




Trees of

BHUU



November 2023 to December 2024

Prepared By : Dr. Pankaj Joshi | Dr. Ekta Joshi

TREES OF BHUJ

TREES AND SMALL TREES SPECIES RECORDED IN
BHUJ URBAN LANDSCAPES

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Data based- Trees and Small Trees available on: <http://www.treesofbhuj.in>

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PREFACE

Bhuj, a vibrant city in the heart of Kutch, Gujarat, is a witness to resilience and harmony between nature and human life. Its semi-arid landscape, shaped by harsh climatic conditions, might seem challenging at first glance. Yet, amidst the dry winds and rugged terrain, Bhuj is home to a rich tapestry of trees that not only sustain life but also narrate stories of culture, history and survival.

This book, *Trees of Bhuj*, is a humble effort to document the diverse tree and small tree species found in this unique urban landscape. It celebrates their ecological importance, cultural significance, and the invaluable role they play in the lives of the people. From the sacred Peepal to the ever-useful Neem, each tree has a story to tell — of endurance, utility, and beauty. The idea for this book was inspired by the need to bridge the gap between science and tradition, combining botanical knowledge with local wisdom. It is not just a guide for nature enthusiasts or botanists but also a resource for anyone who wishes to understand and appreciate Bhuj's green heritage. The book integrates modern technology, with GPS coordinates mapping each species, enabling readers to locate and explore these trees themselves (<http://www.treesofbhuj.in>).

In a time when urbanization and climate change threaten our natural ecosystems, this book serves as a reminder of the importance of trees in sustaining life and maintaining balance. It is also a call to action — to protect, preserve, and celebrate these silent sentinels of Bhuj.

This attempt of two years by our team would not have been possible without the contributions of local communities, ecologists, traditional *vaidh* and nature lovers who shared their knowledge and stories. It is our hope that this book will inspire a deeper connection to nature and foster efforts toward conservation in Bhuj and adjoining natural ecosystems including rivulets, wetlands, tropical thorn forests, agriculture live hedges, and scattered native plant species in Bhuj Urban Landscape.

With gratitude and hope,

Dr. Pankaj Joshi
Dr. Ekta Joshi
Mr. Manoj Solanki

Bhuj, Gujarat
2023-24

ACKNOWLEDGMENTS

This book, *Trees of Bhuj*, is the culmination of collective efforts, passion, and invaluable support from many individuals- Mr. Vivek Chauhan, Mr.Kishan Prajapati, Ms.Kajbanu Sumra and Ms.Khyati Thacker and organizations- KMVS-HIC for funding support, SETU for coordination support, K-Link for data management and Lalan College for providing students; It would not have been possible without their contributions and encouragement.

First and foremost, we express our heartfelt gratitude to the local communities of Bhuj. Their deep connection with the land, their stories, and their wisdom about the cultural and ecological significance of trees enriched this book immensely. We are deeply thankful to the botanists, ecologists, traditional *vaidh*- Sh. Salemamad Jat (shared main uses of trees) and researchers who guided us in identifying and documenting the diverse tree species of Bhuj. Their expertise ensured the scientific accuracy of this work. Special thanks to Dr. Hiren Soni, Dr.Suresh Patel and Dr.Vinod Pandey whose invaluable insights and guidance were instrumental throughout this journey.

To the organizations and environmental groups working tirelessly for the conservation of Bhuj's green cover, including Sahyog Van team, Jaynagar Van Team and Mission Green Bhuj, your dedication to preserving nature inspired much of this work. Your efforts are the foundation for a sustainable future. Special thanks to the developers (Mr.Yash Barad and Mr.Dhansukh Patel) of mobile and mapping applications that made data collection efficient and precise. The GPS mapping of trees in this book was made possible through technology that bridges science and storytelling.

Lastly, we are deeply grateful to our family and friends for their unwavering support, encouragement, and patience during this work. Your belief in this vision kept us motivated every step of the way. This book is a labor of love, created to celebrate the ecological and cultural treasures of Bhuj. To everyone who contributed, whether through knowledge, inspiration, or support, we offer our sincerest thanks.

With gratitude,

Dr. Pankaj Joshi

Dr. Ekta Joshi

Mr. Manoj Solanki

INDEX

PREFACE

ACKNOWLEDGEMENTS

1. BACKGROUND NOTE

- 1.1.Kutch District and Bhuj Urban Landscape (Bul)
- 1.2.References on Biodiversity and Ecology of Bhuj

2. HIC NETWORK AND FELLOWSHIP FOR TREE MAPPING

- 2.1.Ward-wise recorded Total Trees and Dominant Species in Bhuj
- 2.2.Rare or Ecologically Significance Species need to be Planted

3. LOCAL NAME WISE INDEX OF PLANT SPECIES

S. No	Local Name	Botanical Name/ Species
1	Ambo (આંબો)	<i>Mangifera indica</i> L.
2	Amla (આમળાં)	<i>Emblica officinalis</i> Gaertn.
3	Anjir (અંજીર)	<i>Ficus carica</i> L.
4	Arduso (અરડુંસી)	<i>Ailanthus excelsa</i> Roxb.
5	Aritha (અરીઠા)	<i>Sapindus emarginatus</i> Vahl.
6	Arjun Sadad (અર્જુન સાદડ)	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.
7	Ashitro (આશીત્રો)	<i>Bauhinia racemosa</i> Lam.
8	Ashopalav (આસોપાલવ)	<i>Polyalthia longifolia</i> (Sonner) Thwaites
9	Australian Bavar (ઓસ્ટ્રેલિયન બાવળ)	<i>Acacia auriculiformis</i>
10	Bakan Limdo (બકાન લીમડો)	<i>Melia azedarach</i> L.
11	Balam Khira, Topgolo (તોપગોળો)	<i>Kigella pinnata</i> (Jacq.) DC.
12	Bamboo (વાંસ, બાંબુ)	<i>Bambusa stricata</i> Lodd. & Lindl.
13	Bijoru (બિજોરુ)	<i>Citrus medica</i> wight & Arn
14	Billipatra (બિલીપત્ર)	<i>Aegle marmelos</i> (L.) Correa
15	Borasali (બોરસલી)	<i>Mimusops elengi</i> L.
16	Bottle Brush (બોટલ બ્રશ)	<i>Callistemon viminalis</i> (Soland. Ex Guertn). G. Don

S. No	Local Name	Botanical Name/ Species
17	Bottle Palm (બોટલ પામ)	<i>Roystonea regia</i> (H.B. & K.) O. F. Cook.
18	Chakotru (ચકોતરું)	<i>Citrus maxima</i> L. var. <i>maxima</i>
19	Chameli (ચમેલી)	<i>Jasminum multiflorum</i> (Burm. F.) Andr.
20	Champo (ચંપો)	<i>Plumeria obtusa</i> L.
21	Chandan (ચંદન)	<i>Santalum album</i> L.
22	Chikkoo (ચીકુ)	<i>Manilkara zapota</i> (L.) P. Royen
23	Christmus Tree (ક્રિસમસટ્રી)	<i>Araucaria celumnaris</i> (G. Forst.) Hook.
24	Conocarpus (કોનોકાર્પસ)	<i>Conocarpus lancifolius</i> Engl.
25	Cycas (સાયકસ)	<i>Cycas revoluta</i> Thunb.
26	Dadam (દાડમ)	<i>Punica granatum</i> L.
27	Desi Badam (દેશી બદામ)	<i>Terminalia catappa</i> L.
28	Desi Bavar (દેશી બાવળ)	<i>Acacia nilotica</i> (L.) Del. subsp. <i>indica</i> (Bth.)
29	Desi Buch (દેશી બુચ)	<i>Millingtonia hortensis</i> L.
30	Falsa (ફાલસા)	<i>Grewia asiatica</i> L.
31	Gadha Champo (ગધાં ચંપો)	<i>Plumeria pudica</i> Jacq.
32	Gadha Limbu (ગધાં લીંબુ)	<i>Citrus</i> sp.
33	Galtoro (ગલતોરો)	<i>Caesalpinia pulcherrima</i> (L.) Sw.
34	Garmalo (ગળમારો)	<i>Cassia fistula</i> L.
35	Guggal (ગૂગળ)	<i>Commiphora wightii</i> (Arn.) Bhandari
36	Gulmahor (ગુલમોહર)	<i>Delonix regia</i> (Bojer ex Hook) Raf.
37	Gunda Mota (ગુંદા મોટા)	<i>Cordia dichotoma</i> Forsk.f.
38	Gundi- Liyar (ગૂંદી નાની- લિયાર)	<i>Cordia gharaf</i> (Forsk.) Ehrenb. & A. Liar
39	Israyeli Bavar (ઇસરાઈલ બાવળ)	<i>Acacia tortilis</i> (Forssk.) Hayne
40	Jamboo (જાંબુ)	<i>Syzygium cumini</i> (L.) Skeels
41	Jamfal (જામફાલ)	<i>Psidium guajava</i> L.
42	Kadamb (કદંબ)	<i>Anthocephalus chinensis</i> (Lam.) A. Rich. ex Walp.
43	Kalo Shirish (કાળો શિરીષ)	<i>Albizia lebbbeck</i> (L.) Benth.
44	Kanchnar (કાંચનાર)	<i>Bauhinia purpurea</i> L.
45	Kanji (કણજી)	<i>Holoptelea integrifolia</i> (Roxb.) Planch.

S. No	Local Name	Botanical Name/ Species
46	Kapok (કપોક)	<i>Bombax malabaricum</i> DC.
47	Karamda (કરમદા)	<i>Carissa opaca</i> Stapf ex Haines
48	Karanj (કરંજ)	<i>Derris indica</i> (Lam.) Bennet
49	Karen (કરેણ)	<i>Nerium indicum</i> Mill.
50	Kashid Ni Jat (કાશીદ ની જાતિ)	<i>Cassia javanica</i> L.
51	Kasid (કાશીદ)	<i>Cassia siamea</i> Lam.
52	Kela (કેળાં)	<i>Musa paradisiaca</i> L.
53	Kerdo (કેરડો)	<i>Capparis decidua</i> (Forsk.) Edgew.
54	Kesudo-Khakhro (કેસૂડો- ખાખરો)	<i>Butea monosperma</i> (Lam.) Taub.
55	Kevdo (કેવડો)	<i>Pandanus odorattissimus</i> L.
56	Kharek (ખારેક)	<i>Phoenix sylvestris</i> (L.) Roxb.
57	Khari Jar- Piludi (ખારી જાળ, પીલુડી)	<i>Salvadora persica</i> L.
58	Kharo Sargvo (ખારો સરગવો)	<i>Moringa conocanensis</i> Nimmo
59	Khati Ambli (ખાટી આમલી)	<i>Tamarindus indica</i> L.
60	Kher (ખેર)	<i>Acacia senegal</i> (L.) Willd.
61	Khijdo-Kandho (ખીજડો, કઢો)	<i>Prosopis cineraria</i> (L.) Druce
62	Kothi (કોઠી)	<i>Limonia acidissima</i> L.
63	Lal Champo (લાલ ચંપો)	<i>Plumeria rubra</i> L.
64	Lignum (લીગનમં)	<i>Guaiacum officinale</i> L.
65	Limbu (લીંબુ)	<i>Citrus limon</i> (L.) Burm.f.
66	Limdo (લીમડો)	<i>Azadirachta indica</i> A. Juss.
67	Liso Bavar (લીસો બાવળ)	<i>Leucaena leucocephala</i> (Lam.) de wit
68	Mahagoni (મહોગીની)	<i>Swietenia mahagoni</i> (L.) Jacq.
69	Mithi Ambli- Goras Ambli (ગોરસ આમલી)	<i>Pithecellobium dulce</i> (Roxb.) Bth.
70	Mithi Jar (મીઠી જાર)	<i>Salvadora oleoides</i> Decne.
71	MithoLimdo (મીઠો લીમડો)	<i>Murrayakoenigii</i> (L.) Spreng
72	MithoSargvo (મીઠો સરગવો)	<i>Moringa oleifera</i> Lam
73	Mosambi Ni Jat (મોસંબી ની જાત)	<i>Citrus sp.</i>
74	Mosambi(મોસંબી)	<i>Citrus sinensis</i> (L.) Osbeck

S. No	Local Name	Botanical Name/ Species
75	Moti Bordi (મોટી બોરડી)	<i>Zizyphus mauritiana</i> Lam.
76	Nagod (નગોડ)	<i>Vitex negundo</i> L.
77	Nani Bordi (નાની બોરડી)	<i>Zizyphus glabrata</i> Heyne ex Roth
78	Nariyel (નાળિયેર)	<i>Cocos nucifera</i> L.
79	Nilgiri (નિલગિરી)	<i>Eucalyptus globulus</i> Labill.
80	Papaya (પપૈયાં)	<i>Carica papaya</i> L.
81	Paras Piparo (પારસ પીપળો)	<i>Thespesia populina</i> L.
82	Parijatak (પારિજાતક)	<i>Nyctanthes arbortristis</i> L.
83	Pili Karen (પીળી કરેણ)	<i>Thevetia peruviana</i> (Pers.) Merrill
84	Pili Limdi, Soneri (પીળી લીમડી)	<i>Tecoma stans</i> (L.) H. B. & K
85	Pili Limdi, Soneri Ni Jat (પીળી લીમડી)	<i>Tecoma fulva</i> (Cav.) G. Don
86	Pilu- Vero (પીલું, વેરો)	<i>Salvadora alii</i> Rajput & Syeda
87	Pipari (પીપરી)	<i>Ficus amplissima</i> Sm.
88	Piparo (પીપળો)	<i>Ficus religiosa</i> L.
89	Ragat Rohido (રગતરોહીડો)	<i>Tecomella undulata</i> (Sm.) Seem
90	Ram Bavar (રામ બાવળ)	<i>Parkinsonia aculeata</i> L.
91	Rayan (રાયણ)	<i>Manilkara hexandra</i> (Roxb.) Dubard.
92	Sandesaro- Safed Gulmahor (સંદેસરો)	<i>Delonix elata</i> (L.) Gamble
93	SaptParni (સપ્તપર્ણી)	<i>Alstonia scholaris</i> (L.) R. Br
94	Setur (સેતૂર)	<i>Morus alba</i> L.
95	Sevan (સેવન)	<i>Gmelina arborea</i> Roxb.
96	Sharu (શરૂ)	<i>Casuarina equisetifolia</i> L.
97	Shivjata (શિવજટા)	<i>Caryota urens</i> L.
98	Shivlingi (શિવલિંગી)	<i>Couroupita guianensis</i> Aubl.
99	Silver Oak (સિલ્વર ઓક)	<i>Grevillea robusta</i> A. Cunn. ex R. Br.
100	Sirish (સિરિષ)	<i>Samanea saman</i> (Jacq) Merr.
101	Sitafal (સીતાફળ)	<i>Anona squamosa</i> L.
102	Tadi (તાડી)	<i>Borassus flabellifer</i> L.
103	Tamarparni (તામ્રપર્ણી)	<i>Peltophorum pterocarpum</i> (DC.) Backer ex. K. Heyne
104	Thuja (થુઝા)	<i>Thuja</i>

S. No	Local Name	Botanical Name/ Species
105	Travellar Palm (ટ્રાવેલરપામ)	<i>Ravenala madagascarensis</i> Sonnert.
106	Umro (ઉમળો)	<i>Ficus racemosa</i> L.
107	Vad (વડ)	<i>Ficus benghalensis</i> L.
108	White Ixora (સફેદ ઇકઝોરા)	<i>Ixora pavetta</i> Andr
109	African Baobab Tree (કલ્પવૃક્ષ, ગોરખ ગાંજો)	<i>Adansonia digitata</i> L.
110	Rohini, Royan, Royani (રોયણ)	<i>Soyimida febrifuga</i> (Roxb.) A. Juss.
111	African Tulip Tree (પિચકારી)	<i>Spathodea campanulata</i> P. Beauv.
112	Sage Leaved Alangium (અંકોલ)	<i>Alangium salviifolium</i> (L.f.) Wangerin
113	Jackfruit (ફણસ)	<i>Artocarpus heterophyllus</i> Lam
114	Breadfruit (ફણસ નાન)	<i>Artocarpus altilis</i> (Parkinson) Fosberg
115	Malabar silk-cotton tree; red silk-cotton; red cotton tree (શિમળો)	<i>Bombax ceiba</i> L.
116	North Indian Rosewood or Shisham (સીસમ)	<i>Dalbergia sissoo</i> Roxb.
117	Gliricidia, કરંજ ની જાત	<i>Gliricidia sepium</i> (Jacq.) Steud.
118	West Indian elm or bay cedar (ખોટો રુદ્રાક્ષ)	<i>Guazuma ulmifolia</i> Lam.
119	Rosy Trumpet Tree (ટેબીબુઆ)	<i>Tabebuia rosea</i> DC.
120	Teak (સાગ)	<i>Tectona grandis</i> L.f.
121	Lai (લઈ)	<i>Tamarix dioica</i> Roxb. ex Roth
122	Umbrella Tree, Terminalia (છાત્રાકાર બદામ)	<i>Terminalia mantaly</i>
123	Tail grape (ફૂક અંપો)	<i>Artabotrys hexapetalus</i> (L.f.) Bhandari
124	Divi Divi, American Sumac (દીવી દીવી)	<i>Caesalpinia coriaria</i> (Jacq.) Willd.
125	Betel-nut, Supari palm	<i>Areca catechu</i> L.
126	Triandra Palm	<i>Areca triandra</i> Roxb. ex Buch. -Ham
127	West India gooseberry, Grosella, Gooseberry tree, Ambadi, આંબળી	<i>Phyllanthus acidus</i> (L.) Skeels

1. BACKGROUND NOTE:

1.1. Kutch District and Bhuj Urban Landscape (Bul)

Kachchh is not only the largest district of the country, but a region as well, that accounts 24 percent land of Gujarat State having 46,652 sq. km area. However, half of this land is uninhabited by human beings due to the inhospitable conditions in the Ranns. This small region called Kachchh has been a confluence, a meeting point for cultures, ecosystems, and geological formations, which has contributed to its rich biodiversity. This is the only arid ecosystem in the world that is accompanied by a marine mangrove ecosystem along its coast. The Ranns have a unique ecosystem of their own, with the only site for flamingo breeding and the Wild Ass in the country. The Bhuj Ridge which inhabits the thorn and scrub forests, straddles the district from the East to the West, and has densest population in the district. Fisheries developed along the coast. While in the North, the nomads came from as far as Baluchistan to graze on the rich grasslands of the Banni, once considered as largest tropical grassland in Asia that hosts wildlife and migratory birds for breeding and roosting, conserves unique germplasm like Banni buffalo, Kankrej cattle, horses, and camels. The Rabaris travelled along the Bhuj ridge with their small ruminants, in the thorn forests in western region that known as last remnant of thorn forest in the country. However, farming communities practised rainfed agriculture that conserved enormous seed varieties suitable in this region with very high variation in rainfall- the region faces drought for three years in every five!

Similarly, Bhuj taluka and Bhuj Urban Landscape (BUL) surrounding dominant by tropical thorn forests, open scrub forests, *Euphorbia-Cactus* scrub forests, mixed scrub forests with open grasslands, riverine forests dominant by *Prosopis juliflora*, and agriculture mixed landscapes. Within the BUL areas there are dominated plantation plots as well as road sides linear plantation rows; and scattered old planted tree species closed to residential plots and areas.

Bhuj is home to several endangered floral and faunal species and diversity of ecosystem in terms of forests, wetlands, hill ranges and so on. Bhuj possesses a distinct identity, not only because of its history and cultures but also because of its great diversity of flora and fauna in and around the city. Process of urbanization has ignored the importance of biodiversity in

the city and the important functions and ecosystem services they provide. This has resulted into malfunction of ecosystem and distinction of important floral and faunal species.

1.2. References on Biodiversity and Ecology of BUL

Several NGOs with the help of citizens group of environmentalists initiated to document the biodiversity prevails in ward no. 8, 2 and 11 wards having wilderness patches, forest area and Biodiversity Park in the city (Year 2026-17 onwards). The objective of this process was to document the biodiversity in terms of flora and fauna; to understand the major threats on these species; to prepare a conservation plan for the same; to make citizen aware on the biodiversity and unique urban ecosystem and its importance in urban living; and last but not least to enable Bhuj Municipality to implement the provision of BDA, 2002 i.e. to prepare a People's Biodiversity Register (PBR) of the city; to constitute a Biodiversity Management Committee (BMC) and to prepare an action plan for conservation (Sahjeevan- March, 2020). Under this work, a total of more than 155 individual trees of more than 50 years from the Bhuj Urban Landscape (BUL). Some tree species recorded with very few numbers in the BUL i.e. *Soymida febrifuga*, *Guaiacum officinale*, *Delonix elata*, *Alangium salvifolium*, *Artocarpus altilis* and *Guazuma ulmifoila* (Sumra, 2019)



Plate 1: Bhuj Urban Landscape (BUL) with dominant adjoining Habitats

2. HIC NETWORK AND FELLOWSHIP FOR TREE MAPPING:

Under the “Homes in the City” (HIC) project, expert organizations are working with proficiency in their respective fields. Under this project running since 2008, vast experience has been gained in terms of governance, women empowerment, housing, decentralized water system, and environment. As shared earlier, to develop an integrated greenbelt plan along with calculation of potential carbon sequestration in climate change contest, a fellowship sanctioned by HIC on tree mapping through mobile based application for Bhuj Urban Landscape (BUL). In all wards of Bhuj, a total of more than 40,000 trees and small trees are mapped with their GPS coordinates, species wise details on height and girth, area wise grid maps along with total numbers of species and individuals, identification of potential plantation areas with individual household level, society level and larger landscape level in respective ward of BUL.



Plate 2: In house and Field based training for Youth and Students

Under this fellowship along with species wise mapping of existing trees and small trees, special emphasis also been taking for collecting and compiling the data on important species with their significance related to medicinal values, ecological important, and associating with wildlife and bird species diversity in BUL. A total of more than 105 species are recorded in different areas of BUL, and all the data are also analyzed for further

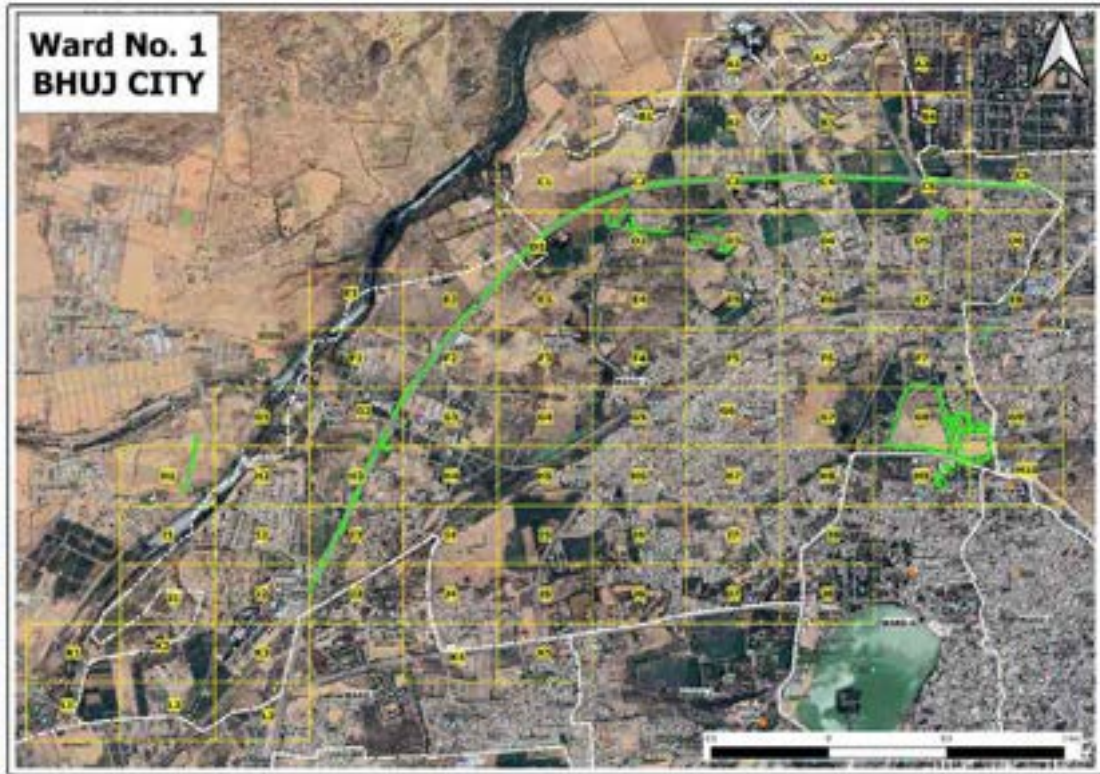
decision-making support system to increase the overall green cover as well as ecologically sustainable model towards zero carbon emission and agreed by Bhuj Citizens.

2.1. Ward-wise recorded Total Trees and Dominant Species in BUL

A total of more than 39700 individual trees and small trees are recorded with mobile-based application and all the data are compiled with required analytical tables for further necessary interpretation to develop a ward as well as city level action plan on increasing the green belts in and around the potential areas. The maximum tree numbers of 7558 individuals are recorded in Ward No. 11, followed by Ward Nos. 2, 8, 3, 6, 7 and so on.

Ward No	No Of Trees
1	2369
2	6710
3	4542
4	2385
5	1367
6	3440
7	3132
8	4974
9	2203
10	1101
11	7558
Grand Total	39781

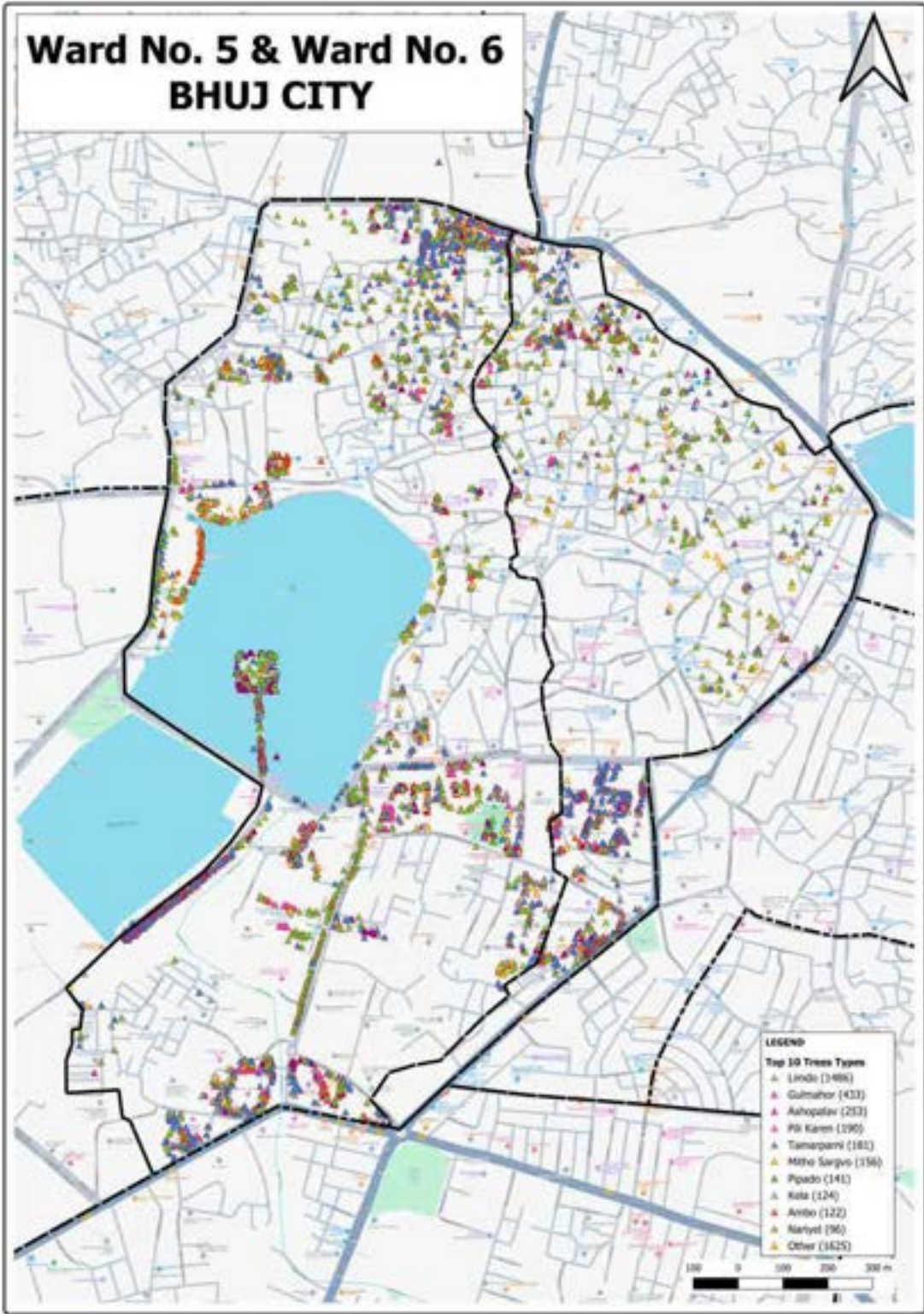




In second phase, a total of 9 Wards is surveyed, and the following table described the top ten species recorded with more than 500 individuals of trees in all surveyed wards of Bhuj Urban Landscape (BUL). The most dominated tree species recorded in BUL is *Azadirachta indica* (Limdo) with more than 9000 individuals' trees, almost 33% of total recorded trees numbers (27240) in BUL.

Interestingly, the second dominated and most planted species recorded is *Conocarpus lancifolius*- one of the listed and most discussed exotic introduced species in our country and larger landscape of Bhuj Urban Landscape is also now covered by this species- say almost 10% (2700 Nos. and excluded Bhujio Hill planted area) of trees recorded from our survey. This needs to be addressed immediately and start the restoration action plan with plantation of more native tree species in those areas.

The third dominated tree species planted in BUL is Gulmahor, for its beautiful colourful flowers and fast growing in nature; almost 1300 individuals are recorded from surveyed wards, and other dominant tree species as mentioned in below table and the following map shows the top ten trees-small trees recorded as dominant in Ward Nos. 5 and 6.



S. No	Botanical Name/ Species	Local Name	Recorded Number	Relative %
1	<i>Azadirachta indica</i> A. Juss.	Limdo	9088	33.37
2	<i>Conocarpus lancifolius</i> Engl.	Conocarpus	2707	9.94
3	<i>Delonix regia</i> (Bojer ex Hook) Raf.	Gulmahor	1294	4.75
4	<i>Mangifera indica</i> L.	Ambo	1168	4.29
5	<i>Peltophorum pterocarpum</i> (DC.) Backer ex. K. Heyne	Tamarparni	1129	4.15
6	<i>Thevetia peruviana</i> (Pers.) Merrill	Pili Karen	1116	4.10
7	<i>Pithecellobium dulce</i> (Roxb.) Bth.	Mithi Ambli- Goras Ambli	1046	3.84
8	<i>Cocos nucifera</i> L.	Nariyel	670	2.46
9	<i>Casuarina equisetifolia</i> L.	Sharu	561	2.06
10	<i>Nerium indicum</i> Mill.	Karen	556	2.04
11	<i>Polyalthia longifolia</i> (Sonner) Thwaites	Ashopalav	542	1.99

2.2. Rare or Ecologically Significance Species need to be Planted

Out of total 100 plus recorded plant species, a total of almost 25 tree species needs to be planted in Bhuj City along with other native plants and they all are mainly preferred by many faunal species for fruits, flowers and shelter. In addition, few of them are also fast growing in nature as well as evergreen in throughout the year.

Local Name	Botanical Name/ Species
Aritha	<i>Sapindus emarginatus</i> Vahl.
Arjun Sadad	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.
Ashitro	<i>Bauhinia racemosa</i> Lam.
Chikkoo	<i>Manilkara zapota</i> (L.) P. Royen
Falsa	<i>Grewia asiatica</i> L.
Garmalo	<i>Cassia fistula</i> L.
Guggal	<i>Commiphora wightii</i> (Arn.) Bhandari
Gunda Mota	<i>Cordia dichotoma</i> Forsk.f.
Gundi- Liyar	<i>Cordia gharaf</i> (Forsk.) Ehrenb. & A. Liar
Jamboo	<i>Syzygium cumini</i> (L.) Skeels
Jamfal	<i>Psidium guajava</i> L.
Kanji	<i>Holoptelea integrifolia</i> (Roxb.) Planch.
Karanj	<i>Derris indica</i> (Lam.) Bennet

Local Name	Botanical Name/ Species
Khari Jar- Piludi	<i>Salvadora persica</i> L.
Kharo Sargvo	<i>Moringa conocanensis</i> Nimmo
Khati Ambli	<i>Tamarindus indica</i> L.
Khijdo-Kandho	<i>Prosopis cineraria</i> (L.) Druce
Kothi	<i>Limonia acidissima</i> L.
Mithi Jar	<i>Salvadora oleoides</i> Decne.
Moti Bordi	<i>Zizyphus mauritiana</i> Lam.
Nagod	<i>Vitex negundo</i> L.
Ragat Rohido	<i>Tecomella undulata</i> (Sm.) Seem
Rayan	<i>Manilkara hexandra</i> (Roxb.) Dubard.
Setur	<i>Morus alba</i> L.
Sevan	<i>Gmelina arborea</i> Roxb.
Umro	<i>Ficus racemosa</i> L.
Vad	<i>Ficus benghalensis</i> L.



Plantation of almost 4500 Trees and Small Trees Saplings of more than 55 Different Native and Ornamental Species in Sahyognagar, Sahyogvan, Ward No. 8 and Managed by Participatory Approach as well as Individual-based funding from Local Residents

LOCAL NAME WISE- INFORMATION OF PLANT SPECIES

1. *Mangifera indica* L.

Botanical Name: *Mangifera indica* L.

Common Name: Ambo, Mango Tree, આંબો, કેરી

Plant Family: ANACARDIACEAE (Cashew or Mango Family)

Plant Form: Tree.

Occurrence (Special Areas): Wadi areas surrounding Hamirsar, Few Bungalows, Temples

Habit: Evergreen, spreading tree.

Leaves: Simple, deep green, oblong-elliptic to lanceolate in shape, with entire margins.

Inflorescence: Long, terminal many-flowered panicles.

Flowers: Small, numerous, yellowish or reddish, actinomorphic, hypogynous.

- **Calyx:** Sepals 5, polysepalous, imbricate, deciduous, ovate, concave, pubescent.
- **Corolla:** Petals 5, free or adnate to the disk, imbricate, oblong.
- **Androecium:** Stamens 5, Fertile stamen 1, staminodes 3 or 4, apically gland-tipped.
- **Gynoecium:** Monocarpellary; unilocular, one pendulous, anatropous ovule, style lateral.
- **Fruit:** Drupes, variable in size & shape. One seeded, glabrous with a break at the apex.

Flowering and Fruiting Time: FLS: Dec.-May

FRS: Feb.-July

Significance:

- Many varieties of Mangoes available in Bhuj;
- Mangoes are used to make *Chatanies, Murraba, Amchuur Powder, Pickles etc.*



Mango trees are pollinated by wind and a variety of insects like wasps, Flies, Stingless bees, Ants, Butterflies, Beetles, and Bees. Many birds nest in mango trees like Weaver birds, Kingfishers, Mynas, Cuckoos, and Hummingbirds.

Leaves paste applied on burning parts of body for fast relief.



2. *Emblica officinalis* Gaertn.

Botanical Name: *Emblica officinalis* Gaerin.

Synonyms: *Phyllanthus emblica* L.

Common Name: Indian Gooseberry, Emblic Myrobalan, Amla, अम्लक

Plant Family: PHYLLANTHACEAE

Plant Form and Habit: Small to medium sized deciduous tree.

Occurrence (Special Areas): Wadi areas surrounding Bhuj, Many bungalows and schools-colleges campus

Leaves: Alternate, stalked leaves, oblong or linear-oblong, light-green.

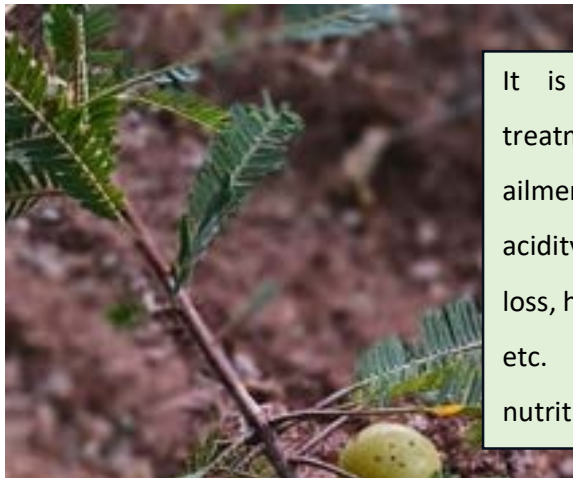
Inflorescence: In axillary fascicles on leaf-bearing branchlets.

Flowers: Greenish-to creamy-yellow, unisexual, actinomorphic, incomplete, trimerous, cyclic.

- **Male flower:** Numerous; pedicel short, slender, staminate.
- **Perianth:** Tepals 6, present in 2 whorls, polytepalous, oblong, obtuse, imbricate.
- **Androecium:** Stamens 3, Monadelphous, monothealous, basifixed, extrose.
- **Female flower:** Few, sessile, pistillate, hypogynous.
- **Perianth:** Same as in male, valvate, oblanceolate.
- **Gynoecium:** Tricarpellary, syncarpous, 2 ovules in each locule on axile placentation.
- **Fruit:** Drupe, pale-yellowish-green, fleshy, smooth, with 6 faint vertical furrows.

Flowering and Fruiting Time: **FLS:** Mar-Apr. **FRS:** June-Sep.

Significance: Dried and fresh fruits of the plant are used as a common constituent; Sweet murraba consumed after meals; Source of Vitamin C; Mainly pickled with salt, oil, and spices.



It is used for the treatment of various ailments like hyperacidity, memory loss, heart diseases etc. Fruits are very nutritive.



3. *Ficus carica* L.

Botanical Name: *Ficus carica* L.

Synonyms: *Ficus caprificus* Risso.

Common Name: Common Edible Fig, Anjeer, अंजीर

Plant Family: MORACEAE

Plant Form: 5-8 m deciduous tree.

Occurrence (Special Areas): Mainly in wadi areas and selected Bungalows

Habit: Soft-wooded, much branched trees without aerial roots bearing pubescent branches.

Leaves: Alternate, ovate, deeply 3-5 lobed, dark green hairy; petioles long, lanceolate, caducous.

Inflorescence: Axillary Receptacle, obovoid, thinly pubescent, greenish-purple.

Flowers: Small, greenish, and non-showy.

- **Perianth:** Tepals 2-3, Polytepalous, Ovate, Brown.
- **Male Flower:** Disperse.
- **Androecium:** Stamens solitary, excreted, oblong, parallel.
- **Female flower:** Sessile.
- **Gynoecium:** Obovoid, Brown, Filiform, Stigma 2-Branched, Style Lateral.
- **Fruit:** Achenes lens like, Oblong, Glabrous except for the hairy margins, Smooth.

Flowering and Fruiting Time: Receptacles; July-Oct.

Significance: Dry Anjeer is a widely popular dry fruit in India and use in many sweet dishes-juices-milkshake etc.



Dry Anjeer benefits our body by promoting healthy digestion, lowering heart disease risks, and helping regulate our sugar levels. Very good for cold and cough relate issues.



4. *Ailanthus excelsa* Roxb.

Botanical Name: *Ailanthus excelsa* Roxb.

Synonyms: *Ailanthus wightii* Tiegh.

Common Name: Arduso, Indian Tree of Heaven, Maha nimb, अरडुंसो

Plant Family: SIMAROUBACEAE

Occurrence (Special Areas): Along road side and in Lalan College Campus

Plant Form and Habit: Deciduous, lofty trees, bark greenish-white or grey, smooth Bark.

Leaves: Leaves long, pinnate, leaflets glandular-toothed, 8-14 pairs, unequal at base.

Inflorescence: Terminal and axillary lax panicle; bract minute, covered with soft hairs.

Flowers: Small, many, yellow, complete, actinomorphic, hypogynous, Bisexual.

- **Calyx:** Sepals 5, Gamosepalous, Imbricate, short calyx 5 lobed.
- **Corolla:** Petals 5, Polypetalous, Glabrous, Ovate, Much larger than the calyx lobes.
- **Androecium:** Stamens 10 in male flower, absent in female.
- **Gynoecium:** Carpels 2-5, rudimentary in male flower, Syncarpous, Marginal placentation.
- **Fruit:** 1-seeded samara, pointed at ends, copper red, twisted at the base.

Flowering and Fruiting Time: FLS: Dec. Mar.

FRS: Feb.-May

Significance: The aromatic and bitter bark and leaves are used medicinally and wood is used for light articles, such as drums, swords-sheaths and floats for fishing nets. The leaves and bitter bark are employed in folk medicine as a tonic and cure for fever, bronchitis and dyspepsia.



5. *Sapindus emarginatus* Vahl.

Botanical Name: *Sapindus emarginatus* Vahl.

Synonyms: *Sapindus laurifolius* Vahl. var. *emarginatus* / *Sapindus trifoliatus* auct.

Common Name: Reetha, Arishta, Notched Leaf Soapnut, Aritha; अरीठल

Plant Family: SAPINDACEAE

Plant Form and Habit: A large tree.

Occurrence (Special Areas): Ashapura Temple and Wadi areas surrounding to Hamirsar

Leaves: Pinnately compound; leaflets 5-10, obovate-oblong, emarginate or obtuse.

Inflorescence and Flowers: Terminal Cymose, unilateral, cymes arranged in racemes or panicles. Greenish-white, zygomorphic, or actinomorphic, bisexual or unisexual, hypogynous.

Male flower:

- **Calyx:** Sepals 5, slightly connate at the base, 4-5 mm long, ovate-oblong, pubescent.
- **Corolla:** Petals 5, free, lanceolate-ovate, clawed, hispid. Disc 5-lobed, concave hirsute.
- **Androecium:** Stamens 8, inserted within disc, filaments unequal, free.
- **Gynoecium:** Pistillode small.

Bisexual flower:

- **Calyx:** sepals 5, 2-seriate; obovate, ciliate.
- **Corolla:** petals 5, white, obovate, equal, base attenuate, basal scales 2.
- **Disc:** annular, 5-lobed, strigose.
- **Androecium:** Stamens 8.
- **Gynoecium** Ovary 3-locular, style 3-lobed, with 1 or 2 undeveloped cocci, obovoid,

Fruit: Drupe sparsely hairy, 3-druplets, connate half their length. **Seeds:** without aril.

Flowering and Fruiting Time: Dec to Feb.

Significance: Dried fruits use for hair cleaning and against hair falling.



6. *Terminalia arjuna* (Roxb. ex DC.) Wight & Arn.

Botanical Name: *Terminalia arjuna* (Roxb. ex DC.) Wight & Arn.

Synonyms: *Pentaptera arjuna* Roxb. Hort. Beng.

Common Name: Arjunsadad, White Murdah, Arjun Tree, Panisadad, अर्जुन रीस

Plant Family: COMBRETACEAE

Occurrence (Special Areas): Selected temples in Bhuj, Valdas Nagar, Changleshwar Temple

Habit and Plant Form: 15-60 m, large tree to small tree.

Leaves: Simple, Alternate, Elliptic-Oblong, Thick, 1 or 2 prominent glands below the leaves.

Inflorescence: Long, Axillary spikes.

Flowers: White Or Creamy-Yellow, Sessile, Incomplete, Actinomorphic, Hermaphrodite.

- **Calyx:** Sepals 5, gamosepalous, cup-shaped, Cream-colored, has five triangular lobes.
- **Corolla:** Absent.
- **Androecium:** Stamens 10, arranged in two rows exserted, anther bi-celled.
- **Gynoecium:** Carpels 5; Ovoid, Syncarpous, Unilocular, Inferior, with 2-3 pendulous ovule.
- **Fruit:** Drupe, Oblong, 4 angled, 5-winged, fibrous-woody.
- **Seed:** Solitary, Linear, Glabrous.

Flowering and Fruiting Time: **FLS:** Mar.-Apr. **FRS:** May-Nov.

Significance:

Timber is valuable.

Every part of the tree has useful medicinal properties. Mainly bark use to cure heart relate problem.





Terminalia arjuna (Roxb. ex DC.) Wight & Arn.



Terminalia arjuna (Roxb. ex DC.) Wight & Arn.

7. *Bauhinia racemosa* Lam.

Botanical Name: *Bauhinia racemosa* Lam. **Synonyms:** *Phanera vahlii* (Wight & Arn.) Benth.

Common Name: Bidi Leaf Tree, Asitro, જીંજ, અશીત્રો જંગલી

Plant Family: FABACEAE. Sub Family: CAESALPINIACEAE

Occurrence (Special Areas): Lalan College and Wildereness - Planted plots in Sahyog Nagar

Habit and Plant Form: A small crooked tree with drooping branches, growing up to 3-5 m.

Leaves: Alternate, Simple, Bilobed, Thin-Coriaceous, Green & Glabrous Above, Caducous.

Inflorescence: Long, Numerous, Terminal and Leafy-Opposed, Pendulous racemes.

Flowers: Creamy-yellow, Complete, Zygomorphic, Hermaphrodite, Perigynous, Pentamerous.

- **Calyx:** Sepals 5, Gamosepalous, Campanulate, deeply lobed, Apex toothed. **Corolla:** Petals 5, Polypetalous, Imbricate, sub equal creamy white, narrowly oblanceolate.
- **Androecium:** Stamens 10 and all fertile, densely hairy at the base, base pilose. **Gynoecium:** Monocarpellary ovary, stigma sessile, ovules numerous, marginal placentation.
- **Fruit:** Pods stalked, woody, slightly curved, apex obtuse or horned. **Seeds:** 10-20, brown.

Flowering and Fruiting Time: **FLS:** Jan. – June **FRS:** Throughout the year.

Significance: Used in diarrhoea, fever, skin diseases, cough, malaria etc. Leaves paste applies on skin relate problem and ulcers.



8. *Polyalthia longifolia* (Sonn.) Benth. & Hook.f. ex Thwaites

Botanical Name: *Polyalthia longifolia* (Sonn.) Benth. & Hook.f. ex Thwaites

Synonyms: *Monoon longifolium* (Sonn.) B. Xue & R.M.K. Saunders, *Uvaria longifolia* Sonn.

Common Name: Telegraph Pole Tree, Ashoka, Asopalav tree, आसोपालव

Plant Family: ANNONACEAE

Occurrence (Special Areas): Common in many Temples and Bungalows

Habit: Tall tree gives it a narrow columnar shape tree. Evergreen handsome tree.

Leaves: Long, Alternate, Exstipulate, Simple, Lanceolate, Glabrous, Narrow wavy edges.

Inflorescence: Axillary, a shortly peduncled umbel.

Flowers: Yellowish-green, Complete, Actinomorphic, Hermaphrodite, Trimerous, Hypogynous.

- **Calyx:** 3 Sepals, Gamosepalous, Valvate, Triangular, Pubescent.
- **Corolla:** 6 Petals, Polypetalous, Valvate, Flat Subequal.
- **Androecium:** Indefinite stamens, spirally arranged on an elongated thalamus, Dithecous.
- **Gynoecium:** Multicarpellary, Apocarpous, Unilocular, Basal placentation.
- **Fruit:** Etaerio of berries, pale-yellow, numerous, stalked, glabrous.
- **Seeds:** Shining, Smooth, Pale-Brown, Center grooved.

Flowering and Fruiting Time: **FLS:** Dec-June. **FRS:** Apr-Aug.

Significance: The leaves are used for many Hindus festivals as traditional rituals and ornamental decoration. The tree is a focal point in gardens throughout India.



The tree can be pruned into various shapes and maintained in required sizes. Its wood is mostly used for manufacturing small articles such as pencils, boxes, matchsticks, etc.

9. *Acacia auriculiformis* A. Cunn. ex Benth.

Botanical Name: *Acacia auriculiformis* A. Cunn. ex Benth.

Synonyms: *Racosperma auriculiforme* (A. Cunn. ex Benth.) Pedley, *Acacia moniliformis* Griseb.

Common Name: Australian Bavar, Ear-leaf Acacia, ऑस्ट्रेलियन बवार्

Plant Family: FABACEAE. Sub Family: MIMOSACEAE

Occurrence (Special Areas): Road side plantation

Habit and Plant Form: An evergreen, Unarmed tree.

Leaves: Bipinnate, Alternate, reduced to phyllodes (flattened leaf stalks)

Inflorescence: Yellow-orange spikes at leaf axils or in clusters of spikes at stem tips.

Flowers: Bright yellow, fragrant, Complete, Actinomorphic, Hermaphrodite, Pentamerous.

- **Calyx:** Campanulate, dissected for 1/4–1/3, glabrous.
- **Corolla:** Yellow, Tubular, Glabrous.
- **Androecium:** Androecium consists of many stamens, exerted.
- **Gynoecium:** The ovary is densely puberulent.
- **Fruit:** Pods very narrowly elliptic to elliptic, flat, long, woody.
- **Seed:** dark brown to black, pleurogram dark, areole open, funicle encircling seed.

Flowering and Fruiting Time: December-August.

Significance: Used for the cultivation of the lac insect in India. This plant is native to southeast Asia, Indonesia, Papua New Guinea and Australia.



This plant is raised as an ornamental plant, as a shade tree and it is also raised on plantations for fuelwood throughout southeast Asia, Oceania and in Sudan. Its wood is good for making paper, furniture and tools. It contains tannin useful in animal hide tanning.

10. *Melia azedarach* L.

Botanical Name: *Melia azedarach* L.;

Common Name: Bakan Limdo, Persian Lilac, Bastard Cedar, Bead tree, ଓଡ଼ିଆ ଲିମ୍ବୁ

Plant Family: MELIACEAE

Occurrence (Special Areas): Planted in many Private properties and Gardens

Habit and Plant Form: 12-20 m, Deciduous Tree.

Leaves: Alternate, exstipulate, bi-imparipinnate, pulvinous base, leaflets 3-13, glabrous.

Inflorescence: Purplish, Fragrant, Axillary panicle cyme.

Flowers: Pentamerous, Bracteate, Bracteolate, Complete, Actinomorphic, Hermaphrodite.

- **Calyx:** Sepals 5, Polysepalous, Base Connate, Valvate, Hairy, Ovate-Oblong, Acut.
- **Corolla:** Petals 5, Polypetalous, Imbricate Or Quincuncial, Purple, Obovate, Oblong.
- **Androecium:** Stamens 10, Monodelphous, Apiculate. Basifixed, Introse,
- **Gynoecium:** 5-8 Carpellary, Syncarpous, 1-2 Ovules in Each Locule, Axile Placentation.
- **Fruit:** Drupe, Ellipsoid-Oblong, Yellow, 1-Seeded, Subfleshy, Endocarp Woody, 1-Seeded.

Flowering and Fruiting Time: January-September

Significance: This tree and most of the parts are poisonous.



11. *Kigella pinnata* (Jacq.) DC.

Botanical Name: *Kigelia africana* (Lam.) Benth.; **Synonyms:** *Crescentia pinnata*

Common Name: Balam Khira, Topgolo, Common Sauceage Tree, ತೊಪ್ಪ ಗಿಲ್ಲೆ

Plant Family: BIGNONIACEAE

Occurrence (Special Areas): Plantation along road side, Lalan college and gardens.

Habit and Plant Form: Evergreen, much branched, glabrous, tree.

Leaves: long, unipinnately compound; leaflets 6-9, elliptic-oblong, glabrous, sub-sessile.

Inflorescence: Terminal, paniced, lax, pendulous racemes up to 2 m long.

Flowers: deep-reddish-purple, pedicellate,

- **Calyx:** Sepals 5, gamopetalous, bilabiate, valvate, cupular, glabrous, thick.
- **Corolla:** Petals 5, imbricate, gamopetalous, dark wine-red within, bell-shaped.
- **Androecium:** Stamens 4, didynamous, epipetalous, posterior staminode, disc present.
- **Gynoecium:** Carpels 2, syncarpous, ovary superior, axile placentation, many ovuled.
- **Fruit:** Capsule, pale brown, oblong-cylindric, shortly beaked, indehiscent.
- **Seeds:** Obovoid
- **Flowering and Fruiting Time:** FLS: Feb. – Apr. FRS: Mar. – June

Significance:

- Treatments for skin afflictions, to treatment for intestinal worms.
- Mainly green leaves as paste applied on wound and other skin problems.



12. *Bambusa stricata* Lodd. &Lindl.

Botanical Name: *Bambusa stricata* Lodd. &Lindl.; **Synonyms:** *Bambusa vulgaris* var. *striata*

Common Name: Bamboo, Golden Bamboo, Striped Bamboo, अंरु

Plant Family: POACEAE

Plant Form: Tree

Occurrence (Special Areas): Temples and Gardens- Sharad Bag

Habit: 15-21 m high, grows in dense clumps, Culm sheath with brown hairs, auricles absent.

Leaves: Narrowly lance shaped, 10-30cm long, surfaces hairless, ligule unfringed membrane.

Inflorescence: Panicle of 1-many pseudo spikelets in globose clusters, sessile on nodes.

Spikelets: laterally flattened, with 1–2 glumes, 4–12 florets, and a terminal vestigial floret

- **Glumes:** Ovate, acute.
- **Lemma:** Ovate, 11–15-veined, hairy.
- **Palea:** As long as lemma, 2-keeled, hairy.
- **Florets:** Bisexual, 6 exerted stamens, 3 unequal lodicules, ovary narrowly oblong, style long, thin, hairy, terminating in 2–3 stigmas
- **Fruit:** Simple, Indehiscent Dry Fruit, also known as a caryopsis or grain.

Flowering and Fruiting Time: Flowers once in 20 years After flowering and fruiting plant die.

Significance: Mainly planted for ornamental purpose



13. *Citrus medica* wight & Arn

Botanical Name: *Citrus medica* wight & Arn.

Synonyms: *Citrus alata* (Tanaka) Tanaka; *Citrus aurantium* Subvar. *amilbed* Engl.

Common Name: Bijoru, ବିଞ୍ଜରୁ

Plant Family: RUTACEAE

Occurrence (Special Areas): Planted mainly in Bungalows and Gardens

Habit and Plant Form: A small tree or shrub that reaches a height of 3-6 m.

Leaves: Alternate, exstipulate, palmately compound, unifoliate, leaflets oblong, gland dotted.

Inflorescence: Axillary, solitary or 2-3 clustered umbellate cymes.

Flowers: Fragrant, white, pedicellate, complete, actinomorphic, hermaphrodite, pentamerous.

- **Calyx:** Sepals 5, gamosepalous, valvate.
- **Corolla:** Petals 5, polypetalous, imbricate, white, coriaceous, gland dotted, linear-oblong.
- **Androecium:** stamens indefinite, polyadelphous, introse, dorsifixed, oblong.
- **Gynoecium:** Multicarpellary, syncarpous ovary, axile placentation; style short, disc large.
- **Fruit:** A hesperidium, leathery, fleshy and highly aromatic, replate with acidic juice.
- **Seeds:** Many, smooth, ellipsoid, white, glabrous, pendulous.

Flowering and Fruiting Time: FLS & FRS: Throughout the year.

Significance: The fruits of *C. medica* are used in traditional medicines against kidney stones, many stomach problems- gas relate, and viral infections.



14. *Aegle marmelos* (L.) Correa

Botanical Name: *Aegle marmelos* L. Corr.;

Synonyms: *Belou marmelos* (L.) Lyons

Common Name: Billipatra, Bael, बिलीपत्र

Plant Family: RUTACEAE

Occurrence (Special Areas): Mainly planted in Shiva Temples and selected Gardens

Plant Form and Habit: Thorny, deciduous, armed tree.

Leaves: Alternate-3-foliolate, sometimes 5-foliolate, leaflets sub sessile, ovate-elliptic.

Inflorescence: axillary and terminal, racemose or corymbose, few-flowered.

Flowers: Greenish white, fragrant, complete, actinomorphic, pentamerous, bisexual, hypogynous.

- **Calyx:** Sepals 4-5, gamosepalous, deciduous, flat, pubescent, valvate, triangular.
- **Corolla:** Petals 4-5, white, polypetalous, imbricate, spreading, oblong, coriaceous, fleshy.
- **Androecium:** stamens numerous, polyadelphous, 2-celled, oblong, apiculate, elongate.
- **Gynoecium:** Multicarpellary, syncarpous ovary, 10-celled, glabrous, disc obscure (elevated)
- **Fruit:** Berry, globose with rough rind; pulp sweet, thick, orange colored, many – seeded.

Flowering and Fruiting Time: FLS: Jan.-May

FRS: Feb.-July

Significance: Use as Antidiabetic, anticancerous, antifertility, antimicrobial, immunogenic, and insecticidal activities.



The tree is considered to be sacred by Hindus and Buddhists. The trifoliate shape of Bael leaf is symbolic representation of three eyes of Lord Shiva.

The fruit juice is energetic and use against sun stroke in summer season.



Aegle marmalos L. Corr

15. *Mimusops elengi* L.

Botanical Name: *Mimusops elengi* L.;

Common Name: Borsalli, Bakul, Spanish Cherry, બોરસલ્લી

Plant Family: SAPOTACEAE

Occurrence (Special Areas): Planted Road side and on divider, many Temples and Societies

Habit and Plant Form: Tree with a compact leaf head.

Leaves: alternate, elliptic, apex shortly acuminate, glabrous.

Inflorescence: axillary solitary.

Flowers: white, actinomorphic, hermaphrodite, hypogynous, fragrant.

- **Calyx:** Sepals 8, in 2 whorls of 4 each, alternating with outer, imbricate, glabrous, acute.
- **Corolla:** Cream, petals 24 in 2 series, gamopetalous, inner series 8-lobed, outer 16-lobed.
- **Androecium:** Stamens 18 in 2 whorls, epipetalous, bilocular, margins with white hairs.
- **Gynoecium:** Oblong style longer than corolla, stigma minutely imbricate.
- **Fruit:** Berry, smooth, ovoid, ellipsoid, 1-2 seeded, greenish, yellow when rip, fleshy.

Flowering and Fruiting Time: FLS: June-Oct FRS: Oct-Mar

Significance: Planted in the gardens and road-side everywhere. The fragrant flowers are used for making traditional ornaments. A delightful perfume is distilled from the flowers. Plant is good fod many teeth relate problem. Many birds feed on fruits.



16. *Callistemon viminalis* (Soland. Ex Guertn) G. Don

Botanical Name: *Callistemon viminalis* (Sol. ex Gaertn.) G. Don

Synonyms: *Melaleuca viminalis*, *C. lanceolatus* D.C.

Common Name: Bottle Brush, ଧୱଳିଆ ଧୱଳିଆ

Plant Family: MYRTACEAE

Occurrence (Special Areas): Planted in Gardens and selected Bungalows

Habit and Plant Form: A large tree or shrub with crimson-yellow to red flowers.

Leaves: Simple, alternate, entire, acute, gland dotted, leathery, with inframarginal veins.

Inflorescence: Pendant spike, 4 to 8 inches long, individual flowers.

Flowers: Yellow to bright red, bracts caduceous, shortly stalked, complete, hermaphrodite.

- **Calyx:** Sepals 5, gamosepalous, imbricate, persistent, small and green.
- **Corolla:** Petals 5, polypetalous, obovate, quincuncial, small and coloured.
- **Androecium:** Stamens bright red many, polyandrous, filaments long, ditheous.
- **Gynoecium:** Tricarpellary, syncarpous, many ovules in each locule, axile placentation.
- **Fruit:** A capsule containing hundreds of tiny seeds.

Flowering and Fruiting Time:

Significance: Mainly use for beautiful Red Pink flowers- ornamental purposes in Gardens and bungalows.



17. *Roystonea regia* (H.B. & K.) O. F. Cook.

Botanical Name: *Roystonea regia* (Kunth) O. F. Cook; **Synonyms:** *Oreodoxa regia* Kunth.

Common Name: Cuban Royal Palm, Bottle palm, Royal palm, ରୌଡ଼ଳ ଧଳା

Plant Family: ARECACEAE (Palm Family)

Occurrence (Special Areas): Lalan college, selected Temples- Ashapura

Habit and Plant Form: Palm (Columnar) The trunk of the Royal Palm is swollen at the base

Leaves: In terminal crown, pinnate leaves, sheaths enveloping the trunk apex.

Inflorescence: Androgynous, branched, shortly peduncled spadix; spathe 2, deciduous.

Male Flower

- **Perianth:** Outer tepals orbicular, minute.
- **Androecium:** Stamens shorter than inner tepals.

Female Flower:

- **Perianth:** inner tepals usually connate below.
- **Gynoecium:** stigma 3, sessile.
- **Fruit:** Subglobose, dark reddish-purple. **Seeds:** Flattened.

Flowering and Fruiting Time: Mar-June.

Significance: Planted in avenues and gardens as an ornamental plant;



18. *Citrus maxima* L. var. *maxima*

Botanical Name: *Citrus maxima* L. var. *maxima*

Synonyms: *Aurantium decumanum* (L.) Miller; *Citrus aurantium* f. *grandis* (L.) Hiroe;

Common Name: Chakotra, Pamelo, Pomelo, Pommelo, Jabong, Shaddock, Chinese fruit, etc

Plant Family: RUTACEAE, ચકોતરા

Occurrence (Special Areas): Planted in selected bungalows and wadi areas

Plant Form and Habit: A tree up to 5 to 15m in height with low, irregular branches.

Leaves: Large, evergreen, alternate, oval, with a blunt point, petiole is broadly winged.

Inflorescence: Axile, Cymose

Flowers: Fragrant, pedicellate, and borne singly or in clusters

- **Calyx:** Hairy and persistent with 4–5 united green colored sepals
- **Petals:** 4–5 yellowish-white, 1.5–3.5 cm long, and dotted with yellow-green glands.
Stamens: 20–25, white, and prominent in bundles of 4–5 five sepals
- **Gynoecium:** 2–5 syncarpous, with many ovules, axile placentation, superior ovary.
- **Fruit:** oblate-spheroid or sub pyriform with large, thick, wrinkled seeds

Flowering and Fruiting Time: November–December

Significance: The ripe fruit is eaten raw and made into preserves and fruit drinks. The white inner part of the peel can be candied. The aromatic flower is used to make perfumes.



19. *Jasminum multiflorum* (Burm. F.) Andr.

Botanical Name: *Jasminum multiflorum* (Burm. f.) Andr

Synonyms: *Jasminum pubescens* Willd., *Mogorium multiflorum*, *Nyctanthes multiflora* Burm.

Common Name: Chameli, Star Jasmine, Downy Jasmine, Indian Jasmine, चमेली

Plant Family: OLEACEAE (Jasmine family)

Plant Form: Densely silky-pubescent twining shrubs

Occurrence (Special Areas): Planted as ornamental for white flowers

Habit: An evergreen, trained as a shrub, or as a spreading, vine-like shrub.

Leaves: Cauline & ramal, compound, imparipinnate, leaflets opposite, nearly sessile.

Inflorescence: Terminal & axillary paniced subsessile cymes.

Flowers: White Bracteate, hermaphrodite, actinomorphic, sessile, complete.

- **Calyx:** Bell-shaped sometimes cylindrical, gamosepalous, inferior.
- **Corolla:** Gamopetalous, tube slender, 4-10 lobed, to be spreading.
- **Androecium:** Stamens 2, epipetalous, bithecous, filaments short.
- **Gynoecium:** Bicarpellary, syncarpous, bilocular, superior, 2 ovules in each loculus.
- **Fruit:** A berry, black, surrounded by the suberect calyx teeth.

Flowering and Fruiting Time: Throughout the year

Significance: In Indian mythology, Kunda is known for its whiteness. *Jasminum multiflorum* is often cultivated for its fragrant flowers, which are used in making gardens, perfumes, and traditional medicines.



20. *Plumeria alba* L./ *Plumeria obtusa*

Botanical Name: *Plumeria alba* L.; **Synonyms:** *Plumeria nivea*, *Plumeria emarginata*

Common Name: White Frangipani, Catter piller tree, सङ्केद रंपे

Plant Family: APOCYNACEAE (Oleander family)

Occurrence (Special Areas): Planted many areas for flowers as an ornamental plant

Plant Form and Habit: Small shrub or tree with plenty of milky juice.

Leaves: Simple, Large, obovate, glabrous crowded at the ends of branches, alternate.

Inflorescence: In terminal or corymbose, shortly peduncled cymes.

Flowers: Fragrant, white, complete, actinomorphic, hermaphrodite, hypogynous, pentamerous.

- **Calyx:** Sepals 5, cupular; lobes subequal, rounded, obtuse.
- **Corolla:** Petals 5, gamopetalous, cream with yellow centre, funnel shaped, obtuse.
- **Androecium:** stamens 5, attached to the base of tube, epipetalous, included.
- **Gynoecium:** Bicarpellary, syncarpous, unilocular, numerous ovules on marginal placentation.
- **Fruit:** Dry Follicles splits along one side. **Seeds:** flat, winged, coma absent.

Flowering and Fruiting Time: Throughout the year.

Significance: Planted many areas for flowers as an ornamental plant





21. *Santalum album* L.

Botanical Name: *Santalum album* L.

Common Name: Chandan, Sukhad, Shvet-Chandan; चंदन

Plant Family: SANTALACEAE

Occurrence (Special Areas): Selected temples and bungalows, Lalan college

Habit and Plant Form: An evergreen glabrous tree, bark light blackish-brown, rough.

Leaves: Simple, entire, Elliptic-lanceolate, thin, base acute, exstipulate, petiolate.

Inflorescence: In terminal and axillary paniculate.

Flowers: Brownish-purple, incomplete, pentamerous, actinomorphic, hermaphrodite.

- **Perianth:** Tepals 5, gamotepalous, tubular, campanulate, valvate; thin-fleshy, acute.
- **Androecium:** Stamens 5, polyandrous, exserted, ovate, 2-celled, equal.
- **Gynoecium:** Monocarpellary; $\frac{1}{2}$ inferior, unilocular with 2-3 ovules, basal placentation.
- **Fruit:** Achene or drupe, deep purple when ripe, endocarp hard, shining.

Flowering and Fruiting Time: **FLS:** Aug. – Dec.

FRS: Nov. – Dec.

Significance: *S. album* has been the primary source of sandalwood and the derived oil. The central part of the tree, the heartwood, is the only part of the tree that is used for its fragrance. It is yellow-brown in color, hard with an oily texture and due to its durability, is a preferred material for carving. Used few drops of oil as bath during summer for cool feeling.



22. *Manilkara zapota* (L.) P. Royen

Botanical Name: *Manilkara zapota* (L.) P. Royen; **Synonyms:** *Achras zapota* L.

Common Name: The Sapodilla Plum, Chikkoo, Chico Sapote, ચીકુ

Plant Family: SAPOTACEAE

Occurrence (Special Areas): Planted in gardens and selected Bungalows

Habit and Plant Form: A small, evergreen tree, glabrous with a milky juice.

Leaves: Simple, cauline & ramal, alternate Elliptic, entire leathery, ends acute; petiolate.

Inflorescence: Axillary solitary.

Flowers: Dull-white, scentless, Actinomorphic, hermaphrodite, hypogynous, hairy bracteolate.

- **Calyx:** Sepals 6 or 8, in 2 series, ovate, concave, thick, thin-fleshy, obtuse.
- **Corolla:** Petals 16, white in 2 series of 8 each.
- **Androecium:** Stamens 8, outer whorl of stamens reduced to staminodes, minutely toothed.
- **Gynoecium:** Carpels number is double that of stamens, syncarpous, superior.
- **Fruit:** Berry ovoid or ellipsoid, rusty-brown. **Seeds:** 3-5, hard, shining, black, smooth.

Flowering and Fruiting Time: FLS & FRS: April-June

Significance: It is mainly cultivated for its edible fruits.



23. *Araucaria columnaris* (G.Forst.) Hook.

Botanical Name: *Araucaria columnaris*

Common Name: Christmas Tree, the coral reef araucaria, Cook pine (or Cook's pine),

Plant Family: ARAUCARIACEAE, छिसमस ट्री

Plant Form: Coniferous tree

Occurrence (Special Areas): Planted for ornamental tree in many Bungalows and offices

Habit: Narrowly conical tree growing up to 60 m (200 ft) tall in its native habit

Leaves: The young leaves are needle-like, while the adult leaves are triangular and scale-like.

Inflorescence: Cones

Female cones: Egg-shaped, scaly, and upright, located in the upper branches. They are typically 4–5 inches long.

Male cones: Cylindrical, scaly, and drooping, located at the tips of the branchlets. They are typically 2–3 inches long.

Fruit: The seeds, nut is ovate, and the wings are broadly rounded.

Flowering and Fruiting Time: March to August.

Significance: This tree may be grown as a large specimen tree in the landscape. Good ornamental value. Excellent street tree.



24. *Conocarpus lancifolius* Engl.

Botanical Name: *Conocarpus lancifolius* Engl.

Synonyms: *Conocarpus niloticus* Delile ex Steud.

Common Name: Lance leaf Buttonwood, Damas tree

Plant Family: COMBRETACEAE

Occurrence (Special Areas): Recently introduced in many developmental project sites and in many bungalows and temples, offices etc.

Habit and Life Form: An evergreen tree.

Leaves: Simple, lance shaped, narrowing towards the base, smooth and shiny.

Inflorescence: In axillary Globose or slightly elongate heads.

Flowers: yellow-green, in round heads on branched stalks, slightly fragrant.

- **Calyx:** sepals 5, gamosepalous, tubular-campanulate, deciduous, valvate persistent.
- **Corolla:** absent.
- **Androecium:** stamens 10 (5+5) biseriate, exserted; small, cordate, versatile.
- **Gynoecium:** carpels 5, syncarpous; unilocular, stigma simple.
- **Fruit:** Dry, round, greenish heads, cone like, **seeds:** Tiny, scale-like hard.

Flowering and Fruiting Time: Nov. – Jan.

Important Note:

The Gujarat Forest department, in September last year (2023-24), banned the *Conocarpus* tree species in forest and non-forest areas such as nurseries and plantations, citing harm to the environment and human health.

A circular issued on September 26, 2023, by the Principal Chief Conservator of Forests (PCCF) and Head of the Forest Force (HoF) of Gujarat, Sh. S. K. Chaturvedi, officially prohibits the plantation and seeding of the invasive *Conocarpus* in forest areas, nurseries, as well as non-forest areas.

The circular highlights the detrimental impact of the exotic tree's roots on telecommunication cables, drains and freshwater pipelines, posing a risk to infrastructure. Furthermore, it draws attention to the adverse effects of the species' pollen, which can lead to colds, coughs, asthma and allergies among individuals, particularly during winter.

The circular also includes instructions for conducting awareness camps and nature educational programs to effectively inform and educate citizens on the matter.

The following areas of Bhuj city (Ward Nos. 2, 4 and 8) need to be prioritised for necessary decision with local residents and respective authorities:

1. Bhujio Hills, Madhapar Road and surrounding Landscape
2. Sahyognagar, Hill Garden Road Landscape and ISCKON Temple Landscape
3. Airport Ring Road network, Mehrun City and New developemnetal Project Sites
4. Khavda Road, Nagor Road and Suralbhit Road
5. Lalan College and Police Headquarter



25. *Cycas revoluta* Thunb.

Botanical Name: *Cycas revoluta* Thunb.

Common Name: Sago Palm, Sago palm, King sago palm.

Plant Family: CYCADACEAE

Occurrence (Special Areas): Planted in selected offices- Umed Bhuvan

Habit: An evergreen palm-like tree.

Leaves: Two types of leaves are present in cycas Foliage leaves, and triangular scaly leaves.

Inflorescence: Cycas is strictly dioecious. Cone produce

Male Cone: The male plants develop male cones

- male strobilus is a large terminal, conical, compact, solitary.

Female Cone: The female plants produce a loose collection of megasporophylls.

Fruit: Seeds are orange-yellow in color and are large in size

Flowering and Fruiting Time: late spring, Seeds mature from September to October.

Significance: Planted as an ornamental plant species.



26. *Punica granatum* L.

Botanical Name: *Punica granatum* L.

Common Name: Pomegranate, Anar, Dadam, एसह

Plant Family: LYTHRACEAE / PUNICACEAE (Pomegranate Family)

Plant Form and Habit: A large shrub or a small tree.

Occurrence (Special Areas): Planted for fruits at many Societies, offices, Wadis etc.

Leaves: Cauline & ramal, opposite, decussate, simple, lanceolate, glabrous, subsessile, exstipulate.

Inflorescence: Terminal solitary or in cymes.

Flowers: The odorless, bright-red, complete, actinomorphic, hermaphrodite, peri or epigynous-

- **Calyx:** sepals 5-8, gamosepalous, valvate, persistent, tubular, adnate to ovary.
- **Corolla:** petals 5-8, polypetalous, inserted on the rim, crumpled in bud, imbricate.
- **Androecium:** stamens infinite, polyandrous, inserted on the half of the hypanthodium. The stamens are numerous, erect to slightly curved at the apex, and red - the anthers are yellow.
- **Gynoecium:** carpels 8-12, syncarpous; ovary 8-12, ovules numerous, stigma capitate.
- **Fruit:** A balusta, reddish-brown, woody, crowned with persistent calyx lobes.
- **Seeds:** obtusely angular, with pink or red juicy arillata, axils edible.

Flowering and Fruiting Time: FLS & FRS: July-Dec. Fruits sold in market throughout the year.

Significance: Planted in gardens, societies and wadies. Fruits are edible and rich in vitamins.



27. *Terminalia catappa* L.

Botanical Name: *Terminalia catappa* L.

Common Name: Deshi Badam, Indian Almond Tree, ເຂຣ໌ ພຣາມ

Plant Family: COMBRETACEAE (Indian Almond Family)

Occurrence (Special Areas): Planted near bungalows, gardens and temples etc.

Habit and Life Form: A highly ornamental and deciduous tree.

Leaves: Simple, entire, alternate, coriaceous, 2 glands at the base of leaf, sessile.

Inflorescence: Axillary, solitary or fascicled spikes; peduncle.

Flowers: The greenish white female and male flowers are on the same tree; not very showy.

- **Calyx:** Sepals 4-5, tomentose, triangular, puberulous.
- **Androecium:** Stamens 10; filaments short.
- **Gynoecium:** Monocarpellary; ovary inferior, 1-celled, generally angled.
- **Fruit:** Drupe, Reddish-purple, nuts are edible, taste like almonds and are eaten.

Flowering and Fruiting Time: February-May.

Significance: Fruits and Seeds are edible.



28. *Acacia nilotica* subsp. *indica* (Benth.) Brenan/ *Vachellia nilotica* (L.) P. J. H. Hurter & Mabb.

Botanical Name: *Acacia nilotica* (L.) Del. subsp. *indica*

Synonyms: *Acacia arabica* (Lam.) Willd. var. *indica* Benth.

Common Name: Babool Acacia, Indian Gum Arabic, Black Babool Tree, Babul, ଝିଲି ଧାତୁଳ

Plant Family: FABACEAE, SubFamily: MIMOSACEAE

Occurrence (Special Areas): Planted in wildereness places- Sahyog Nagar, Valdas Nagar

Habit/Plant Form: A medium to large tree that can reach a height of 10-12 m, Armed Tree

Leaves: Alternate, bipinnately compound; leaflets 10-25 pairs, elliptic, stipular spines.

Inflorescence: Axillary panicles with fluffy globular heads.

Flowers: Bright yellow, numerous, complete, actinomorphic, hermaphrodite, pentamerous.

- **Calyx:** 5 sepals, gamosepalous, campanulate, odd sepal anterior, valvate, minute.
- **Corolla:** 5 petals, gamopetalous, tubular, about double the size of the calyx, valvate, yellow.
- **Androecium:** stamens infinite (60-70); polyandrous, filaments filiform, basally connate.
- **Gynoecium:** Monocarpellary, superior, unilocular, ovules many, marginal placentation.
- **Fruit:** Pods, glabrous-green, jointed, minutely hairy, stalked, monoliform, apex horned.
- **Seeds:** 8-13, brownish-black, oblong, compressed, smooth, glabrous.

Flowering and Fruiting Time: **FLS:** July – Oct. **FRS:** Aug. – Dec.



Significance:

The tender twig of this plant is used as a toothbrush and available in local evening market in Bhuj. Good source of calcium. Very important tree species for insects, butterflies as well as bird species for food, nests and shelter.

The gum of this tree is known as gum arabic and use for manufacture of medicines, dyes and paints.

Local pastorlaists and farmers use flowers for curing the mouth ulcers.

29. *Millingtonia hortensis* L.f.

Botanical Name: *Millingtonia hortensis* L.f.

Common Name: Indian Cork Tree, Tree Jasmine, Akash neem, Neem chameli, દેશી બુચ

Plant Family: BIGNONIACEAE

Occurrence (Special Areas): Planted along road sides, gardens and bungalows for white flowers and fast-growing tree species.

Habit and Plant Form: Fast growing tree.

Leaves: Opposite, imparipinnately bipinnate, leaflets ovate-lanceolate, serrate, acute.

Inflorescence: Axillary & terminal, widely branched, corymbose panicles at ends of branches.

Flowers: fragrant, complete, zygomorphic, creamy-yellow with long slender white corolla tube.

- **Calyx:** Sepals 5, gamopetalous, bilabiate, valvate, puberulous, equal, obtuse, ovate.
- **Corolla:** Petals 5, white, tubular, throat widened with crateriform glands outside.
- **Androecium:** Stamens 4, exserted, didynamous.
- **Gynoecium:** Ovary 1-celled, ovules many style long, stigma 2-lobed.
- **Fruit:** Capsule, linear, flat, pointed at both ends and contains thin flat seeds.

Flowering and Fruiting Time: Nearly for whole year.

Significance: The tree is considered ornamental and the pleasant fragrance of the flowers renders it ideal as a garden tree. The wood is also used as timber and the bark is used as an inferior substitute for cork.



30. *Grewia asiatica* L.

Botanical Name: *Grewia asiatica* auct. Non L.; **Synonyms:** *Grewia subinequalis* DC.

Common Name: Phalsa, ફાલ્સા

Plant Family: MALVACEAE/TILIACEAE

Occurrence (Special Areas): Mainly planted in bungalows and gardens, Lalan College

Plant Form- Habit: A small tree

Leaves: simple, alternate, ovate, acute, irregularly and coarsely toothed, petiolate, stipulate.

Inflorescence: Axillary cymes, peduncles.

Flowers: yellow; Pedicellate, actinomorphic, hermaphrodite, hypogynous, complete, pentamerous.

- **Calyx:** Sepals 5, polysepalous, valvate, caduceus, acute, pubescent on back.
- **Corolla:** Petals 5, polypetalous, valvate, yellow, oblong or ovate, inferior.
- **Androecium:** Stamens indefinite, inserted on a turbinate, polyandrous.
- **Gynoecium:** Carpels 4-5, ovary syncarpous, axile placentation, stigma short.
- **Fruit:** Drupe, globose, dark – purple to almost black when ripe, sparsely hairy.

Flowering and Fruiting Time: **FLS:** Feb – July. **FRS:** Apr – July.

Significance: It is extensively cultivated for its sweet and sour acidic fruit, which is sold in the market during the summer months under the name phalsa. A Sharbat or squash is prepared from the fruit pulp by mixing it with sugar and used as an astringent, stomachic and cooling agent.



31. *Plumeria pudica* Jacq.

Botanical Name: *Plumeria pudica* Jacq.

Common Name: Gada Champo Gadha Champo, मोटे चंपो

Plant Family: Apocynaceae

Plant Form and Habit: A small tree or shrub mainly planted for beautiful white flowers; and that can reach a height of 3 to 4 meters.

Occurrence (Special Areas): Planted in many temples and bungalows as an ornamental plant species. It is of medium size, its trunk rather thin, branches from the base, into multiple branches that form a dense and slightly flared crown.

Leaves: The leaves are curiously spatulate, long, thick, spoon-shaped, of a shiny dark green. They are toxic like all *Plumeria* leaves.

Flowers: The white flowers have very little scent.

Flowering and Fruiting Time: Throughout in year

Significance: Ornamental tree/shrub species



32. *Citrus* sp.

Botanical Name: *Citrus* sp.

Common Name: Gadha Limbu, ગાદ્યા લિમ્બુ

Plant Family: RUTACEAE

Plant Form and Habit: *Citrus medica* is a slow-growing shrub or small tree that reaches a height of about 8 to 15 ft (2 to 5 m). It has irregular straggling branches and stiff twigs and long spines at the leaf axils.

Occurrence (Special Areas): Planted in selected Bungalows and Gardens; Wadis

Leaves: The evergreen leaves are green and lemon-scented with slightly serrate edges, ovate-lanceolate or ovate elliptic 2.5 to 7.0 inches long. Petioles are usually wingless or with minor wings.

Flowers:

The clustered flowers of the acidic varieties are purplish tinted from outside, but the sweet ones are white-yellowish.

Fruit: The pulp is usually acidic, but also can be sweet, and some varieties are entirely pulpless.

Significance: The juice of the citron has a high content of vitamin C



33. *Caesalpinia pulcherrima* (L.) Sw.

Botanical Name: *Caesalpinia pulcherrima* (L.) Sw. **Synonyms:** *Poinciana pulcherrima* L

Common Name: Galtoro, Peacock Flower, Pride of Barbados, Dwarf poinciana, ગલતોરો

Plant Family: LAGUMINOCESE SubFamily: CAESALPINIACEAE (Gulmohar family)

Occurrence (Special Areas): Planted in Gardens and Bungalows for an ornamental plant

Habit: This beautiful, glabrous, unarmed or with a few weak prickles, shrub or small tree.

Leaves: Alternate, bipinnately compound, stipulate petiolate; leaflets 8-12 pairs, sessile, oblong.

Inflorescence: Terminal long racemes.

Flowers: In clusters red-orange or yellow, showy, complete, bisexual, pentamerous.

- **Calyx:** Sepals 5, polysepalous, odd sepal anterior, imbricate aestivation, inferior.
- **Corolla:** Petals 5, polypetalous, reddish-yellow, ascending imbricate aestivation, inferior.
- **Androecium:** Stamens 10, filaments very long, bright red.
- **Gynoecium:** Monocarpellary, superior, unilocular, marginal placentation, style short.
- **Fruit:** Pods, broadly linear, flat, glabrescent. **Seed:** 8-10, obovate-oblong, glabrous.

Flowering and Fruiting Time: FLS & FRS: Throughout the year.

Significance: It is a striking ornamental plant, widely grown in domestic and public gardens in warm climates with mild winters, it can be also used to attract hummingbirds.



34. *Cassia fistula* L.

Botanical Name: *Cassia fistula* L.

Synonyms: *Cassia rhombifolia* Roxb.

Common Name: Sonhali, Amartas, Sundaraj, Garmalo, Raajavriksha, འུར་མེལ་ལོ

Plant Family: LAGUMINOCESE Sub Family: CAESALPINIACEAE (Gulmohar family)

Occurrence (Special Areas):

Plant Form and Habit: Medium-sized tree with spreading crown growing up to 40 feet tall.

Leaves: Alternate, unipinnateparipinnately compound, stipules small, leaflets 4-8pairs, large.

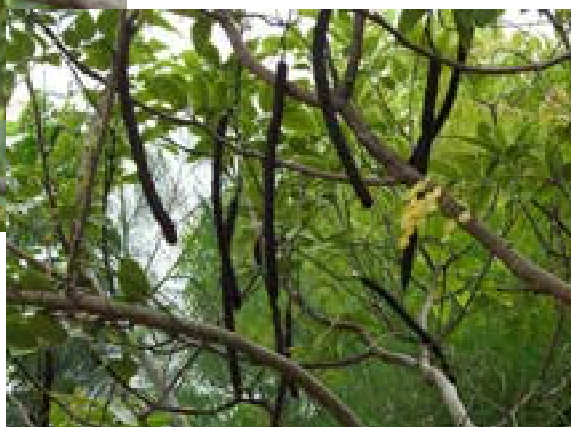
Inflorescence: Treminal drooping racemes, up to 2" long, with bright, yellow, fragrant flowers.

Flowers: Yellow, pedicellate, bracteate, complete, zygomorphic, pentamerous, hypogynous.

- **Calyx:** Sepals 5, polysepalous, odd sepal anterior, imbricate aestivation, inferior.
- **Corolla:** Petals 5, Yellow, subequal, obovate, polypetalous, imbricate aestivation.
- **Androecium:** Stamens 10, in two whorls, 3 posterior ones are staminodes, polyandrous.
- **Gynoecium:** Monocarpellary, superior, marginal placentation, stigma punctiform.
- **Fruit:** Long, hard dark-brown cylindrical pods, indehiscent, sweetish pulp.

Flowering and Fruiting Time: **FLS:** Mar-June. **FRS:** Throughout the year.

Significance: Flowers are attractive to bees and butterflies. The sweet blackish pulp of the seedpod is used as a mild laxative, good source of haemoglobin and cure many stomoach problem in children.



35. *Commiphora wightii* (Arn.) Bhandari

Botanical Name: *Commiphora wightii* (Arn.) Bhandari

Synonyms: *Balsamea mukul*, *Balsamodendron mukul*, *Commiphora mukul*

Common Name: Guggal; ગુગલ

Plant Family: BURSERACEAE (Torchwood/ SALAI family)

Occurrence (Special Areas): Mainly planted in wilderness area- Sahyog Van, Lalan College; This plant species identified as a Critically Endangered (CR) by IUCN Red List.

Habit: It grows as a shrub or small tree, maximum height of 4 m, with thin papery bark.

Leaves: Alternate, simple or trifoliate, subsessile, the leaflets ovate, irregularly toothed.

Inflorescence: fascicled cymes at the end of branches.

Flowers: Brownish red, polygamous, small, complete, actinomorphic, hypogynous, pedicel short.

- **Calyx:** sepals 4, gamosepalous, campanulate, glandular hairy, persistent, lobes triangular.
- **Corolla:** petals 5, polypetalous, inserted on concave disk, brownish-red, erect, apex reflexed.
- **Androecium:** stamens 8-10, alternately long & short, half the length of petals, free, 2-celled.
- **Gynoecium:** 3 carpels, syncarpous, ovoid, sessile, 3 locular, 2 pendulous ovules, style short.
- **Fruit:** Drupes, ovoid, shortly beaked, deep red, acute, crustaceous or woody.

Flowering and Fruiting Time: Flowering: November-July. Fruit: March-May

Significance: Guggal is a flowering plant which produces a fragrant resin called guggal. The extract of gum guggul, called gugulipid, guggulipid, or gugalipid, has been used in Unani and Ayurvedic medicine.





Flower, Fruit and Life Form of Guggal Plant

36. *Delonix regia* (Hook.) Raf.

Botanical Name: *Delonix regia* (Hook.) Raf.

Synonyms: *Poinciana regia* Boj. ex Hook.

Common Name: Red Gulmohar, Royal poinciana, Flame tree, Peacock Flower, ગુલમોહર

Plant Family: LAGUMINOCESE Sub Family: CAESALPINIACEAE (Gulmohar family)

Occurrence (Special Areas): Commonly planted in Bhuj for its beautiful red-pink flowers and fast-growing nature.

Habit/Plant Form: Medium-sized, gets 30-40 ft tall, deciduous tree with a spreading crown.

Leaves: Cauline & ramal, bipinnately compound; pinnae 8-20 pairs; leaflets 12-30 pairs.

Inflorescence: Long, terminal, simple or branched racemes.

Flowers: Flowers are deep-red to orange-red and showy

- **Calyx:** 5 sepals, green on the outside and reddish with a yellow border on the inside
- **Corolla:** 5 petals, Lower 4 petals spoon-shaped and rounded, Upper 1 petal larger.
- **Androecium:** stamens 10, polyandrous, dorsifixed.
- **Gynoecium:** Monocarpellary; ovary flat and Sessile.
- **Fruit:** Fruit is a long pod, Linear, woody, dark-brown or reddish-brown, flat, beaked, thin, dehiscent.

Flowering and Fruiting Time: FLS: Mar-July. FRS: Apr-Aug.

Significance: Ornamental fast growing tree species and very common in Bhuj city



37. *Cordia dichotoma* Frost.

Botanical Name: *Cordia dichotoma* G. Forst

Synonyms: *Cordia obliqua* Willd.; *Cordia latifolia* Roxb.; *Cordia wallichii* G. Don; *Cordia indica*.

Common Name: Gunda Mota, Vad gundo, ມໍ່ລ ຈຸ່ເລ

Plant Family: BORAGINACEAE

Occurrence (Special Areas): Planted in many bungalows and gardens

Habit and Plant Form: Small to medium-size tree with a short-crooked trunk.

Leaves: simple, entire, slightly toothed, alternate, broadly ovate, round, basal nerves 3.

Inflorescence: Short stalked, terminal & axillary pedunculate cymose panicles.

Flowers: white to pinkish, complete, actinomorphic, polygamous (hermaphrodite and male) buds. pyriform; pedicel short, hypogynous

- **Calyx:** Sepals 5, gamosepalous, imbricate, unequal, triangular, tubular, acute, erect.
- **Corolla:** Petals 5, gamopetalous, tubular, tube as long as calyx, imbricate.
- **Androecium:** Stamens 5, epipetalous, inserted, base hairy laterally dehiscent.
- **Gynoecium:** Bicarpellary, syncarpous, style terminal, stigma capitate.
- **Fruit:** Drupes, rounded, mucilagenous, bright-yellow, edible with sticky flesh mass.

Flowering and Fruiting Time: **FLS:** Feb-June **FRS:** Mar-June.

Significance: Fruits are edible and often used as pickled and fruits are also like by many bird species, small mammals, insects etc. Good for urinary treatment.





Cordia dichotoma G. Forst

38. *Cordia gharaf* (Forssk) Ehr. & Asch.

Botanical Name: *Cordia gharaf* (Forssk) Ehr. & Asch.

Synonyms: *Cordia rothii* Roem. & Schult., *Cordia sinensis* Lam.

Common Name: Gundi-Liyar, Long-Leaf Cordia, ದಿಲಿರ್

Plant Family: BORAGINACEAE

Occurrence (Special Areas): Commonly planted along Wadis and Lalan College campus

Habit: Long-Leaf Cordia is a small tree or shrub, growing up to 10 m tall.

Leaves: Elliptic-oblong to inverted-lance shaped, with slightly wavy margins, leathery.

Inflorescence: Terminal and axillary cymes.

Flowers: white, small, usually tetrandrous, pedicels short.

- **Calyx:** Sepal 5, tubular-bell-shaped, velvety, shallowly lobed; lobes obtuse.
- **Corolla:** Petals 5, creamy white color, oblong, obtuse, reflexed.
- **Androecium:** Stamens 5, glabrous.
- **Gynoecium:** Ovary 4-celled, ovule 1 in each cell, style terminal, ovoid.
- **Fruit:** Drupe, reddish-yellow or orange, mucilagenous, acute, pulp edible, 1-seeded.
- **Flowering and Fruiting Time: FLS & FRS:** Apr-Jan.

Significance: Ripe fruits use for joint pain and like by many bird species.





Cordia gharaf (Forssk) Ehr. & Asch.

39. *Acacia tortilis* (Forssk.) Hayne

Botanical Name: *Acacia tortilis* (Forssk.) Hayne.

Synonyms: *Vachellia tortilis*

Common Name: Israyeli Bavar, የኃረደሽሮሽ ልረረሽ

Plant Family: FABACEAE Subfamily: MIMOSACEAE

Occurrence (Special Areas): Wildereness area and planted by Forest Department

Habit: A medium-to-large canopied tree call the umbrella thorn acacia.

Leaves: Rachis short, pinnae 2 - 10 pairs, leaflets 6 - 19 pairs, small glabrous or pubescent.

Inflorescence: Flowers in axillary heads.

Flowers: Small, dirty white heads peduncles, complete, actinomorphic, highly aromatic.

- **Fruit:** Pods, pale-to dark-brown, spirally twisted, longitudinally veined, dry.

Flowering and Fruiting Time: August – April.

Significance:

Timber from the tree is used for furniture, wagon wheels, fence posts, cages, and pens.

The Umbrella thorn is also an important species for rehabilitation of degraded arid land; it tolerates drought, wind, salinity and a wide range of soil types, and has the additional benefit of fixing nitrogen, an essential plant nutrient, in the soil via its interaction with symbiotic root bacteria.





Acacia tortilis (Forssk.) Hayne.

40. *Syzygium cumini* (L.) Skeels

Botanical Name: *Syzygium cumini* (L.) Skeels

Synonyms: *Myrtus cumini*. L., *Eugenia jambolana* Lam.

Common Name: Jamboo, Indian Blackberry, Black Plum, Jaman, Java plum, ജാമ്പൂ

Plant Family: MYRTACEAE

Occurrence (Special Areas): Planted in many bungalows, societies and gardens for fruits

Plant Form and Habit: An evergreen tropical tree, 50 to 100 ft. tall

Leaves: Opposite decussate, petiolate, coriaceous, penninerved, gland dotted lanceolate.

Inflorescence: White Flower crowded in clusters on branches of lateral panicles, cymose.

Flowers: Greenish-white, fragrant, sessile, complete, actinomorphic, hermaphrodite.

- **Calyx:** Sepals 5, gamosepalous, calyx tube adnate to ovary, funnel shaped, superior, valvate.
- **Corolla:** Petals 4, polypetalous, cream, imbricate, deciduous.
- **Androecium:** Stamens infinite, in several series, small, versatile, dehiscing longitudinally.
- **Gynoecium:** Bicarpellary, syncarpous, inferior, many ovules, , axile placentation.
- **Fruit:** Berries, edible juicy, purple berry with calyx remains at the apex, 1-seeded.

Flowering and Fruiting Time: FLS: Feb.-Apr. FRS: Mar.-July.

Flower, Fruit: December-July

Significance: The leaves are antibacterial, and are used for strengthening the teeth and gums. The fruit and seeds are sweet, acrid, sour, tonic, and cooling, and are used in diabetics, diarrhoea and ringworm.



41. *Psidium guajava* L.

Botanical Name: *Psidium guajava* L.

Synonyms: *Psidium fragrans*, *Psidium pomiferum*, *Psidium cujavus*

Common Name: Jamfal, Guajava, Amrud, Peru, ຈາມຊາວ

Plant Family: MYRTACEAE

Occurrence (Special Areas): Commonly planted in bungalows and temples for fruits

Habit and Plant Form: Guava is a small tree or large shrub

Leaves: Aromatic, evergreen, opposite, short-petioled, oval or oblong-elliptic.

Inflorescence: Axils, cluster of small delicate flowers.

Flowers: Faintly fragrant white flowers.

- **Calyx:** Sepals 5, gamosepalous, calyx tube adnate to ovary.
- **Corolla:** Petals 5, polypetalous, white, imbricate, deciduous.
- **Androecium:** Stamens infinite, free.
- **Gynoecium:** Bicarpellary, syncarpous, inferior, many ovules, axile placentation.
- **Fruit:** Berries, many seeded, sweet, musky odor when ripe, ovoid, or pear-shaped.

Flowering and Fruiting Time: Flower, Fruit: Throughout the year

Significance: Planted commonly for fruits and also attract many birds.



42. *Neolamarckia cadamba* (Roxb.) Bosser

Botanical Name: *Neolamarckia cadamba* (Roxb.) Bosser

Synonyms: *Anthocephalus cadamba* (Roxb.) Miq.; *Anthocephalus indicus* H.L.Li

Common Name: Kadamb, కడంబ

Plant Family: RUBIACEAE

Occurrence (Special Areas): Few trees recorded in Bhuj- Temples

Plant Form and Habit: A deciduous tree, up to 20 m high.

Leaves: opposite, decussate, stipules interpetiolar, lanceolate, acute, entire, cauducous.

Inflorescence: Terminal globose heads.

Flowers: Fragrant, bisexual, yellowish, in globose heads.

- **Calyx:** Sepals 5, gamosepalous, tubular, truncate, funnel shaped, cupular or tubular.
- **Corolla:** Petals 5, gamopetalous, orange, funnel-shaped
- **Androecium:** Stamens 5, basifixed.
- **Gynoecium:** Bicarpellary, ovules pendulous, style long, white, much exerted.
- **Fruit:** Aggregated into a globular head, follicles 2 in each capsule seeds angular, minute.

Flowering and Fruiting Time: **FLS:** Apr.-Aug. **FRS:** Dry ones for best part of year on trees.

Significance: Kadamba is mentioned in the Bhagavata Purana. In North India, it is associated with Krishna while in the south it is known as "Parvati's tree". Radha and Krishna are supposed to have played in the hospitable and sweet-scented shade of the kadamba tree



43. *Albizia lebbbeck* (L.) Benth.

Botanical Name: *Albizia lebbbeck* (L.) Benth.

Synonyms: *Mimosa sirissa* Roxb., *Mimosa lebbbeck* L.

Common Name: Siris Tree, East India walnut, ଝାଲି ଶିରିଷ

Plant Family: FABACEAE Sub Family: MIMOSACEAE

Occurrence (Special Areas): Planted along road side and in wildereness areas, College campuses, Temples etc.

Plant Form and Habit: Medium to large tree with gray-brown bark

Leaves: Bipinnate, leaflets opposite, glands between their bases, base of petiole pulvinus.

Inflorescence: In showy Solitary, rounded clusters near stem tips.

Flowers: Yellowish-white, fragrant, stalked.

- **Calyx:** Pubescent; lobe short, deltoid, tube turbinate.
- **Corolla:** Tubular, campanulate, tube glabrous, greenish, triangular, acute, pubescent.
- **Androecium:** stamens numerous long much longer than the corolla.
- **Gynoecium:** Ovary subsessile.
- **Fruit:** a flat, linear pod, to 30 cm long, with many seeds; dried pods

Flowering and Fruiting Time: **FLS:** July-Oct. **FRS:** Oct-Mar. Flower often fall off on the ground before fertilization.

Significance: Good timber tree and using as shelter by many bird species, small mammals etc. Leaves paste applied on skin relate problems. Seed paste use on ring-worm.



44. *Bauhinia purpurea* L.

Botanical Name: *Bauhinia purpurea* L.

Common Name: Purple Orchid Tree, Camel's foot tree, Orchid tree, ગુલાબી કાચનાર

Plant Family: FABACEAE (Leguminosae) Sub Family: CAESALPINIACEAE

Occurrence (Special Areas): Planted mainly in gardens, bungalows, offices, academic buildings and other common places for beautiful large size purple flowers.

Habit and Plant Form: The beautiful & fragrant, classic, Orchid-like flowers, small unarmed tree.

Leaves: Alternate, sub-coriaceous, 9-13 nerved, divided $1/3 - 1/2$ the way down into 2 lobes.

Inflorescence: Terminal and axillary, few-flowered, corymbose racemes or panicles.

Flowers: Showy, fragrant, complete, zygomorphic, perigynous, pentamerous, Pedicellate.

- **Calyx:** Sepals 5, gamosepalous, fulvous-pubescent, tubular-turbinate.
- **Corolla:** Petals 5, rose to pink, polypetalous, imbricate, subequal, acute, entire.
- **Androecium:** Stamens 10, with 3 fertile stamens, polyandrous, versatile.
- **Gynoecium:** Monocarpellary, ovary stalked, marginal placentation, style long, terminal.
- **Fruit:** Pods, linear, flat, reddish-brown, woody, compressed, apex horned.

Flowering and Fruiting Time: Flower, Fruit: February-December; Fruits throughout the year

Significance: The flowers are used in pickles and curries and is regarded as a laxative. Many insects, butterflies, birds are attracting by colourful large size purple flowers. Remover of knots.



45. *Holoptelea integrifolia* (Roxb.) Planch.

Botanical Name: *Holoptelea integrifolia* (Roxb.) Planch.; **Synonyms:** *Ulmus integrifolia* Roxb.

Common Name: Charal, Kanjo, Indian Elm, མཚོ་ལོ་ལྷོ

Plant Family: ULMACEAE (Elm family)

Occurrence (Special Areas): Planted in wilderness landscape, Not common in Bhuj

Habit and Plant Form: A large deciduous, spreading, glabrous tree.

Leaves: Alternate, entire margins, coriaceous, pointed tip, stipules lateral, main nerves 5-7 pairs.

Inflorescence: Short racemes or fascicles.

Flowers: Minute, greenish-yellow, male & hermaphrodite mixed, complete, actinomorphic.

- **Perianth:** Tepals 4, gamotepalous, imbricate, calycine often unequal, greenish-brown
- **Androecium:** Stamens 4-8, exserted, glabrous, hairy, 2-celled.
- **Gynoecium:** Monocarpellary, compressed-ovate, pubescent, stalked, 1 ovule.
- **Fruit:** Samara, winged, flat, dry, compressed, broadly oblong, apex deeply notched
- **Seeds:** Flat, exalbuminous, edible.

Flowering and Fruiting Time: **FLS:** Dec-Feb. **FRS:** Jan-May.

Significance: Leaves are use to treat diabetes and other skin diseases.



46. *Bombax malabaricum* DC. / *Ceiba pentandra* (L.) Gaertn.

Botanical Name: *Ceiba pentandra* (L.) Gaertn.

Common Name: Kapok, cotton tree, કપક

Plant Family: MALVACEAE / BOMBACACEAE

Occurrence (Special Areas): Planted in many areas, road side as well as new development sites surrounding to Bhuj city, Wilderness landscape like Sahyog Van, Lalan College etc.

Habit and Plant Form: Straight tall trunk small or large tree

Leaves: Deciduous, palmate, 5-9 leaflets radiating from a central point, stipules small.

Inflorescence: Axillary or sub-terminal.

Flowers: A creamy white or pale pink in color, solitary.

- **Calyx:** Sepals 5, cup-shaped, cleft, leathery.
- **Corolla:** Petals 5, oblong, thick, whitish, imbricate, wooly outside.
- **Androecium:** Stamens in 5 bundles, opposite the petals, connate at the base.
- **Gynoecium:** Pentacarpellary, syncarpous, many ovuled, stigma 5-lobed.
- **Fruit:** Capsule, oblong many seeded, seeds packed in white silky cotton.

Flowering and Fruiting Time: February - March

Significance: Soft wood useful as timber; and woven into textiles, the fibers are also used in pillows.



47. *Carissa opaca* Stapf ex Haines

Botanical Name: *Carissa opaca* Stapf ex Haines

Synonyms: *Carissa spinarum* auct. non Linn., *Carissa congesta* Wight.

Common Name: Karamda, కరమడ

Plant Family: APOCYNACEAE

Occurrence (Special Areas): Commonly planted in many development projects, temples, offices, schools, colleges as Ornamental plant species.

Plant Form and Habit: An evergreen Shrub up to 3.5 meter, young shoots with milky juice.

Leaves: Glabrous, opposite, elliptic, mucronate, apiculate, coriaceous.

Inflorescence: Terminal corymbose cymes.

Flowers: white or light rose, sweet scented.

- **Calyx:** Sepals 5, apex acute to acuminate; glabrous
- **Corolla:** Petals 5, white, Corolla tube slender, 8-12 mm long, lanceolate, acute.
- **Androecium:** Stamens 5, inserted at the top of corolla tube.
- **Gynoecium:** Ovary one ovuled; stigma slightly bifid.
- **Fruit:** Berry, dark purple when ripe, with milky juice, edible. ellipsoid or subglobose.

Flowering and Fruiting Time: April-June.

Significance: *Carissa opaca* is a medicinal plant used, in ethnomedicine, to cure several diseases including jaundice, hepatitis, rheumatism and asthma.





Carissa opaca Stapf ex Haines



Carissa opaca Stapf ex Haines

48. *Derris indica* (Lam.) Benn. / *Pongamia pinnata* (L.) Pierre

Botanical Name: *Pongamia pinnata* (L.) Pierre

Synonyms: *Derris indica* (Lam.) Bennet, *Millettia pinnata*,

Common Name: Karanj, కరంజ

Plant Family: FABACEAE

Occurrence (Special Areas): Very commonly planted along road side, offices, college campuses, schools etc.

Habit: An evergreen tree

Leaves: Alternate, imparipinnate compound, glabrous, stipules small, shortly acuminate.

Inflorescence: Axillary drooping racemes.

Flowers: White with purple lines, complete, zygomorphic, hypogynous, pentamerous.

- **Calyx:** Sepals 5, dark-reddish-purple, gamosepalous, persistent, campanulate, toothed.
- **Corolla:** Petals 5, pinkish- white, polypetalous, papilionaceous, vexillary, much exserted
- **Androecium:** Stamens 10, monodelphous, versatile, 2- celled, introse.
- **Gynoecium:** Monocarpellary; ovary sessile, unilocular with marginal placentation.
- **Fruit:** Pods, thick, glabrous, smooth, woody, obliquely flattened, **Seeds:** 1, brown.

Flowering and Fruiting Time: April-May

Significance: Fast growing and small branches are use for toothbrush, seeds are also good sources of biofuel.



49. *Nerium oleander* L.

Botanical Name: *Nerium oleander* L.

Synonyms: *Nerium indicum* Mill.

Common Name: Lal Karen, Oleander Tree, Indian Oleander, ଳଳ କରେ଼

Plant Family: APOCYNACEAE (Oleander family)

Plant Form: An erect evergreen shrub, branches glabrous with milky juice.

Occurrence (Special Areas): Very commonly planted in Bhuj

Habit: Shrub, rises up to 3 meters erect with its short branches.

Leaves: Dusty green, leathery, grow in whorls, lance-like, with an entire margin.

Inflorescence: A long, terminal racemose cymes or dichasial cyme.

Flowers: White, pink or yellow, complete, actinomorphic, pentamerous, hypogynous, cyclic.

- **Calyx:** Sepals 5, polysepalous, twisted, purple red.
- **Corolla:** Petals 5, gamopetalous, twisted, corona present at the throat of corolla.
- **Androecium:** Stamens 5, polyandrous, epipetalous, inserted, appendiculate thread.
- **Gynoecium:** Bicarpellary, superior, syncarpous, many ovules, axile placentation.
- **Fruit:** Follicles, cylindrical, straight, ribbed, numerous downy seeds.

Flowering and Fruiting Time: Throughout the year.

Significance: Poisons plant species, plants for the road dividers, where a plant has to withstand heat and dust, and little water.



50. *Cassia javanica* L.

Botanical Name: *Cassia javanica* L.

Common Name: Pink Cassia, Pink Mohur, Pink Shower, કલ્પક

Plant Family: LEGUMINOSAE **Sub family:** CAESALPINIACEAE

Occurrence (Special Areas): Not very common in Bhuj, Planted along road side and gardens

Plant Form and Habit: A Medium sized tree.

Leaves: Alternate, pinnately compound, leaflets 12-16 pairs, leathery, stipules crescent.

Inflorescence: Axial, lateral racemes on short side branches.

Flowers: Red or pink, complete, zygomorphic, hermaphrodite, pentamerous, hypogynous.

- **Calyx:** Sepals 5, pink and papery, ovate and pointed.

Corolla: Petals are five, bright pinkish, broadly spoon-shaped, blunt to obovate.

Androecium: Stamens 10, all fertile, filaments swollen to the middle.

Gynoecium: Monocarpellary, subsessile, many ovules on marginal placentation.

Fruit: Pods, dark-brown, glabrous, pendent, cylindrical.

Flowering and Fruiting Time: **FLS:** Mar-May. **FRS:** Apr-July. Often for a longer time on trees.

Significance: Planted as ornamental species for beautiful Pink Flowers



51. *Cassia siamea* Lam./ *Senna siamea* (Lam.) H. S. Irwin & Barneby

Botanical Name: *Senna siamea* (Lam.) H. S. Irwin & Barneby **Synonyms:** *Cassia siamea* Lam.

Common Name: Kashid, Kasheed, કાશીદ

Plant Family: FABACEAE; Subfamily: CAESALPINIOIDEAE

Occurrence (Special Areas): Commonly planted in Bhuj areas as fast growing species

Habit and Plant Form: A medium-size, evergreen tree growing up to 18 m (60 ft)

Leaves: Alternate, pinnately compound, 6 to 14 pairs of leaflets, margin entire.

Inflorescence: A long, terminal branched racemes and axillary corymbs.

Flowers: Pale-yellow, pedicellate, complete, zygomorphic, pentamerous, hypogynous;

- **Calyx:** Sepals 5, outer 2 smaller, inner 3 large, concave, apex obtuse.

Corolla: Petals 5, yellow, ovate-elliptic.

Androecium: Stamens 10, upper 3 staminodes, 2 lower larger ,1 medium ,4 short.

Gynoecium: Monocarpellary, sessile, deeply grooved, pubescent, ovules numerous.

- **Fruit:** Blackish-brown, woody Pods, stoutly beaked, flattened, dark-brown seeds.

Flowering and Fruiting Time: Throughout the year (Aug-May)

Significance: It is widely cultivated for its timber, which is used in construction, furniture making, and pulp production.



52. *Musa paradisiaca* L.

Botanical Name: *Musa paradisiaca* L.

Common Name: Kela, Banana, కేల

Plant Family: MUSACEAE

Plant Form: Tree-like perennial herb.

Occurrence (Special Areas): Planted mainly in bungalows

Habit: Tree-like herb, up to 9 m in height. with thick rhizome, pseudo stem fleshy.

Leaves: Leaf sheaths tubular, elliptic-oblong, glabrous, splitting the transverse parallel veins.

Inflorescence: A long, dense cymose subtended by a large coloured bracts, pedulous spikes.

Flowers: A incomplete, zygomorphic, unisexual, sessile in two rows, spatheaceous, dark red lower bracts (proximal) subtending female & and distal bracts with male flowers.

- **Calyx:** Sepals 5, gamosepalous, tubular, split down one side to the base, lobed.
- **Corolla:** A single petal convex, membranous, opposite the calyx slit, notched.
- **Androecium:** Stamens 5, filaments stout, erect, filiform; anther 2-celled, erect.
- **Gynoecium:** Tricarpellary; ovary inferior, axile palcentation; stigma 6-lobed.
- **Fruit:** Berry, cylindrical, yellowish or yellowish green, pulp scarcely sweet.

Flowering and Fruiting Time: Throughout the year.

Significance: Very famous fruits and use more during fasting



53. *Capparis decidua* (Forssk.) Edgew.

Botanical Name: *Capparis decidua* (Forssk.) Edgew.

Synonyms: *Capparis aphylla* Roth.

Common Name: Kerdo, Caper Plant

Plant Family: CAPPARACEAE

Occurrence (Special Areas): Not planted and mainly in Wilderness landscape

Habit and Plant Form: A straggling, glabrous, armed, bushy shrubs.

Leaves: On young shoots small and narrow and soon fall off, only appear during short rains.

Inflorescence: Many flowered (10-20) corymbs from old branches.

Flowers: pink-red, bracteate, complete, zygomorphic, hermaphrodite, tetramerous.

- **Calyx:** Sepals 4, 2 whorls of 2 each; imbricate, petaloid, elliptic, acute.
- **Corolla:** Petals 4, polypetalous, imbricate, scarlet red,
- **Androecium:** Stamens infinite (8-18), polyandrous, dithecal, dorsifixed, introse.
- **Gynoecium:** Bicarpellary, syncarpous, unilocular, stalked, parietal placentation
- **Fruit:** Berry, spherical, smooth, glabrous, red when ripe, beaked, edible.

Flowering and Fruiting Time: February-November

Significance: Prickles is very famous from mature fruits and fruits and flowers are also like by many insects and birds. Good for bone fracture.



54. *Butea monosperma* (Lam.) Taubert

Botanical Name: *Butea monosperma* (Lam.) Taub.

Synonyms: *Erythrina monosperma* Lam.; *Butea frondosa* Koenig ex Roxb.

Common Name: Flame of the Forest, Kesudo, Khakhro, Palash, કેસૂડો, ખાખરો

Plant Family: LEGUMINOSAE Subfamily: FABACEAE

Occurrence (Special Areas): Planted mainly in gardens, bungalows, offices for beautiful orange flowers before Holi festival.

Habit and Plant Form: A medium sized deciduous tree, 20-40 feet high, trunk twisted, grey bark and indicator as soil layer is very small in and around this plant habitats- mainly in wild.

Leaves: Alternate, tri-foliolate Pinnate, each leaflet 10-20 cm long, stipules deciduous small.

Inflorescence: A compact rigid raceme on leafless branches.

Flowers: Bright orange-red, Complete, zygomorphic, hermaphrodite, pentamerous, hypogynous.

- Five **petals** comprising one standard, two smaller wings and a very curved beak-shaped keel.
- **Calyx:** Sepals 5, gamosepalous, persistent, dark olive- green, clothed with silky hairs within.
- **Corolla:** Petals 5, polypetalous, vexillary, much exerted, orange or salmon coloured.
- **Androecium:** Stamens 10, didelphous (9+1), 2-celled, dehiscent longitudinally, basifixed.
- **Gynoecium:** Monocarpellary, sessile, ovule 2 on marginal placentation.
- **Fruit:** Brown Pods, oblong, one-seeded, densely hairy, splitting round the single apical seed.

Flowering and Fruiting Time: Dec. – May.

Significance: Flowers are useful to make organic colors during holi festival, good for skin; and leaves are collecting and sry for making ecofriendly food plates in tribal areas of Gujarat.





Butea monosperma (Lam.) Taub.

55. *Pandanus fascicularis* Lamarck

Botanical Name: *Pandanus odorifer* (Forssk.) Kuntze

Synonyms: *Keuraodori fera*, *Pandanus odoratissimus* L.f., *Pandanus fascicularis* Lam.

Common Name: Screw pine, Ketaki, Kevra, કેવડો

Plant Family: PANDANACEAE

Plant Form: Large shrubs or small trees upto 6 m high.

Occurrence (Special Areas): Planted mainly in temples- Changleshwar Mahadev

Habit: A small branched tree or shrub.

Leaves: Fragrant, spirally arranged, base sheathing, linear, prickles on margins & midrib,

Inflorescence: Spadix.

Flowers: fragrant, dioecious, small, incomplete, actinomorphic, unisexual.

- **Male Flower:** Perianth: absent.;
- **Androecium:** Stamens numerous, basifixed, elongate, 2-celled.
- **Female Flower:** Pistillate, hypogynous.
- **Gynoecium:** Yellow Carpels confluent in obpyramidal groups of 6-10 or fewer.
- **Fruit:** Yellow or red, consisting of numerous (50-60) drupes; angular, brown smooth.

Flowering and Fruiting Time: July-Oct.

Significance: The male plant is a source of scented flowers used in making Kewda (perfumes). Leaves are use in Hindu festival and offering during workshop.



56. *Phoenix sylvestris* (L.) Roxb.

Botanical Name: *Phoenix sylvestris* (L.) Roxb.

Synonyms: *Elate sylvestris* L.

Common Name: Kharek, Khajuri, Khejur, Date sugar palm, ખજૂર, ખારેક

Plant Family: ARECACEAE (PALMAE)

Plant Form: Tree

Occurrence (Special Areas): Planted mainly for fruits in private properties, colleges etc.

Habit: A large thick hemispherical crown, caudex, clothed with the persistent bases of the petioles.

Leaves: Long, cauline, unipinnately compound, exstipulate, lanceolate, unicostate parallel venation.

Inflorescence: Spadix.

Flowers: White, Bracteate, sessile, incomplete, actinomorphic, unisexual.

- **Male flower:** Staminate, trimerous and cyclic.
- **Perianth:** Tepals 6, in two whorls of 3 each, inner tepals free, twisted.
- **Androecium:** Stamens 6 in 2 whorls, polyandrous, filaments short, dithecous, dorsiflexed.
- **Female flower.** Pistillate, trimerous, hypogynous and cyclic.
- **Perianth:** Tepals 6 in 2 whorls of 3 each.
- **Gynoecium:** Tricarpellary, apocarpous, ovary superior, style absent, stigma uncinatate.
- **Fruit:** Berry, single-seeded fruit ripens to orange-yellow, edible, fruiting spadix.

Flowering and Fruiting Time: January-October.

Significance: Wild date mainly spreading by birds and small mammals; Planted for fruits with many varieties available in Bhuj city.



57. *Salvadora persica* L.

Botanical Name: *Salvadora persica* L.

Common Name: Khari-Jar, Piludi, toothbrush tree, Miswak, ખરી જાર, પીલું

Plant Family: SALVADORACEAE

Occurrence (Special Areas): Planted in wildereness patches- Sahyog Van, Jaynagar Van etc.

Habit and Plant Form: Much-branched evergreen shrub or small tree.

Leaves: Simple, warm and pungent taste, opposite, fleshy, glaucous, elliptic-lanceolate.

Inflorescence: Axillary and terminal compound lax panicles, numerous in upper axile.

Flowers: Greenish yellow; Bracteates, Pedicellate, very caduceus,

- **Calyx:** Cupular, valvate, lobes 4, coriaceous, rounded, obtuse.
- **Corolla:** Cream, shortly tubular, very thin, persistent, emarginate.
- **Androecium:** Stamens 4, Shorter than corolla, but exerted, epipetalous, inserted.
- **Gynoecium:** 4-lobed, unilocular, basal placentation; stigma broadly truncate.
- **Fruits:** Drupes, pink to deep-purple edible, spherical, fleshy, globose, smooth.

Flowering and Fruiting Time: Nov-Dec.

Significance: Its sticks are traditionally used as a natural toothbrush called miswak; and many birds like small fruits. Mainly planted for fodder as drought as well as saline resistant fast-growing species in Kutch.



58. *Moringa concanensis* Nimmo ex Dalzell & A. Gibson

Botanical Name: *Moringa concanensis* Nimmo.

Common Name: Kadvo sargvo, Jangli sargua, Konkan Moringa, જંગલી કડવો સરગવો

Plant Family: MORINGACEAE

Occurrence (Special Areas): Planted as common sargava, and in Gardens, bungalows, offices, colleges etc.

Plant Form and Habit: A small tree with thick bark.

Leaves: Alternate, 2-pinnately compound; imparipinnate, opposite, exstipulate pulvinate.

Inflorescence: Axillary, panicles, peduncle upto 6 cm long.

Flowers: Yellowish, with red tinge, complete, zygomorphic, perigynous, pentamerous.

- **Calyx:** Sepals 5, oblong, white, reflexed, gamosepalous, imbricate, cup-shaped.
- **Corolla:** Petals 5, yellow, polypetalous, unequal, inserted on the hypanthodium
- **Androecium:** Stamens 9-10, 4-5 much smaller staminodes, polyandrous, versatile.
- **Gynoecium:** Tricarpellary, syncarpous ovary, numerous ovules, parietal placentation.
- **Fruit:** A long pod, linear, 30-45 cm long, sharply 3-angled.

Flowering and Fruiting Time: Flowering: October-March. Fruit: February-April

Significance: *Plant is poisons.* Flowers attract many insects, butterflies and bird species.



59. *Tamarindus indica* L.

Botanical Name: *Tamarindus indica* L.

Common Name: Tamarind Tree, Amblijo zad, Amlī, ખાટી આમલી

Plant Family: LEGUMINOSAE; **Subfamily:** CAESALPINIACEAE

Plant Form: An evergreen tree.

Occurrence (Special Areas): Several old trees are planted before more than 100 years in wadi areas surrounding by Hamirsar Lake, commonly planted in wildereness habitats- Sahyog Van, Jaynagar Van etc.

Habit: Large tree with a short massive trunk.

Leaves: Alternate, exstipulate, compound, unipinnate and pari pinnate, petiolate, glabrous.

Inflorescence: Axillary racemose raceme.

Flowers: Bracteate, bracteolate, pedicellate, complete, zygomorphic, hypogynous and cyclic.

- **Calyx:** Sepals 4, polysepalous, imbricate, posterior sepal large, greenish yellow.
- **Corolla:** Petals 5, polypetalous, anterior two petals reduced, ascending imbricate, yellow.
- **Androecium:** Fertile stamens 3, staminodes 4, monadelphous, ditheous, versatile, introrse.
- **Gynoecium:** Monocarpellary, superior, placentation marginal, ovules many, style long.
- **Fruit:** Legume, mesocarp pulpy, surrounds the 8-10 seeds, sweet and extremely sour.

Flowering and Fruiting Time: April-December

Significance: Planted for the fruits used in condiments and essential cooking.



60. *Acacia senegal* (L.) Willd.

Botanical Name: *Acacia senegal* (L.) Willd.

Synonyms: *Mimosa senegal* L.

Common Name: Kher, Gum Arabic Tree, ເຢຣ ພຣາດ, ຈີເຣັດ ພຣາດ

Plant Family: LEGUMINOSAE; **Subfamily:** MIMOSACEAE

Occurrence (Special Areas): Mainly wild and naturalized at some areas- Jaynagar Plantation areas, Smrutivan Landscape, Khari River Landscape near Sahyongara Van etc.

Plant Form and Habit: A small deciduous tree, height of 5-12m, with a trunk up to 30 cm in diameter. Easily distinguish with other Bavar by its yellowish bark.

Leaves: Alternate, bipinnately compound, stipular spines, leaflets 8-15 pairs, petioles very short.

Inflorescence: Axillary, solitary or 2-3 fascicled spikes.

Flowers: white to yellowish, fragrant, stalkless.

- **Calyx:** Campanulate, divided about 1/3 of the way down; teeth distinct, deltoid.
- **Corolla:** Twice, as long as the calyx, lanceolate, acute.
- **Androecium:** filaments white, anthers yellow.
- **Fruits:** Flat pods, shortly stalked, thin, flexible, pale-brown and glabrous when ripe.

Flowering and Fruiting Time: January–March.

Significance: The tree produces gum arabic, which is used as a food additive, in crafts, and as a cosmetic. The gum is drained from cuts in the bark, and an individual tree will yield 200 to 300 grams- mainly use during winter season as *Vasana*-local traditional sweet.



61. *Prosopis cineraria* (L.) Druce

Botanical Name: *Prosopis cineraria* (L.) Druce

Synonyms: *Mimosa cineraria* L., *Prosopis spicata* L., *Prosopis spicigera*

Common Name: Khijdo-Kandho, Chaunkra, Khar, Khejra, khijdi, Semi, ખીજડી, કંઢે

Plant Family: LEGUMINOSAE; **Subfamily:** MIMOSACEAE

Occurrence (Special Areas): Planted mainly in wildereness habitats like Sahyog Van and Jaynagar Van, Fe old trees available in Smrutivan and Arihant Nagar areas; Sacred tree

Plant Form and Habit: A small moderate sized evergreen thorny tree.

Leaves: Bipinnately compound, pinnae 2pairs, opposite, leaflets 7-12 pairs, apex mucronate.

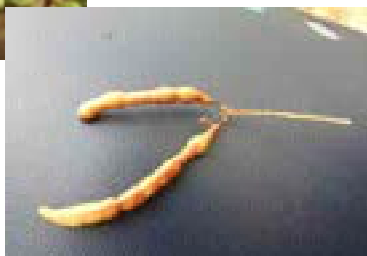
Inflorescence: Long, slender, axillary spikes.

Flowers: Small, yellow, complete, hermaphrodite, pentamerous, hypogynous.

- **Calyx:** Sepals 5, gamosepalous, cup-shaped, faintly 5-toothed.
- **Corolla:** Petals 5, yellow, gamopetalous, valvate.
- **Androecium:** Stamens 10, polyandrous, shortly exerted, crested with a deciduous gland.
- **Gynoecium:** Monocarpellary, many ovules on marginal placentation, style minute, terminal.
- **Fruit:** Long Pods, cylindric, glabrous, edible, 10-15 seeded.

Flowering and Fruiting Time: Oct-June

Significance: This tree is a legume and it improves soil fertility. Camels and goats readily browse it. In areas open to goat browsing, the young plants assume cauliflower shaped bushy appearance.





Prosopis cineraria (L.) Druce

62. *Limonia acidissima* L.

Botanical Name: *Limonia acidissima* L.

Synonyms: *Feronia elephantum* Corr., *Feronia limonia* (L.) Swingle, *Schinus limonia*

Common Name: Kothi, Wood Apple, କିଣି

Plant Family: RUTACEAE (citrus family)

Occurrence (Special Areas): Planted in wildereness habitats- Sahyog Van, Lalan College, selected gardens etc.

Habit: An erect, slow-growing evergreen tree with a few upward-reaching branches.

Leaves: Alternate, imparipinnately compound, dotted oil glands, slightly lemon-scented.

Inflorescence: Terminal or lateral panicles.

Flowers: Yellowish green, tinged with red, complete, actinomorphic, cyclic, pentamerous.

- **Calyx:** Sepals 5, gamosepalous, valvate, small, glandular, acute, equal.
- **Corolla:** Petals 5, polypetalous, imbricate, glandular, apiculate, disk thick, annular.
- **Androecium:** Stamens 10-12, polyandrous, inserted around the disc, introse, dorsifixed.
- **Gynoecium:** Carpels 5-6, syncarpous, several ovules in each locule, axile placentation.
- **Fruit:** Berry, an amphisarca, indehiscent, globose, many seeded, very acidic.

Flowering and Fruiting Time: FLS: March-July

FRS: March-December.

Significance: The fruit pulp is used to make chutney which is then used as a main condiment in and on top of meals, especially in winter.





Limonia acidissima L.

63. *Plumeria rubra* L.

Botanical Name: *Plumeria rubra* L.

Synonyms: *Plumeria rubra* f. *rubra*, *Plumeria rubra* var. *acutifolia* Poir.

Common Name: Red Frangipani, Lal gulachin, Champa, ચંપો લાલ ફૂલ વાળો

Plant Family: APOCYNACEAE (Oleander family)

Occurrence (Special Areas): Planted mainly for ornamental fast-growing species

Habit: A spreading shrub or small tree up to a height of 2-8 m with plenty of milky juice.

Leaves: large, green, long, alternat, spatulate, clustered at the end of the branches.

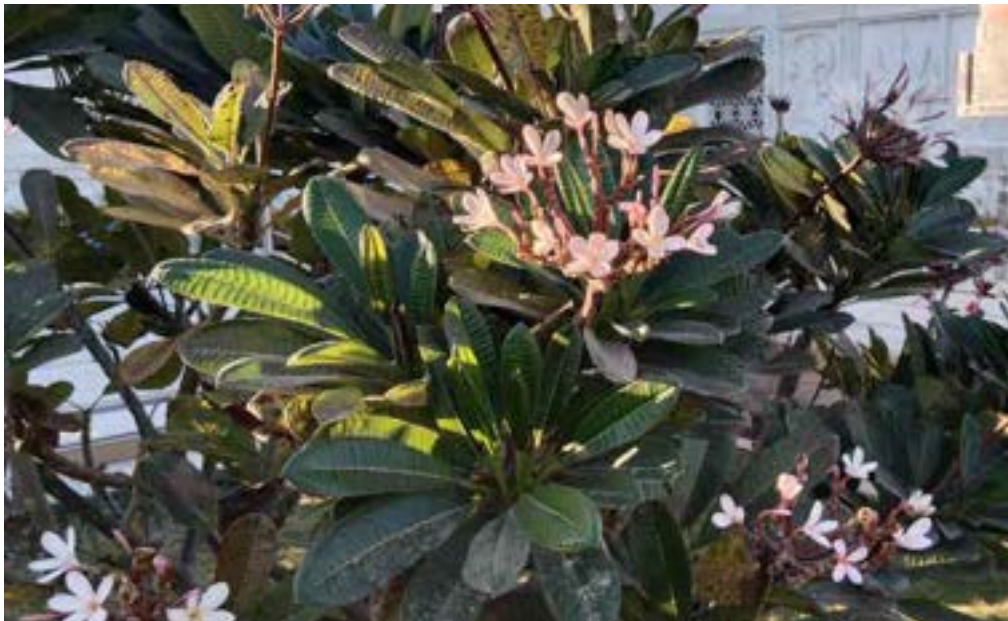
Inflorescence: In terminal or corymbose, shortly peduncled cymes.

Flowers: Red, fragrant, complete, actinomorphic, hypogynous, pentamerous, hypogynous.

- **Calyx:** Sepals 5, lobes subequal, rounded, obtuse.
- **Corolla:** Petals 5, gamopetalous, funnel shaped, pink to white with shades, obtuse.
- **Androecium:** Stamens 5, epipetalous, acute, free from stigma.
- **Gynoecium:** Bicarpellary, syncarpous, unilocular, marginal placentation, Fruit Follicles.

Flowering and Fruiting Time: Throughout the year.

Significance: Ornamental species for pink fragrant flowers





Plumeria rubra L.

64. *Guaiacum officinale* L.

Botanical Name: *Guaiacum officinale* L.

Common Name: Lignum, Lignum-vitae, Tree of Life

Plant Family: ZYGOPHYLLACEAE

Occurrence (Special Areas): Planted few trees in Gardens, Temple etc.

Plant Form and Habit: Small evergreen tree, very slow growing tree.

Leaves: Compound, 2 or 3 pairs of smooth, stalkless leaflets arranged on a mid-rib.

Inflorescence: Clusters at the ends of the branches.

Flowers: Showy, bluish purple.

- **Calyx:** Sepals 5, polysepalous, finely hairy calyx, supported on a slender stalk.
- **Corolla:** petals 5, polypetalous, bluish purple, imbricate.
- **Androecium:** Stamens 10, inserted at the base of disk, golden yellow, 2-celled.
- **Gynoecium:** Carpels 2-3, syncarpous; ovary globose, axile placentation.
- **Fruit:** Capsule, round, compressed, bright yellow-orange capsules, black seeds.

Flowering and Fruiting Time: Mar-Oct

Significance: Planted mainly for ornamental purposes and beautiful blue flowers.



65. *Citrus limon* (L.) Burm.f.

Botanical Name: *Citrus limon* (L.) Burm.f

Synonyms: *Citrus limonum* Risso.

Common Name: Limbu, Lemon, ලිම

Plant Family: RUTACEAE

Occurrence (Special Areas): Planted mainly for fruits in Gardens and Bungalows

Habit and Life Form: Tree grows up to 6 m tall, thorny small tree or large shrub.

Leaves: Leathery, alternate, exstipulate palmately compound, unifoliate, petioles winged.

Inflorescence: Axillary, solitary or 2-3 clustered umbellate cymes.

Flowers: White, fragrant, pedicellate, complete, actinomorphic, pentamerous, hypogynous.

- **Calyx:** Sepals 5, gamosepalous, valvate.
- **Corolla:** Petals 5, polypetalous, imbricate, white, coriaceous, gland dotted.
- **Androecium:** Stamens indefinite (20-40), polyadelphous, introse, anthers 2-celled, oblong.
- **Gynoecium:** Multicarpellary, syncarpous, ovary globose, multilocular, axile placentation.
- **Fruit:** Berry, a hesperidium, ovoid bright yellow, manillate at apex, replate with acidic juice.

Flowering and Fruiting Time: Throughout the year.

Significance: Lemon fruits can be highly acidic and have a high content of citric acid and vitamin C and other key nutrients, providing health benefits.



66. *Azadirachta indica* A. Juss.

Botanical Name: *Azadirachta indica* A. Juss.

Common Name: Neem Tree, Indian lilac, Neem, KadvoLimbdo, Limbdo, ଚୂଲମ୍ବି

Plant Family: MELIACEAE

Occurrence (Special Areas): Most common and dominant planted species in Bhuj.

Habit and Plant Form: A fast-growing tree that can reach a height of 15-20 m.

Leaves: Alternate, exstipulate, crowded at the end of branches, imparipinnately compound.

Inflorescence: Axillary panicles.

Flowers: White and fragrant, complete, actinomorphic, pentamerous, hypogynous, cyclic.

- **Calyx:** Sepals 5, polysepalous, valvate.
- **Corolla:** Petals 5, polypetalous, imbricate or quincuncial, tomentose, disk absent.
- **Androecium:** Stamens 10, monodelphous, forming a staminal tube enclosing the ovary
- **Gynoecium:** Tricarpellary, syncarpous, ovary glabrous, axile placentation.
- **Fruit:** Drupe, ovoid-oblong, smooth, yellow, endocarp woody.

Flowering and Fruiting Time: FLS: Dec.-Mars.

FRS: Jan.-May

Significance: Fruits and seeds are the source of neem oil. Leaves are dried in India and placed in cupboards to prevent insects from eating clothes, and in containers in which rice and wheat are stored. Branches use as toothbrush against teeth problems. Bark use in fever and leaves paste applied on wounds.





Azadirachta indica A. Juss.

67. *Leucaena leucocephala* (Lam.) de Wit

Botanical Name: *Leucaena leucocephala* (Lam.) de Wit

Synonyms: *Mimosa leucocephala* Lam., *Leucaena glauca*

Common Name: Subaul, Lead tree, Pardesi Baval, Liso Baval, Vilayti Baval, ສູ ພືດຸດ

Plant Family: LEGUMINOSAE; **Subfamily:** MIMOSACEAE;

Occurrence (Special Areas): Planted as fast-growing species and invasive in nature.

Habit and Plant Form: Very fast-growing Tree.

Leaves: Alternate, bipinnately compound, pubescent, ending in a weak spine, leaflets 10-20 pairs.

Inflorescence: White globose heads peduncles often geminate.

Flowers: White, actinomorphic, hermaphrodite, pentamerous, sessile, hypogynous, bracts usually 2.

- **Calyx:** Sepals 5, gamosepalous, tubular-campanulate, membranous; teeth short, triangular.
- **Corolla:** Petals 5, whitish, free.
- **Androecium:** Stamens 10, polyandrous, much exserted, pubescent.
- **Gynoecium:** Monocarpellary, unilocular with many ovules on marginal placentation.
- **Fruit:** Pods flat, glabrous, pale to dark-brown, straight, 15-20 Seeded.

Flowering and Fruiting Time: FLS: May – Nov. FRS: May – Feb.

Significance: Fodder tree and invasive in nature; need to be controlled once planted.



68. *Swietenia mahagoni* (L.) Jacq.

Botanical Name: *Swietenia mahagoni* (L.) Jacq.

Synonyms: *Cedrela mahagoni* L., *Cedrus mahogani* (L.) Mill., *Swietenia acutifolia* Stokes,

Common Name: Mahagoni, મહાગોળી નીમ

Plant Family: MELIACEAE

Occurrence (Special Areas): Planted and Not Common species, Swaminarayan temple

Plant Form and Habit: Evergreen tree, up to 30 m, spherical crown, a dense shade.

Leaves: Pinnately compound, made up of 3-6 pairs of ovate or ovate-lanceshaped leaflets.

Inflorescence: Axillary and terminal panicles

Flowers: White, complete, actinomorphic, hermaphrodite, hypogynous, pentamerous.

- **Calyx:** Sepals 5, polysepalous, imbricate, rotund.
- **Corolla:** Petals 5, polypetalous, spreading, clawed, white.
- **Androecium:** Stamens 10, monodelphous, forming a staminal tube covering the ovary.
- **Gynoecium:** Carpels 5, syncarpous, many ovules, axile placentation, biseriate, pendulous,
- **Fruit** Capsule, woody, 5-celled septifragally 5-valved, 5-winged axis.

Flowering and Fruiting Time: FLS: Feb.-Apr.

FRS: Mar.-Jane.

Significance: Finest timber for high-class furniture and cabinet work.



69. *Pithecellobium dulce* (Roxb.) Benth.

Botanical Name: *Pithecellobium dulce* (Roxb.) Benth. **Synonyms:** *Mimosa dulcis* Roxb.

Common Name: Mithi Ambli- Goras Ambli, Sweet Tamarind, Monkeypod, Jangal Jalebi.

Plant Family: LEGUMINOSAE; **Subfamily:** MIMOSACEAE, ગોરસ આમલી, મીઠી આમલી

Occurrence (Special Areas): Very common and dominant plant species in Bhuj

Plant Form and Habit: A fast-growing short stipular thorny tree.

Leaves: Alternate, bipinnately compound, pinnae 1-2 pairs stalked, stipular spines erect.

Inflorescence: Globose heads.

Flowers: Complete, actinomorphic, subsessile, pentamerous, hypogynous, bract small, caducous.

- **Calyx:** Sepals 5, gamosepalous, densely brown-silky, funnel shaped, teeth triangular.
- **Corolla:** Petals 5, gamopetalous, valvate, funnel-shaped, cream-coloured, acute.
- **Androecium:** Stamens indefinite, monodelphous, much exerted.
- **Gynoecium:** Monocarpellary, stalked, minute, many ovules on marginal placentation.
- **Fruit:** Pods coiled, spirally twisted, flat, edible aril.

Flowering and Fruiting Time: FLS: Nov–Apr.

FRS: Dec.-June

Significance: Fruits available in local Bhuj market and white red colour pulp like more by local residents- good for digestion. *Pithecellobium dulce* is a host plant for the caterpillars of the Common nawab (*Polyura athamas*), three-spot grass yellow (*Eurema blanda*), Bright babul blue (*Azanus ubaldus*) and several moths.



70. *Salvadora oleoides* Decne.

Botanical Name: *Salvadora oleoides* Decne.

Common Name: Mithi Jar, Motijal, મીઠી જાર-પીલું

Plant Family: SALVADORACEAE

Occurrence (Special Areas): Wildereness landscape and not very common in Bhuj

Plant Form and Habit: An evergreen shrub or tree, it can grow up to 6 - 9 metres tall.

Leaves: Dull green, opposite, simple, coriaceous & somewhat fleshy on maturity, glabrous.

Inflorescence: Axillary, paniculate spikes of racemes.

Flowers: Greenish white, complete, actinomorphic, sessile, tetramerous, hypogynous.

- **Calyx:** Sepals 4, gamosepalous, campanulate, obtuse.
- **Corolla:** Petals 4, gamopetalous, tubular, campanulate, tube short, imbricate in bud.
- **Androecium:** Stamens 4, inserted at the base or in the middle of corolla-tube, polyandrous.
- **Gynoecium:** Bicarpellary, syncarpous, 1-celled, with solitary ovule, style absent.
- **Fruit:** globose, glabrous, subsessile, yellow when ripe.

Flowering and Fruiting Time: Nov-Mar.

Significance: Local use as a medicine and source of materials. It is sometimes grown as a shelterbelt and to protect the soil, and is also planted in order to enjoy its dense shade. Plant use for cough relate problems.



71. *Murraya koenigii* (L.) Spreng

Botanical Name: *Murraya koenigii* (L.) Spreng.

Synonyms: *Bergera koenigii* L.

Common Name: Mitho Limdo, Curry Patta, ମିଥୋ ଲିମ୍ବୋ, କରୀ ପତ୍ତା

Plant Family: RUTACEAE

Occurrence (Special Areas): Planted mainly for leaves in bungalows and offices

Habit and Plant Form: 3-5 m, deciduous, tree.

Leaves: Alternate, exstipulate, imparipinnate, leaflets 11-25, alternate, gland-dotted, acute.

Inflorescence: Terminal, paniculate cymes of many flowered.

Flowers: Small, white, fragrant, bracteate, complete, actinomorphic, hermaphrodite.

- **Calyx:** Sepals 5, polysepalous, valvate.
- **Corolla:** Petals 5, polypetalous, imbricate, white, gland dotted.
- **Androecium:** Stamens 10 in 2 whorls, polyandrous alternate, dorsifixed, small, short.
- **Gynoecium:** Bicarpellary syncarpous, 2 ovules in each locule on axile placentation.
- **Fruit:** Berry 2- seeded, red or purplish black.

Flowering and Fruiting Time: FLS& FRS: Mar-May

Significance: Mainly prevents hair loss.



72. *Moringa oleifera* Lam.

Botanical Name: *Moringa oleifera* Lam.

Synonyms: *Moringa pterygosperma* Gaertn.

Common Name: Mitho Sargvo, Drumstick Tree, મીઠો સરગવો

Plant Family: MORINGACEAE

Occurrence (Special Areas): Planted very commonly in gardens, bungalows and other areas for fruits and leaves.

Habit and Plant Form: A small, deciduous tree.

Leaves: Alternate, 3-pinnately compound, pinnules imparipinnate, opposite, exstipulate.

Inflorescence: Terminal, panicles at the ends of branches.

Flowers: Creamy-white, complete, zygomorphic, , perigynous, numerous, bracts minute.

- **Calyx:** Sepals 5, gamosepalous, imbricat.
- **Corolla:** Petals 5, polypetalous, unequal, inserted on the hypanthodium, white, unequal,
- **Androecium:** Stamens 10-12, staminodes 5-7, versatile, monotheceous.
- **Gynoecium:** Tricarpellary, syncarpous, unilocular, numerous ovules, parietal placentation.
- **Fruit:** Capsule pods long, linear, unilocular, loculicidally 3-valved, obtusely triangular

Flowering and Fruiting Time: Throughout the year

Significance: Seed pods are used as a vegetable. The bark, sap, roots, leaves, seeds and flowers are used in traditional medicine.



73. *Citrus* sp.

Common Name: Mosambi Ni Jat

74. *Citrus sinensis* (L.) Osbeck

Botanical Name: *Citrus sinensis* (L.) Osbeck **Synonyms:** *Citrus aurantium* L. var. *sinensis* L.

Common Name: Mosambi, મોસંબી ની જાતો

Plant Family: RUTACEAE

Occurrence (Special Areas):

Habit and Plant Form: A thorny, large shrubs or small tree.

Leaves: Unifoliate, pellucid oil glands, petioles winged, Straight spines present at leaf axils.

Inflorescence: Axillary, solitary Cyme.

Flowers: Flowers are white, fragrant, pedicellate, complete, actinomorphic, hermaphrodite.

- **Calyx:** Sepals 5, gamosepalous, valvate.
- **Corolla:** Petals 5, polypetalous, imbricate, Yellowish, gland dotted, linear-oblong, thick.
- **Androecium:** Stamens indefinite, polyadelphous, introse; anthers 2-celled, dorsifixed.
- **Gynoecium:** Multicarpellary, syncarpous, ovary globose, multilocular, axile placentation.
- **Fruit:** Berry, a hesperidium, ovoid bright yellow, leathery, replate with juice.

Flowering and Fruiting Time: September-October

Significance: Planted for fruits.



75. *Ziziphus mauritiana* Lam.

Botanical Name:

Synonyms: *Ziziphus jujuba* (L.) Gaertn. non Mill., *Rhamnus jujuba* L.

Common Name: Common Jujube, Indian Jujube, Bor jo zad, bodri, Bor, બોરડી, બોર

Plant Family: RHAMNACEAE

Occurrence (Special Areas): Commonly planted for berries.

Habit and Plant Form: A small or medium sized subtropical much branched tree.

Leaves: Alternate, simple, ovate, petiolate, strongly 3 nerved, convergent, stipules spiny.

Inflorescence: Axillary dense fascicled cymes.

Flowers: Greenish-yellow, small, complete, actinomorphic, perigynous or epigynous.

- **Calyx:** Sepals 5, gamosepalous, valvate.
- **Corolla:** Petals 5, polypetalous, inserted on the calyx tube forming a hypanthium.
- **Androecium:** Stamens 5, opposite and enclosed by petals & longer than petals.
- **Gynoecium:** Carpels 2, syncarpous, ovary immersed in the disc, basal placentatio.
- **Fruit:** Drupe, glabrous, edible, reddish yellow when ripe, woody.

Flowering and Fruiting Time: December-April

Significance: Ber is, popular for its small berries-fruit. It grows wild in forests and also on wastelands



76. *Vitex negundo* L.

Botanical Name: *Vitex negundo* L.

Synonyms: *Vitex trifolia* Gr.

Common Name: Nagod, Nigodzo Zad, ନାଗଲ

Plant Family: VERBENACEAE

Occurrence (Special Areas): Planted in many areas for medicinal purpose and ornamental plant species for small blue flowers and evergreen.

Habit and Plant Form: A large erect shrubs or small slender tree.

Leaves: Cauline & ramal, opposite, 3 and 5 foliolate compound, leaflets with petiolule.

Inflorescence: Axillary solitary racemes.

Flowers: Violet-purple, complete, zygomorphic, hypogynous, cyclic, Bracteate.

- **Calyx:** Sepals 5, gemosepalous, imbricate, membranous, triangular, acute, equal.
- **Corolla:** Petals 5, pale-purple, gamopetalous, tubular, imbricate, bi-lipped, ovate.
- **Androecium:** Stamens 4, didynamous, polyandrous, epipetalous, inserted, dorsifixed.
- **Gynoecium:** Bicarpellary, syncarpous, numerous ovules, stigma 2-lamellate, pilose.
- **Fruit:** Capsule, valved, glabrous, smooth, seed oblong-quadrangular, black, smooth.

Flowering and Fruiting Time: Dec. – Apr.

Significance: Leaves use in joint problem.



77. *Ziziphus glabrata* (B. Heyne ex Schult.) B. Heyne ex Wight & Arn.

Botanical Name: *Zizyphus glabrata*. Heyne ex Roth

Synonyms: *Ziziphus trinervia* Roxb. non Roth.

Common Name: Mota Bordi, મોટી બોરડી

Plant Family: RHAMNACEAE

Occurrence (Special Areas): Not common, very few trees recorded in Bhuj- Lalan College

Habit: A small tree.

Leaves: Simple, alternate, asymmetrical, convergent; stipule filiform, glabrous, 3-ribbed.

Inflorescence: Axillary fascicled cymes.

Flowers: Greenish-yellow, small, complete, bisexual, actinomorphic, perigynous.

- Calyx 5, pubescent outside, triangular, keeled within, deflexed, valvate;
- Petals 5, obovate; disc 10 lobed, entire
- Stamens 5, opposite to and enclosed in the petals and usually longer than them; filaments flattened;
- Ovary embedded in the disc, 2-celled, ovule solitary; styles 2, connate upto the middle; stigma 2., Fruits are yellowish-orange and larger than common ber.

Flowering and Fruiting Time: Aug.-Apr.

Significance: Planted for berries and like by many insects, bees, birds and small mammals.



78. *Cocos nucifera* L.

Botanical Name: *Cocos nucifera* L.

Common Name: Nariyel, Coconut Palm, Kalpavriksha, ನಲ್ಲಿಯೆರ

Plant Family: ARECACEAE (PALMAE)

Plant Form: Monoecious tree.

Occurrence (Special Areas): Planted for fruits in many bungalows, temples, offices etc.

Habit: Palm (Columnar), growing to 30 m tall, trunk smooth.

Leaves: A large with pinnate leaves 4-6 m long, pinnae 60-90 cm long, petioles 1-2 m long.

Inflorescence: spadix; polygamomonoecious (male and female flowers in same inflorescence)

Flowers: Small, unisexual, actinomorphic, incomplete.

- **Male Flower:** unsymmetric.
- **Perianth:** Tepals 6, in 2 series free, valvate.
- **Androecium:** Stamens 6, polyandrous, anther versatile, linear, erect, 2-celled.
- **Female Flower:** larger than male, ovoid, supported by broad bracteoles.
- **Perianth:** Tepals 6, in 2 series, imbricate, free.
- **Gynoecium:** Ovary 3-celled, style short.
- **Fruit:** Drupe, pericarp thick & fibrous, endocarp bony with 3 basal pores.

Flowering and Fruiting Time: Throughout the year

Significance: Mainly planted for fruits.



79. *Eucalyptus globulus* Labill.

Botanical Name: *Eucalyptus globulus* Labill.

Common Name: Nilgiri, Blue Gum, Eucalypt, Tasmanian blue gum, Yukali, नीलगिरी

Plant Family: MYRTACEAE

Occurrence (Special Areas): Planted for ornamental purpose, offices, bungalows etc.

Plant Form and Habit: Large tree up to 45 m. Outer bark light brown.

Leaves: Leaves lanceolate, falcate, coriaceous, more or less sessile, amplexicaul, ovate.

Inflorescence: solitary.

Flowers: Axillary, solitary white to cream colored, sessile,

Calyx: Operculum flattened, with a distinct central knob, sepals and petals are united.

Fruit: Sessile or shortly stalked, sometimes more distinct ribs; disc broad, Seeds flattened.

Flowering and Fruiting Time: September-December

Significance: Wood use for construction, fence posts and poles. Leaves and wood also use for oil and medicinal purposes.



80. *Carica papaya* L.

Botanical Name: *Carica papaya* L

Common Name: Papaya, Papas, Papita, पपैया

Plant Family: CARICACEAE

Occurrence (Special Areas): Planted for fruits.

Plant Form and Habit: An erect branchless trunk, monoecious tree with milky sap.

Leaves: Alternate & crowded near the apex of stem, petiole long deeply incised and lobed.

Inflorescence: Clustered on panicles, female inflorescences are one to three-flowered.

Flowers: flowers are fleshy, waxy and fragrant, white and small, Bisexual and unisexual

- **Male flower:** Calyx 5 lobed, small, petals 5, united into a slender tube, lobes valvate.
- **Androecium** Stamens 10 in two whorls at different levels on the petals, erect, introrse.
- **Female flower:** Calyx as in male, petals free, ovary superior, sessile, one celled.
- **Fruit:** A big fleshy berry, **Seeds:** Many, black ovoid, endosperm and aril present.

Flowering and Fruiting Time: Throughout the year.

Significance: Leaf extracts used for curing Dengue fever along with *Tinospora* juice.



81. *Thespesia populnea* (L.) Sol. ex Corrêa

Botanical Name: *Thespesia populnea* (L.) Sol. ex Corrêa

Synonyms: *Hibiscus populneus*, *Abelmoschus acuminatus*, *Hibiscus blumei*

Common Name: Portia Tree, Bhendi tree, Seaside Mahoe, Paras Piparo, पारस पीपली

Plant Family: MALVACEAE

Occurrence (Special Areas): Planted mainly in Temples, wildereness habitats like Sahyog Van, Offices etc.

Habit and Plant Form: An evergreen bushy tree.

Leaves: Heart-shaped, alternate, margin entire, 5-7 prominent nerves.

Inflorescence: Pendulous, axillary, solitary.

Flowers: Yellow, complete, actinomorphic, hypogynous, pentamerous, hypanthium discoid.

- **Epicalyx:** Involucral bracts 0 or 3-5, deciduous.
- **Calyx:** Sepals 5, gamosepalous, persistent, covered with minute peltate scales.
- **Corolla:** Petals 5, polyandrous, adnate to the staminal column, twisted, yellow.
- **Androecium:** Stamens indefinite, monodelphous, forming a staminal
- **Gynoecium:** Multicarpellary, overy syncarpous, 5-locular, entire, axile placentation.
- **Fruit:** Capsule, surrounded at the base by persistent calyx.

Flowering and Fruiting Time: Throughout the year

Significance: Ornamental plant species, evergreen with large yellow flowers. Latex use on skin problems like ring worm etc.



82. *Nyctanthes arbor-tristis* L.

Botanical Name: *Nyctanthes arbor-tristis* L.

Common Name: Parijatak, Night Jasmine, Har Singar, Tree of Sadness, परिजातक

Plant Family: OLEACEAE

Occurrence (Special Areas): Mainly planted for beautiful white-orange flowers and in temples, bungalows for religious purposes.

Habit: Small tree or shrub

Leaves: leaves are rough and hairy, opposite, Simple, exstipulate

Inflorescence: Terminal cymose clusters.

Flowers: Small, attractive with white petals and an orange-red tube in center, fragrant.

- **Calyx:** Bell-shaped sometimes cylindrical with 4-10 lobes, gamosepalous, inferior.
- **Corolla:** Gamopetalous, tube slender, 4-10 lobed, corolla with an orange-red centre.
- **Androecium:** Stamens 2, epipetalous, bithecous, anther oblong, filaments short.
- **Gynoecium:** Bicarpellary, syncarpous, bilocular, superior, 2 ovules in each loculus.
- **Fruit:** Flat, brown, heart-shaped fruit with 2 sections each containing a single seed.

Flowering and Fruiting Time: September-April

Significance: Used for worship. Mainly use for Arthritis and Cytica problems.



83. *Thevetia peruviana* (Pers.) Merrill / *Cascabela thevetia* (L.) Lippold

Botanical Name: *Thevetia peruviana* (Pers.) Merrill

Synonyms: *Cascabela thevetia* Juss. Ex. Steud.

Common Name: Pili Karen, *Kaneir* or *Kaner*, પીળી કરેણ

Plant Family: APOCYNACEAE

Occurrence (Special Areas): Commonly planted in Bhuj and poisons plant species.

Plant Form and Habit: Large shrub or small tree, milky latex present.

Leaves: leaves are willow-like, linear-lanceolate, and glossy green in color.

Inflorescence: In axillary cymes.

Flowers: Bright yellow, complete, actinomorphic, pentamerous, hypogynous, pedicellate.

- **Calyx:** Sepals 5, polysepalous, quincuncial, green, persistent.
- **Corolla:** Petals 5, gamopetalous, infundibulum, yellow coronary outgrows present.
- **Androecium:** Stamens 5, polyandrous, epipetalous, inserted, sagitate.
- **Gynoecium:** Bicarpellary, ovary syncarpous, axile placentation, nectariferous.
- **Fruit:** Drupe, ellipsoid – oblong, obscurely 5 – angled, glabrous.

Flowering and Fruiting Time: Throughout the year.

Significance: Poisons plant species. Planted as an ornamental plant, and as large flowering shrub or small ornamental tree standards in gardens and bungalows.



84. *Tecoma stans* (L.) Kunth

Botanical Name: *Tecoma stans* (L.) Juss. ex Kunth

Synonyms: *Stenolobium stans*

Common Name: Yellow bells, Trumpet-flower, Yellow Elder, Pili Limdi, Soneri, सोनेरी

Plant Family: BIGNONIACEAE

Occurrence (Special Areas): Ornamental shrub for yellow flowers and fast growing.

Habit: Glabrous small tree or shrub

Leaves: Opposite imparipinnately compound, serrate, acuminate, exstipulate

Inflorescence: Terminal, erect, often drooping, corymbose racemes.

Flowers: Bright-yellow, hermaphrodite, hypogynous, zygomorphic, complete.

- **Calyx:** Sepals 5, gamosepalous.
- **Corolla:** Petals 5, gamopetalous, tubular, imbricate, yellow, limb 2-lipped.
- **Androecium:** Stamens 4, included; anthers cells divergent.
- **Fruit:** Capsule, pale-to-dark brown, beaked, narrowly linear, flat, acute, brown.

Flowering and Fruiting Time: Throughout the year

Significance: Fast growing species



85. *Tecoma fulva*

Synonyms: *Bignonia fulva*

Common Name: Pili Limdi, Soneri Ni Jat, Cahuato

Plant Family: BIGNONIACEAE

Plant Form: Shrub or small tree

Occurrence (Special Areas): Planted for ornamental species and fast-growing in nature

Habit: An Erect shrub / Tree

Leaves: Pinnately Compound with about 12 leaflets, leaflets are stalkless, toothed margin.

Inflorescence: Terminal Racemes

Flowers: Reddish yellow, funnel-shaped, slightly curved.

- **Calyx:** Sepals 5, gamosepalous, tubular-campanulate, subequally toothed.
- **Corolla:** Reddish -yellow, 5 nearly equal rounded petals.
- **Androecium:** Stamens 4, epipetalous, polyandrous, exserted, inserted on corolla.
- **Gynoecium:** Bicarpellary; ovary syncarpous, numerous ovules axile placentation.
- **Fruit:** Capsule, flat, 2-valved, valves thin & opening loculicidally, Seeds winged.

Flowering and Fruiting Time: August to May

Significance: Ornamental fast-growing species



86. *Salvadora alii* Rajput & Syeda

Botanical Name: *Salvadora alii*

Common Name: Pilu- Vero, White-Berry Toothbrush Tree, ખારી જાર-પીલું

Plant Family: SALVADORACEAE

Occurrence (Special Areas): Not Common species, only few numbers recorded near Changleshwar temple area.

Habit and Plant Form: An evergreen tree, or bushy shrubs or small trees, scandent.

Leaves: Simple, opposite-decussate, lanceshaped, leathery, hairless, 3-nerved, stipules ovate.

Inflorescence: A compound, lax panicle, axillary or terminal.

Flowers: bisexual, actinomorphic, pedicelate, bracts minute, caducous, green and acute at apex.

- **Calyx:** Sepal-cup 4-lobed; lobes rounded, thick, greenish.
- **Corolla:** Petals 4-petalled; petals oblong, obtuse, deeply cleft, inflexed, persistent.
- **Androecium:** Stamens are 4, free, exserted
- **Gynoecium:** Ovary globular,
- **Fruit:** A berry, spherical, smooth, greenish, white when ripe; seed 1.

Flowering and Fruiting Time: December -April.

Significance: Tooth brush tree and useful for many insects, birds etc.



87. *Ficus amplissima* J.E. Smith

Botanical Name: *Ficus amplissima* J.E. Sm

Synonyms: *Ficus indica* Willd., *Ficus pseudotsiela*, *Ficus tsiela* Roxb.

Common Name: Pipadi, Yellow-barked Fig, Pimpri, Pimpal, പ്പുറ്റി

Plant Family: MORACEAE

Occurrence (Special Areas): Planted along road side, in gardens, wildereness areas etc.

Habit: a large evergreen or semi-deciduous tree, thornless, exudes a milky white latex

Leaves: Cauline & ramal, alternate, ovate entire margin, 3-nerved from base.

Inflorescence: Axillary, geminate, deep-orange-red, Hypanthodium.

Flowers: Unisexual, monoecious, sessile, incomplete, actinomorphic.

- **Male Flower:** Numerous near the mouth of receptacle, staminate.
 - **Perianth:** Tepals 3-5, lanceolate, shortly connate, brownish, margin scarios
 - **Androecium:** Stamens solitary, included, parallel, unequal
 - **Female flower:** sessile.
 - **Gynoecium:** Bicarpellary, bean shaped, white. **Gall flower:** same as female ones.
- Fruit:** Achemes smooth, ovoid.

Flowering and Fruiting Time: Receptacles; for the best part of year.

Significance: The leaves and branches of *F. amplissima* are used as fodder for cows, goats, and sheep. Leaves sap use to cure soriasis problem.





88. *Ficus religiosa* L.

Botanical Name: *Ficus religiosa* L.

Synonyms: *Ficus peepul* Griff.

Common Name: Pipado, Peepal Tree, Sacred Fig, Pipul, Sacred bo tree, ଓଈ ଧିଧାଲି

Plant Family: MORACEAE

Occurrence (Special Areas): Commonly planted in temples, offices and road side.

Habit: An evergreen or deciduous tall tree

Leaves: Alternate, spirally arranged, glossy, coriaceous (leathery), tail-like tips.

Inflorescence: Figs, axillary, sessile, smooth, ripening to purple with red dots.

Flowers: axillary sessile, unisexual

- **Male flower:** few, only near the mouth of some receptacles; sessile.
- **Perianth:** Tepals 2, polytepalous, broadly ovate – lanceolate.
- **Androecium:** Stamen 1, ovate – rotund.
- **Female flower:** sessile. **Perianth:** Tepals 3-4, free, linear – lanceolate, brownish.
- **Gynoecium:** Oblong, red – brown. **Gall & fertile flower:** sessile or pedicellate.
- **Fruit:** Achemes smooth, minute, ovoid, brown.

Flowering and Fruiting Time: Receptacles Dec – May.

Significance: Religious tree and use for many medicinal purposes. Leaves to cure bleeding issues in women.



89. *Tecomella undulata* (Sm.) Seem.

Botanical Name: *Tecomella undulata* (Sm.) Seem.

Synonyms: *Tecoma undulate* G. Don, *Bignonia undulate* Sm.

Common Name: Ragat Rohido, Roheda, Honey Tree, Desert Teak, Marwar Teak, रागत रोहीडो

Plant Family: BIGNONIACEAE

Occurrence (Special Areas): Few trees recorded in Bhuj- College Road, Ghanshyam Nagar

Habit: A deciduous or nearly evergreen tree of desert or dry regions.

Leaves: Opposite, simple, narrowly oblong, obtuse, entire, petioles very short.

Inflorescence: corymbose raceme, at the ends of short lateral branches.

Flowers: orange-yellow, complete, hermaphrodite, zygomorphic, hypogynous.

- **Calyx:** Sepals 5, gamosepalous, campanulate, subequally toothed, mucronate.
- **Corolla:** Pale orange-yellow, campanulate, ventricose with a wide mouth 2-lipped.
- **Androecium:** Stamens 4, epipetalous, polyandrous, exserted, inserted, disk cupular.
- **Gynoecium:** Bicarpellary, ovary syncarpous oblong, axile placentation.
- **Fruit:** Capsule, flat, smooth, 2-valved, valves thin, opening loculicidally, winged seeds.

Flowering and Fruiting Time: **FLS:** Dec-Apr. **FRS:** Feb-Apr.

Significance: Use for blood purification and on swelling. Wood is excellent for many resources, firewood and charcoal. Cattle and goats eat leaves of the tree. Camels, goats and sheep consume flowers and pods.





Tecomella undulata (Sm.) Seem.

90. *Parkinsonia aculeata* L.

Botanical Name: *Parkinsonia aculeata* L.

Common Name: Ram babul

Plant Family: LEGUMINOSAE **Sub Family:** CAESALPINIACEAE

Occurrence (Special Areas): Commonly planted in Bhuj- Lalan college, Societies etc.

Habit: A shrub or a small tree.

Leaves: Simple pinnate and fascicled, pinnae 2 or 3 pairs, leaflets numerous, minute, ovate.

Inflorescence: Axillary, lax terminal racemes.

Flowers: yellow and fragrant, complete, zygomorphic, pentamerous, peri-or hypogynous.

- **Calyx:** Sepals 5, gamosepalous, disc-lined, tubular, tube short, imbricate.
- **Corolla:** petals 5, yellow, polypetalous, somewhat unequal.
- **Androecium:** Stamens 10, polyandrous, filaments unequal, versatile.
- **Gynoecium:** Monocarpellary, sessile, shortly stalked, stigma simple terminal style.
- **Fruit:** Pods, linear, reticulate, finally dehiscent Seeds 2-7, dark-brown.

Flowering and Fruiting Time: Jan. – May.

Significance: Drought resistance and fast-growing species.



91. *Manilkara hexandra* (Roxb.) Dubard.

Botanical Name: *Manilkara hexandra* (Roxb.) Dub.

Synonyms: *Mimusops hexandra* Roxb.

Common Name: Rayan, రిశ్శి

Plant Family: SAPOTACEAE

Occurrence (Special Areas): Planted in many areas- Lalan College, Sahyog Van, Gardens etc.

Habit and Plant Form: An evergreen, glabrous tree.

Leaves: Alternate, broadly obovate, rounded apex, subacute at base, coriaceous, glabrous.

Inflorescence: Axillary solitary.

Flowers: Creamy–white, small, numerous, actinomorphic, complete, trimerous, hypogynous.

- **Calyx:** Sepals 6 in 2 whorls, thick, flat, acute.
- **Corolla:** Petals 18, gamopetalous, white, brownish red when dry, valvate tube.
- **Androecium:** Stamens 16 in 2, alternating with staminodes, epipetalous.
- **Gynoecium:** Carpels 12, ovary syncarpous, small capitate stigma.
- **Fruit:** Berries, oblong, ovoid, smooth, with plenty of latex, yellow when ripe

Flowering and Fruiting Time: FLS: Sep. – Oct.

FRS: Nov. – Apr.

Significance: The wood is hard, durable, and heavy.



92. *Delonix elata* (L.) Gamble

Botanical Name: *Delonix elata* (L.) Gamble.

Synonyms: *Poinciana elata* L.

Common Name: Sandesaro- Safed Gulmahor, White Gulmohar, White Poincian

Plant Family: LEGUMINOSAE **Sub Family:** CAESALPINIACEAE

Occurrence (Special Areas): Few trees recorded in Bhuj

Habit and Plant Form: An erect tree, 6-10 m tall, with ash-colored bark.

Leaves: Bi-pinnately compound, leaflets 10-20 pairs, stalkless, opposite, stipules caduceous.

Inflorescence: Terminal, few-flowered corymbiform racemes.

Flowers: white in the beginning, stalks hairy, complete, zygomorphic, pentamerous.

- **Calyx:** Sepals 5, gamosepalous, tubular, deeply cleft, valvate, coriaceous.
- **Corolla:** Petals 5, polypetalous, imbricate, cream, becoming yellow, shortly clawed.
- **Androecium:** Stamens 10, polyandrous, much exserted, anthers uniform, linear.
- **Gynoecium:** Monocarpellary, ovary flat, many ovules on marginal placentation.
- **Fruit:** Pods pale to dark-brown, flat, thin, dehiscent, horned, grooved. seeds 4-8.

Flowering and Fruiting Time: All year.

Significance: Ornamental fast growing tree species





Delonix elata (L.) Gamble.

93. *Alstonia scholaris* (L.) R.Br.

Botanical Name: *Alstonia scholaris* (L.) R.Br.

Common Name: Devil Tree, Shaitaan wood Tree, Seven leaved tree, saptaparni, सप्तपर्णी

Plant Family: APOCYNACEAE

Occurrence (Special Areas): Commonly planted along road side and fast-growing species.

Habit: Trees, with high bitter milky juice & glabrous.

Leaves: Whorled with 4-7 unequal leaves; elliptic, coriaceous, glaucous.

Inflorescence: Terminal and lateral, umbellately branched many flowered.

Flowers: Greenish-white, complete, bisexual hermaphrodite, actinomorphic, hypogynous.

- **Calyx:** Sepals 5, pubescent, cupular, eglandular inside, imbricate, acute.
- **Corolla:** Petals 5, gamopetalous, the mouth with a ring of hairs, pubescent, acute.
- **Androecium:** Stamens 5, inserted near the top of the corolla tube.
- **Gynoecium:** Bicarpellary, marginal placentation.
- **Fruit:** Follicles 2, cylindric, pendulous in clusters, seeds many.

Flowering and Fruiting Time: June-January

Significance: The flowers are very fragrant and pollens are allergic. Used in fever.



94. *Morus alba* L.

Botanical Name: *Morus alba* L.

Common Name: White Mulberry, Mulberry, Shetur, सड़ेड शेतूर

Plant Family: MORACEAE

Occurrence (Special Areas): Few trees planted in bungalows

Habit: A fast-growing, monoecious or dioecious tree, small to medium-sized mulberry tree.

Leaves: Alternate, serrate, acute, membranous, base cordate, margin toothed, stipulate.

Inflorescence: Axillary, shortly pedunculate spikes (catkin).

Flowers: Purple, sessile, incomplete, monoecious, actinomorphic, unisexual, tetramerous.

- **Male flower:** Staminate. **Perianth:** Tepals 4 in two whorls, polytepalous, imbricate.
- **Androecium:** Stamen 4, opposite the sepals; filaments long, ditheous, basifixed.
- **Female flower:** pistillate, hypogynous. **Perianth:** as in males except persistent.
- **Gynoecium:** Bicarpellary; Ovary syncarpous unilocular with one pendulous ovule.
- **Fruit:** Sorosis, cylindric, dark purple or black, edible.

Flowering and Fruiting Time: FLS & FRS: July – Dec.

Significance: The seeds are widely dispersed in the droppings of birds that eat the fruit.

Comments / notes: Often cultivated. Leaves used for feeding silkworms.





95. *Gmelina arborea* Roxb.

Botanical Name: *Gmelina arborea* Roxb.

Common Name: Sevan, सेवन, सवन

Plant Family: VERBENACEAE

Occurrence (Special Areas): Not common, planted in Bungalows, offices, temples as sacred trees, fast-growing species with medicinal properties.

Habit: A moderate-sized unarmed deciduous tree

Leaves: Opposite, broadly ovate-cordate, subcoriaceous, acuminate, entire,

Inflorescence: Terminal panicles formed of small 3 flowered cymes.

Flowers: Yellow, complete, zygomorphic, hermaphrodite, hypogynous, cyclic.

- **Calyx:** Sepals 5, gamosepalous, valvate, campanulate, small, triangular, acute.
- **Corolla:** Brownish-yellow, petals 5, gamopetalous, infundibuliform, 2-lipped.
- **Androecium:** Stamens 4, didynamous, polyandrous, epipetalous, inserted
- **Gynoecium:** Tetracarpellary, ovary syncarpous, 4 locular, stigma shortly 2-fid.
- **Fruit:** Drupes, smooth, orange-yellow when ripe, succulent, endocarp bony.

Flowering and Fruiting Time: **FLS:** Jan. – Apr., **FRS:** Apr. – May

Significance: Important tree to relieve *Vastu* Dos. Control on the burning sensation relate to legs and hands. The tree has suitable characteristics for agroforestry, with fast growth, ease of establishment and relative freedom from pests outside its natural range.



96. *Casuarina equisetifolia* L.

Botanical Name: *Casuarina equisetifolia* L.

Synonyms: *Casuarina litorea* L.

Common Name: Sharu, She-Oak, Casuarine Wood Tree, ຊຸຮ

Plant Family: CASUARINACEAE

Occurrence (Special Areas): Commonly planted in and around the developmental projects, many offices, bungalows etc., Fast-growing and drought resistant species.

Habit: A conifer-like, evergreen, leafless, dioecious tree with drooping dimorphous branches

Leaves: Reduced to scales in whorls, alternating with ribs of upper node

Inflorescence: Male in terminal, monoandrous spikes; female axillary, shortly stalked.

Flowers: Incomplete, unisexual, zygomorphic.

- **Male flower:** Staminate. **Perianth:** Tepals 2, lanceolate, scarious, thinly ciliate.
- **Androecium:** Stamen 1, inflexed in bud, ends pointed.
- **Female flower:** Pistillate; bracts & bracteoles persistent, enclosing the fruit.
- **Gynoecium:** Monocarpellary, Ovary unilocular with 2 ovules on basal palcentation.
- **Fruit:** Carpophores, brown, enclosing several compressed narrowly winged nutlets.

Flowering and Fruiting Time: Throughout the year.

Significance: Fast-growing ornamental tree species and also pruned as required for live fencing or any other purposes.



97. *Caryota urens* L.

Botanical Name: *Caryota urens* L.

Common Name: Fishtail Palm, Jaggery Palm, Toddy Palm, Wine Palm, Shivjata, ଶିବଜାଟା

Plant Family: ARECACEAE

Occurrence (Special Areas): Few sites recorded with this species- mainly Colleges, Temples, Bungalows etc.

Habit and Plant Form: A fast-growing feather palm and tree form.

Leaves: Leaf shape that resembles the lower fin of a fish, bipinnately compound.

Inflorescence: Long compound spadix with drooping branches;

Flowers: Monoecious, sessile, incomplete, actinomorphic, unisexual, trimerous, cyclic.

Male Flower: Symmetric, staminate, buds narrowly cylindrical.

- **Perianth:** Tepals 6, in 2 series valvate; inner tepals larger than sepals, reddish.
- **Androecium:** Stamens 40 about, free, white, short, anther versatile, 2-celled.

Female Flower: Pistillate, smaller than male.

- **Perianth:** Same as male, valvate.
- **Androecium:** reduced to staminodes; usually 3.
- **Gynoecium:** Tricarpellary, trigonous, stigma sessile, 3-lobed.
- **Fruit:** Reddish, pericarp acrid & stinging, crowned by stigma.

Flowering and Fruiting Time: December-August

Significance: Planted for ornamental tree species.



98. *Couroupita guianensis* Aublet

Botanical Name: *Couroupita guianensis* Aubl.

Common Name: Cannon-ball Tree, Tope gola, shivlingi, શિવલિંગી

Plant Family: LECYTHIDACEAE

Occurrence (Special Areas): Few trees recorded in Bhuj mainly in temples and bungalows.

Habit: Large deciduous tropical tree.

Leaves: Long, simple with serrate margin

Inflorescence: Racemes which is cauliflorous

Flowers: Yellow, reddish and pink flowers are stunning fragrant.

Fruit: large globose woody fruits, cannonballs hanging in clusters, small seeds.

Flowering and Fruiting Time: Throughout the year

Significance: The sivalingam shape is visible at the center of the flower and snake shaped pollen is the specialty of this flower and it has very good fragrance. This rare flower can be used for Shiva Pooja. Planted in gardens and around temples for its fragrant flowers.



99. *Grevillea robusta* A. Cunn. ex R. Br.

Botanical Name: *Grevillea robusta* A. Cunn. ex R. Br.

Common Name: Silver Oak, Southern silky oak, silky oak, silver oak, સિલ્વર ઓક

Plant Family: PROTEACEAE

Occurrence (Special Areas): Not common in Bhuj, planted in Bungalows and Gardens

Habit and Plant Form: A fast-growing evergreen tree with a single main trunk.

Leaves: Leaves are fern-like, wide and divided with between 11 and 31 main lobes.

Inflorescence: Long panicles.

Flowers: arranged in one-sided, yellowish orange, or sometimes reddish, showy.

Fruit: glabrous follicle.

Flowering and Fruiting Time: FLS: Mar-May.

Significance: Mainly planted as ornamental tree species.



100. ***Samanea saman* (Jacq.) Merr.**

Botanical Name: *Samanea saman* (Jacq.) Merr.

Synonyms: *Albizia saman*, *Acacia propinqua*, *Mimosa saman* Jacq.

Common Name: Rain Tree, Sleepy-faced Tree, Cow tamarind, Monkeypod,

Plant Family: LEGUMINOSAE **Sub Family:** MIMOSACEAE

Occurrence (Special Areas): Few trees recorded in Bhuj, mainly in Temples

Habit: Tree with yellowish–tomentose branchlets

Leaves: Alternate, bipinnately compound, pinnae 4-6 pairs, leaflets 3-8 paired.

Inflorescence: Heads in terminal or axillary

Flowers: puffs of pink flowers

- **Calyx:** Tube-shaped calyx and a tiny, tube elongate; lobes 5 ovate, valvate.
- **Corolla:** Basally united, densely pubescent, imbricate.
- **Androecium:** Stamens infinite, monodelphous, apex pinkish, base white.
- **Gynoecium:** ovary stipitate, glabrous, unilocular, stigma minute.
- **Fruit:** Pods, black, indehiscent with a sweet pulp around the seeds.

Flowering and Fruiting Time: January-July

Significance: Ornamental tree for beautiful pink flowers clusters.



101. *Annona squamosa* L.

Botanical Name: *Annona squamosa* L.

Common Name: Custard Apple, Sugar apple, Sweet sop, Sweetsop-Anon, सीताफल

Plant Family: ANNONACEAE

Occurrence (Special Areas): Mainly planted in Wadis, Gardens and Bungalows

Habit: A small tropical deciduous tree.

Leaf: Simple, alternate, exstipulate, entire, oblanceolate, obtuse.

Inflorescence: Axillary, two or more flowers arise in the axil of each leaf.

Flower: Bracteate, hermaphrodite, complete, actinomorphic, spirocyclic, hypogynous.

- **Calyx:** Sepals 3, polysepalous, united at the base, valvate.
- **Corolla:** Petals 3, greenish – yellow, polypetalous, fleshy, pale-yellow, valvate.
- **Androecium:** Stamens numerous, spirally arranged on a conical receptacle, adnated.
- **Gynoecium:** Multicarpellary, apocarpous, spirally arranged, superior
- **Fruit:** An etario of berries, pulp denser & sweeter, 1-seeded, brownish seed.

Flowering and Fruiting Time: March-December

Significance: Planted for fruits, and use in many sweets, milk shakes- *basundi* etc. Fruits are good against acidity as felling cool.



102. ***Borassus flabellifer* L.**

Botanical Name: *Borassus flabellifer* L.

Common Name: Tadi, Taltar, Tal, Tari, Thoddy Palm

Plant Family: ARECACEAE

Plant Form: Palm (Columnar)

Occurrence (Special Areas): Planted for ornamental

Habit: A large Unarmed tree.

Leaves: leathery, gray green, fan-shaped, lanceolate, strong, stalks, edged with hard spines.

Inflorescence: Spadix, dioecious, branched, cylindrical in male & simple in female.

Male Flower: Minute, creamy-white, sessile, incomplete, actinomorphic, unisexual.

- **Perianth:** Tepals 6, in 2 whorls, twisted, obovate-spathulate.
- **Androecium:** Stamens 6, in 2 whorls polyandrous, filaments short, versatile, 2-celled.
- **Gynoecium:** Reduced to small, bristly pistillodes.

Female Flower same as male except pistillate, large, globose.

- **Perianth:** as in male but differs in having outer tepals reniform, imbricate.
- **Gynoecium:** Tricarpellary, ovary globose, apicarpous, stigma 3 uncinata, sessile.
- **Androecium:** Reduced to 6-9 staminodes. **Fruit:** Drupes yellow when ripe.

Flowering and Fruiting Time: February-August

Significance: Used as a natural shelter by birds, bats etc. The sap from the palm is extracted and used as a fermented beverage locally (Taddy).



103. ***Peltophorum pterocarpum* (DC.) K. Heyne**

Botanical Name: *Peltophorum pterocarpum* (DC) K. Heyne

Synonyms: *Peltophorum ferrugineum* (Decne.) Benth.; *Peltophorum roxburghii* (G. Don) Degener

Common Name: Yellow Poinciana, The Copper Pod, Copper pod tree, ດຳມຸນຊຸ່ນ

Plant Family: LEGUMINOSAE **Sub Family:** CAESALPINIACEAE

Occurrence (Special Areas): Very common planted along road sides, gardens and other areas in Bhuj

Habit: A Densely foliaceous evergreen trees.

Leaves: Double-compound, alternate, prickly, 12-20 pairs of sidestalks, 20-30 pairs of leaflets.

Inflorescence: Terminal & axillary reddish-brown panicles.

Flowers: golden yellow, mildly fragrant.

- **Calyx:** Sepals 5, with a short tube, gamosepalous, rose coloured, slightly unequal,
- **Corolla:** Petals 5, yellowish-white, slightly unequal, as long as calyx, hairy at base.
- **Androecium:** Stamens 10, filaments villous.
- **Fruit:** Pods dark-brown, woody, long with 1-3 seeds.

Flowering and Fruiting Time: March-December

Significance: Useful shade and fast-growing tree.



104. ***Thuja- Morpinchh***

Common Name: Thuja- Morpinchh- Vidhya, મોર પીંછ, વિદ્યા

Plant Form: Small tree or shrub, Bushlet

Occurrence (Special Areas): Planted mainly in Temples and Bungalows for ornamental.



105. ***Ravenala madagascarensis* Sonnert.**

Synonyms: *Strelitzia reginae* and *Strelitzia nicolai*

Common Name: Travellar Palm

Plant Family: STERLIZIACEAE

Plant Form: Tree

Occurrence (Special Areas): Not common and planted in few areas- Lalan College

Leaves: Fan shape aligned in a single plane with long petiole



106. ***Ficus racemosa* L.**

Botanical Name: *Ficus racemosa* L. **Synonyms:** *Ficus glomerate* Roxb., *Ficus lucescens*

Common Name: Umaro, Cluster Fig, Country Fig, Gular Fig, Gular, Umbaro, ઊમરો

Plant Family: MORACEAE

Occurrence (Special Areas): Planted in many areas as fast-growing fruit bearing evergreen tree, Wildereness landscape like Sahyog Van, Shivnagar Van, Gardens etc.

Habit and Plant Form: An evergreen tree without aerial roots having white – pilose branchlets.

Leaves: Evergreen leaves, alternate, ovate, blade glaucous above, margin entire, apex acute.

Inflorescence: Red receptacles, monoecious, ovoid, fig wall thick, soft.

Flowers: Unisexual, monoecious, sessile, incomplete, actinomorphic

- **Perianth:** Tepals 3-5, scarious, lacerate, acute.
- **Male flower:** Stamen 2, exserted, oblong, parallel.
- **Female flower:** sessile. Ovary sessile or shortly stalked, brownish
- **Gall flower:** Similar to female flower except having long stalk & long style.
- **Fruit:** Red, furry figs in short clusters, which grow directly out of the trunk of the tree.

Flowering and Fruiting Time: Throughout the year

Significance: Bark use against many skins problem. Fruits are like by insects, birds and small mammals.



107. *Ficus benghalensis*L.

Botanical Name: *Ficus benghalensis* L.

Common Name: Banyan Tree, Vad, Bargad, ँS

Plant Family: MORACEAE

Occurrence (Special Areas): Commonly planted with larger areas availabilities- Gardens and Common Places- Societies etc.

Habit and Plant Form: An evergreen tree sending down many aerial roots.

Leaves: 3-5-nerved, Alternate, Simple, Ovate, Obtuse, Base Rounded, Leaf Margin Entire.

Inflorescence: Axillary hypanthodium, deep-orange-red, globose.

Flowers: Unisexual, monoecious, sessile, incomplete, actinomorphic.

Fruit: Globose-ellipsoid achene, dark brown.

Flowering and Fruiting Time: Fruiting throughout the year.

Significance: Use as toothbrush to cure teeth problems as well as mouth odor. Many insects and birds use this tree as a shelter as well as feeding on fruits. This is the national tree of India. The tree is considered sacred in India, and temples are often built nearby. Due to the large size of the tree's canopy, it provides useful shade in hot climates.



108. *Ixora pavetta* Andr

Botanical Name: *Ixora arborea* Roxb. ex. Sm. **Synonyms:** *Ixora decipiens*, *Ixora arborea*

Common Name: White Ixora, Naver, Rai-kudd, ຍັດຊີເຣ

Family: RUBIACEAE

Occurrence (Special Areas): One or two trees recorded in Bhuj

Habit and Plant Form: Shrub or small evergreen tree.

Leaves: oppositely arranged, hairless, blunt or shortly pointed, stalk 5 mm long.

Inflorescence: corymb-like terminal panicle

Flowers: fragrant, white, small & numerous, complete, actinomorphic, tetramerous.

- **Calyx** is minute, 4, ovoid, oblong, tubular persistent, triangular, limb short & persistent.
- **Corolla:** Petals 4, gamopetalous, spreading, twisted in bud, tubular, obtuse.
- **Androecium:** Stamens 4, inserted on the mouth of corolla; filaments short or absent.
- **Gynoecium:** Bicarpellary, inferior, style clothed with white hairs, filiform.
- **Fruit:** Drupe, globose, 2-seeded. **Seeds:** brown, testa membranous, albumen horny.

Flowering and Fruiting Time: March-April.

Significance: Mainly unknown species where planted and as ornamental species for small white fragrant flowers.



109. *Adansonia digitata* L.

Botanical Name: *Adansonia digitata* L.

Common Name: African Baobab tree, Gorakh Amili, Rukhado, કલ્પવૃક્ષ, ગોરખ ગાંજો

Plant Family: MALVACEAE (BOMBACACEAE)

Occurrence (Special Areas): Large size two trees are recoded- Alfred highschool and Asshapura Temple area, planted many years before and few saplings are planted recently in Lalan College, Sahyog Van, Jaynagar Van etc.

Plant Form and Habit: Tree with massive trunk, shaped like a bottle deciduous tree.

Leaves: Alternate, deciduous, palmately compound, leaflets 3-9.

Inflorescence: Pendulous, axillary, solitary.

Flowers: Large white flowers that hang down on long stalks, complete, actinomorphic.

- **Calyx:** Sepals 5, gamosepalous, valvate, deeply 5-fid.
- **Corolla:** Petals 5, white, polyandrous, twisted, obovate.
- **Androecium:** Stamens indefinite, monodelphous, forming staminal tube, extrose.
- **Gynoecium:** Multicarpellary, syncarpous, 5-10 locular, axile placentation.
- **Fruit:** Long, oblong, pale greenish brown, densely hairy, woody, indehiscent.
- **Seeds:** Embedded in fleshy brownish-white pulp.

Flowering and Fruiting Time: April-September

Significance: Planted for ornamental purpose and Native from Africa.



110. *Soymida febrifuga* (Roxb.) A. Juss.

Botanical Name: *Soymida febrifuga* (Roxb.) A. Juss. **Synonyms:** *Swietenia febrifuga* Roxb.

Common Name: Ragat Rohido, Rohini, Royan, Royani, रौयण

Plant Family: MELIACEAE

Occurrence (Special Areas): Only one tree recorded from Lalan College campus

Habit: A huge tree bearing deciduous foliage and having a tough bark exfoliating in plates

Leaves: Pinnately compound, Leaflets are 7-13, elliptic or oblong, entire.

Inflorescence: Axillary and terminal panicles

Flowers: Greenish-white, complete, actinomorphic, hypogynous, pentamerous, bracteolate.

- **Calyx:** Sepals 5, polysepalous, imbricate, rotund, pubescent.
- **Corolla:** Petals 5, polypetalous, spreading, clawed, contorted, obovate, white.
- **Androecium:** Stamens 10, monodelphous, inserted between the teeth, 2-celled, flat.
- **Gynoecium:** Carpels 5, syncarpous; 5-locular, with many ovules, axile placentation.
- **Fruit** Capsule obovoid, woody, 5-valved; separating from the thick 5-winged axis.
- **Seeds:** Oblong, compressed, winged at both ends.

Flowering and Fruiting Time: **FLS:** Feb.-Apr. **FRS:** Mar.-Jane.

Significance: Planted for educational purpose by Department of Botany, Lalan College, Bhuj.



111. *Spathodea campanulata* P. Beauv.

Botanical Name: *Spathodea campanulate* P. Beauv.

Common Name: Scarlet-bell tree, Fountain tree, African tulip tree, Pichkari

Plant Family: BIGNONIACEAE

Occurrence (Special Areas): Recently started planted in Bhuj- Lalan college, Walkway and in many new developmental project sites.

Habit: A large upright evergreen tree

Leaves: Uni-pinnately compound, 5-19 deeply veined oval leaflets, entire, acuminate.

Inflorescence: An erect, terminal, many-flowered, racemes.

Flowers: Orange-red, complete, zygomorphic, hermaphrodite, hypogynous.

- **Calyx:** Spatheous, leathery, boat-shaped, dark-brown tomentose.
- **Corolla:** Petals 5, Campanulate lobes ovate, undulate-margined, acute.
- **Androecium:** Stamens 4, included; filaments yellow.
- **Fruit:** capsule flat, ends narrowed, erect, glabrous, winged seed.

Flowering and Fruiting Time: July- May.

Significance: Planted for beautiful dark reddish orange flowers, evergreen and fast-growing.



112. *Alangium salviifolium* (L.f.) Wangerin

Botanical Name: *Alangium salviifolium* (L.f.) Wangerin

Common Name: Sage Leaved Alangium, Hill sack tree, Stone mango (ଅଂଡ଼ିଫଳ)

Plant Family: Cornaceae

Occurrence (Special Areas): Only one tree recorded in Bhuj

Habit: 3 to 10 m tall thorny tree species, evergreen and like more moisture

Leaves: Elliptic oblong, elliptic lanceolate or oblong lanceolate, base wedge-shaped, margin entire, tip blunt.

Inflorescence: Flowers are borne in stalkless clusters of 4-8 flowers, usually fewer, sometimes only a solitary flower, densely rusty woolly.

Flowers: Fragrant, cream-colored

Calyx: Sepal-cup tube; sepals 5-10, toothed.

Corolla: Petals are 4-10, basally swollen and at tip blunt, outside woolly, inside less so

Androecium: Stamens 10-30 at tip geniculate and bearded,

Fruit: Berries are ovoid, ellipsoid or nearly spherical, hairless, smooth and violet to purple

Flowering and Fruiting Time: February-June.

Significance: Medicinal wild plant species and common in Aravalli Hill range- mainly in and around the riverine/rivulets.



113. *Artocarpus heterophyllus* Lam

Botanical Name: *Artocarpus heterophyllus* Lam

Common Name: Jackfruit (ફૂલફણ)

Plant Family: MORACEAE

Occurrence (Special Areas): Only single tree recorded from Temple

Habit and Plant Form: Grows as an evergreen tree with reddish-brown and smooth bark with milky sap.

Leaves: Alternate and spirally arranged, gummy and thick and are divided into a petiole and a leaf blade.

Inflorescence: Pedunculated, cylindrical to ellipsoidal or pear-shaped, to about 10–12 cm long and 5–7 cm wide.

Flowers: Jackfruit trees are monoecious, having both female and male flowers on a tree.

The male flowers are greenish, some flowers are sterile, hairy and prominent stamens are straight with yellow, roundish anthers.

The greenish female flowers, with hairy and tubular perianth, have a fleshy flower-like base, an ovary with a broad, capitate, or rarely bilobed scar.

Fruit: Grow on a long and thick stem on the trunk, vary in size and ripen fruits is yellowish-brown.

Flowering and Fruiting Time: December to March

Significance: Planted for fruits and evergreen tree.



114. *Artocarpus atilis* (Parkinson) Fosberg

Botanical Name: *Artocarpus atilis* (Parkinson) Fosberg

Common Name: Breadfruit (දුමුලු තැණ)

Plant Family: MORACEAE

Occurrence (Special Areas): Only single tree recorded from Temple

Habit: Breadfruit trees grow to a height of 26 metres. All parts of the tree yield latex.

Leaves: The large and thick leaves are deeply cut into pinnate lobes.

Inflorescence: Monoecious, with male and female flowers growing on the same tree. The male flowers emerge first, followed shortly afterward by the female flowers.

Fruit: Spinier fruits with numerous seeds

Flowering and Fruiting Time: May to August

Significance: Planted for fruits as well as for ornamental.



115. ***Bombax ceiba* L.**

Botanical Name: *Bombax ceiba* L.

Common Name: Malabar silk-cotton tree; red silk-cotton; red cotton tree (शिमली)

Plant Family: MALVACEAE

Occurrence (Special Areas): Only few trees planted in gardens and temples for ornamental tree and now introduced in wilderness habitats like sahyog Van, Shinnagar Van etc.

Habit: Large to small tree in wild condition with numerous conical spines on main trunk as well as on branches.

Leaves: The leaves are palmate with about 6 leaflets radiating from a central point

Inflorescence: Cup-shaped flowers solitary or clustered, axillary or sub-terminal, fascicles at or near the ends of the branches.

Fruit: Semul trees bear beautiful red-colored flowers along with fruits and cotton bearing seeds for wind dispersal.

Flowering and Fruiting Time: January to April

Significance: The paste of spines applied topologically on pimples.





Bombax ceiba L.

116. *Dalbergia sissoo* Roxb.

Botanical Name: *Dalbergia sissoo* Roxb.

Common Name: North Indian Rosewood or Shisham (सीसम)

Plant Family: FABACEAE

Occurrence (Special Areas): Planted in many areas- Surrounding Hamirsar, Temples, Gardens, Colleges etc.

Habit: Medium to large deciduous tree with a light crown

Leaves: Leathery, alternate, pinnately compound, light green in color

Inflorescence: Flowers are whitish to pink, fragrant, nearly sessile and in dense clusters

Fruit: Pods are oblong, flat, thin, strap-like with one to five flat, bean-shaped seeds.

Flowering and Fruiting Time: January to May

Significance: Planted mainly for timber and use for many medicinal purposes by local traditional *vaidh*. Leaves use to cure cancer cells.



117. *Gliricidia sepium* (Jacq.) Steud.

Botanical Name: *Gliricidia sepium* (Jacq.) Steud.

Common Name: Gliricidia, ଝରଞ୍ଜ ଗାଁ ଖାତ

Plant Family: FABACEAEA

Occurrence (Special Areas): Planted in temples and societies- Tapkeshwari, Bhanushali Nagar, offices etc.

Habit: Small tree with smooth bark and its color can range from a whitish gray to deep red-brown.

Flowers: The flowers are located on the end of branches that have no leaves, bright pink to lilac color that is tinged with white. A pale-yellow spot is usually at the flower's base.

Fruit: Pods yello-brown and produces four to ten round brown seeds.

Flowering and Fruiting Time: February to April

Significance: Fast growing use as live fencing and nitrogen fixing plant for soil nutrient cycle and also use as ornamental species.



118. *Guazuma ulmifolia* Lam.

Botanical Name: *Guazuma ulmifolia* Lam.

Common Name: West Indian elm or bay cedar (ખોટો રુદ્રાક્ષ)

Plant Family: MALVACEAEA

Occurrence (Special Areas): Only one tree recorded from Bhuj planted for ornamental

Habit: Small Tree with large rounded canopy

Leaves: Ovate to lance-shaped, finely saw-toothed margin, usually have a rough texture with darker green upper surface and a fairer green color underneath.

Flowers: Flowers in clusters, many, yellow-brown color

Fruit: Capsules that are round to elliptical small with egg shape grey seeds.

Flowering and Fruiting Time: March to September

Significance: Medinal plant species and dry fruits use to make a *mala* in local. Flowers attract many insects, butterflies and bird species.



119. *Tabebuia rosea* DC.

Botanical Name: *Tabebuia rosea* DC.

Common Name: Rosy Trumpet Tree (ટેબીબુઆ)

Plant Family: BIGNONIACEAE

Occurrence (Special Areas): Few plants planted in garden as ornamental tree for pink flowers and evergreen species.

Habit: Large to small tree

Leaves: Compound, digitate and deciduous. Each leaf has five leaflets of variable size, the middle one being the largest.

Flowers: Large, in various tones of pink to purple, and appear while the tree has few or no leaves

Fruit: The long and slender fruit capsules

Flowering and Fruiting Time: January to September

Significance: Ornamental fast-growing tree species



120. *Tectona grandis* L.f.

Botanical Name: *Tectona grandis* L.f.

Common Name: Teak (तेक)

Plant Family: LAMIACEAE

Occurrence (Special Areas): Planted mainly in vadis and gardens, Temples etc.- known for its high-quality wood.

Habit: Large deciduous tree with grey to greyish-brown branches

Leaves: Large, papery leaves of teak trees are often hairy on the lower surface.

Flowers: Small, fragrant white flowers arranged in dense clusters

Flowering and Fruiting Time: June to December

Significance: Very good wood for many constructions and long-durable wood.



121. *Tamarix dioica* Roxb. ex Roth

Botanical Name: *Tamarix dioica* Roxb. ex Roth

Common Name: Lai (ಲೈ)

Plant Family: TAMARICACEAE

Occurrence (Special Areas): Few trees are recorded as naturalized near Jubilee, Lalan college and near Hamirsar; Look like *Sharu* tree.

Habit: Small tree to large shrub with reddish brown branches.

Leaves: Greyish-green, tiny and scale-like, overlapping each other along the stem.

Flowers: The inflorescences are racemes long with pink or purple flowers

Fruit: Small pink white capsules with many papery seeds.

Flowering and Fruiting Time: January to December

Significance: Wild species and many times use to build a main structure of houses in villages.



122. *Terminalia mantaly*

Botanical Name: *Terminalia mantaly*

Common Name: Umbrella Tree, Terminalia

Plant Family: COMBRETACEAE

Occurrence (Special Areas): Recently started plantation in many developmental sites

Habit: Small tree to shrub, branches are arranged spirally and attracted pattern of small branches and leaves.

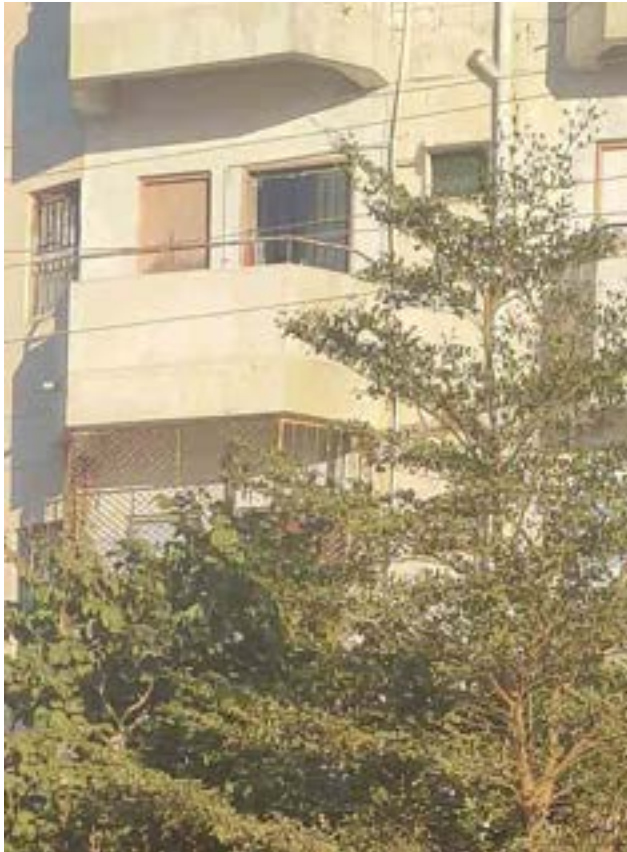
Leaves: Smooth, bright green when young, in terminal rosettes of 4-9 unequal leaves on short, thickened stems; length up to 7 cm, apex broadly rounded, base very tapered, margin wavy.

Flowers: Small, greenish, in erect spikes to 5 cm long.

Fruits: Small oval; seeds, about 1.5 cm long with no obvious wings.

Flowering and Fruiting Time: March to July

Significance: Usually evergreen at higher altitudes; it is drought resistant once established.



123. *Artabotrys hexapetalus* (L.f.) Bhandari

Botanical Name: *Artabotrys hexapetalus* (L.f.) Bhandari

Common Name: Tail grape (हूँक चंपे)

Plant Family: ANNONACEAE

Occurrence (Special Areas): Few small trees observed in Temples and Gardens

Habit: Small tree and shrub with mainly spreading and hanging branches, dark green shaded plant species with distinct unique hook-like peduncles. Bark grayish brown, fissured.

Leaves: Alternate, exstipulate, shining glabrous above, glaucous beneath.

Flowers: Bisexual, fragrant, recurved hooked leaf opposed, solitary or in fascicles, Sepals 3, valvate, base connate, Petals 6 or 9, valvate, in two whorls. Stamens many, ovoid, oblong, cuneate, connectives on the flat top. Carpels oblong or columnar, stigma ovoid or clavate.

Fruits: Ripe carpels or fruit apocarpous many, subsessile, berried and ovoid.

Flowering and Fruiting Time: March to August

Significance: Planted for ornamental purpose and for evergreen plant species.



124. *Caesalpinia coriaria* (Jacq.) Willd.

Botanical Name: *Caesalpinia coriaria* (Jacq.) Willd.

Common Name: Divi Divi, American Sumac (ደረብ ደረብ)

Plant Family: FABACEAE/ CAESALPINIACEAE

Occurrence (Special Areas): Planted near Sharad Bag and old trees with dense canopies.

Habit: Trees; branchlets warty.

Leaves: Bipinnate, alternate; stipules minute; rachis, slender, pulvinate; pinnae 8-16 pairs, subopposite, slender, pubescent; leaflets 24-44, sessile, opposite.

Flowers: Bisexual, creamy, in axillary and terminal panicles; calyx tube campanulate, short; petals 5, ovate-orbicular, clawed subequal.

Fruits: Fruit a pod; twisted.

Flowering and Fruiting Time: September to March

Significance: Planted mainly for ornamental species.



125. *Areca catechu* L.

Botanical Name: *Areca catechu* L.

Common Name: Betel-nut, Supari palm

Plant Family: ARECACEAE (PALM FAMILY)

Plant Form: Tree

Occurrence (Special Areas): Mainly planted in Temples

Habit: A is a medium-sized tree growing to 20 m tall.

Leaves: long, pinnate, with numerous, crowded leaflets.

Inflorescence: crowded, much-branched panicles borne below the leaves

Flowers: Unisexual, hypogynous. male and female flowers borne in the same inflorescence

- **Perianth:** Tepals 6, stalkless, creamy-white, fragrant.

- **Androecium:** In male flower minute, Stamens 6, arrowhead-shaped anthers

- **Gynoecium:** In female flowers are larger, 3-celled ovary, triangular stigma

Fruit: Fibrous, ovoid fruits, yellow to orange or red when ripe, contain the betel nut.

Flowering and Fruiting Time: June – December

Significance: Ornamental tree species



126. ***Areca triandra* Roxb. ex Buch. -Ham.**

Botanical Name: *Areca triandra* Roxb. ex Buch. -Ham.

Common Name: Triandra Palm

Plant Family: ARECACEAE (Palm Family)

Plant Form: Palm (Cluster) Tree to small tree and shrub like clusters

Occurrence (Special Areas): Planted mainly in Temples and Gardens

Habit: The palm forms dense clump of pale green stems and deep green pinnate fronds.

Leaves: Long, pinnate, with numerous, crowded leaflets, arching with terminal leaflets joined

Inflorescence: Inflorescence arises below the crown shaft.

Flowers: Unisexual, hypogynous. strong lemon odour.

Fruit: Fruits are an additional decorative feature being orange- red when ripe.

Flowering and Fruiting Time: Throughout the year.

Significance: Planted mainly for ornamental purposes



127. *Phyllanthus acidus* (L.) Skeels

Botanical Name: *Phyllanthus acidus* (L.) Skeels

Common Name: West India gooseberry, Grosella, Gooseberry tree, Ambadi, ଆମ୍ବଡ଼ି

Plant Family: PLYLLANTHACEAEA

Plant Form: Small tree to shrub, multi-branched spiral arrangement with light green color branches and leaves.

Occurrence (Special Areas): Planted in Gardens, Societies and Temples

Leaves: Ovate or lanceolate in form, with short petioles and pointed ends, green and smooth on the upperside and blue-green on the underside.

Inflorescence: The flowers can be male, female or hermaphrodite. They are small and pinkish and appear in clusters in 5-to-12.5-cm long panicles.

Flowers: Flowers are formed at leafless parts of the main branches, at the upper part of the tree.

Fruit: The fruits are numerous, oblate, with 6 to 8 ribs, and densely clustered. They are pale yellow or white, waxy, crisp and juicy, and very sour.

Flowering and Fruiting Time: January to May; Throughtout Year mainly with Fruits

Significance: Medicinal plant





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