19	8.00
<i>Samanea saman</i> (Jacq.) Merr.	50	3	2	45	6.00
<i>Sapindus laurifolius</i> Vahl.	5	1	-	4	20.00
<i>Saraca asoca</i> (Roxb.) de Willd.	32	2	3	27	6.25
<i>Syzygium cumini</i> (L.) Skeels	32	20	5	7	62.50
<i>Tamarindus indica</i> L.	19	9	2	8	47.37
<i>Tectona grandis</i> L.f.	12	5	3	4	41.67
Total	1473	869	105	499	59.00

Whereas

A: Number of respondents interviewed.

B: Number of respondents correctly named.

C: Number of respondents wrongly named.

D: Number of respondents who say don't know.

E: % of individual who correctly named.

Status of Awareness among the citizens of Vallabh Vidyanagar and Anand about the avenue trees

