

Background Note for preparation of scientific database of the Botanical Garden at Sarangpur village for education, research and to further improve/ enrich the left-over plantations/ activities in the Botanical Garden

Introduction:

Chandigarh, the ‘city beautiful’ situated in the foothills of Shivalik is blessed with a climate that is suitable to accommodate number of species of flora of different climatic regions. It is worthwhile setting up a Botanical Garden here with a purpose to conserve the flora of the region as well as those exotic and near extinct species. With this background, Chandigarh Administration has established a Botanical Garden near village Sarangpur. This garden spreads over 176 acres of land. The foundation stone was laid on 30th May, 2002. This garden has been connected with the nature reserve known as Patiala-ki-Rao forest through a causeway. Patiala-ki-Rao forest spreads over 350 acres of land. The garden consists of 15 Botanical Sections.

Objective of Setting Botanic Garden: The primary aim of setting up of Botanical Garden is to promote research, education, ex-situ conservation and to spread awareness about our floral heritage. In addition, the garden would help promote eco-tourism in Chandigarh.

Botanic Sections:

- **Medicinal Plants Garden:** Medicinal Plants Garden/ Herbal Garden has been developed over 40 acres of land. More than 75 species of medicinal trees and 55 species of medicinal shrubs, herbs & climbers have already been planted in this section. Tree species like Harar, Bahera, Amla, Neem, Arjun, Maulsari, Bael, Kathal, Sandalwood, Kachnar, Camphor, Lasura, Gular, Rudraksha, Jamun, Sita Ashok, Guggal, Putranjeeva etc. have been planted alongwith about 55 varieties of medicinal herbs like Giloe, Akarkara, Gokhru, Ghritkumari, Ashwagandha, Sarpagandha, Tulsi, Mehndi, Kalmegh, Bhringraj, Mandukparni, Brahmi, Bansa, Vacha etc. The list of medicinal trees, shrubs, herbs and climbers is placed at Annexure-IV.
- **Bambusetum:** 22 species of bamboos and 3 species of canes have been planted along two seasonal nullahs passing through the Botanical Garden. A few fern species have, however, been included and planted in shade.
- **Ficus Grove:** 18 species of Ficus have been planted in this section. Adequate space has been left to include more species in future. The list of species is placed at Annexure-V
- **Arboretum:** This section consists of more than 90 species of different kinds of trees. About 70 more species of trees could be included in this section in future. The list of species is placed at Annexure-VI.

- **Ornamental/ Flowering Tree Section:** More than 35 species of ornamental trees like Acacias, Lagerstroemia, Cassias and Bauhinias etc. have been planted in this section. The list of species is placed at Annexure-VII.
- **Pinetum:** 12 coniferous species including pines have been planted in this section and few more will be added in future.
- **Palmatum:** This section consists of 20 species of Palms and cycads. A part of this section has been devoted to include pseudo-palms too.
- **Sacred Grove:** This section has been developed in the form of a Cosmic tree/ 'Sarva Dharma Vriksha'. This 'tree' comprises 11 branches and each branch represents a specific religious Vatika. The Vatika are :-Ram Vatika
 - Krishan Vatika
 - Guru-ke-Bagh Vatika
 - Kurani Vatika
 - Christian Vatika
 - Navgraha Vatika
 - Shiv Vatika
 - Vishnu Vatika
 - Brahma Vatika
 - Jain Vatika
 - Budh Vatika

In these Vatika, the trees associated with various religions have been planted.

- **Cactus & Succulent Section:** More than 100 varieties of Cactus & Succulent plants have been collected from different sources to develop this section. A beautiful water body and water channel adds to its aesthetic value. A poly-carbonate house has been made in which various cactus varieties collected from the Regional Plant Resource Centre have been planted. Individual and mixed Rockeries have been made and cactus and succulent are planted
- **Aquatic Plants Section:** A lotus shaped sections. This section will have more than 30 aquatic plant species. At present 12 species are planted
- **Rare Plants Section:** An area of about 3 acres has been allocated to this section. The collection includes rare plants from India & abroad.
- **Tropical Rain Forest Section:** A number of tree species specific to rain-forest have been planted in this section. This section will be enriched further with more such species and also matching features.
- **Bulbous Garden:** This section is developed over 2 acres of land. It will consist of a variety of Bulbous plants of this region like –Gladiolus, Dafodil, Nargis, Lillium, Iris etc
- **Japanese Garden:** This section is under development over 5 acres of land. The garden will have various Japanese features.

- **Nutrition garden:** This section includes fruit species suitable for temperate, tropical and sub tropical region. More than 15 fruit species have already been introduced in this section. Few more will be added in future.

Other salient features of the Botanic Garden:

- **Office-cum-Nature Interpretation Centre:** The office building near Gate No.1 has been constructed as Nature Interpretation Centre. The exhibits related to medicinal plants and other kind of flora and wildlife will be displayed here to create awareness amongst the masses about the nature, environment, medicinal plants, forests & wildlife. A Conference Hall with a capacity to accommodate more than 100 persons would be utilized to educate the students, farmers, NGOs and other interested groups. Workshops & other activities related to environment education will also be carried out in the Conference Room.

There is a small Library with books on medicinal plants, forestry, wildlife, environment and set of magazines related to ecology and environment. The visitors/ tourists will have free access to the library.

- **Roads and Pathways:** To go round the garden, a five km. cycle track has been laid. The department will provide 'bicycle' on a nominal rent to the visitors. A network of cement concrete pathways of 6 km. length criss-crossing the entire length & breadth of the garden has also been constructed to have close access to each section of the Botanical Garden.
- **Lake:** 2 lakes have been developed along Patiala-ki-Rao and in Botanical Garden covering 15 & 8 acres of land respectively. These have been so designed as to harvest rain water. These aesthetically designed water bodies will also act as a percolation tanks. Few boats will also be provided to promote eco-tourism.
- **Water bodies:** In addition to the lake, 5 more water bodies have been developed inside the garden. These water bodies will also harvest the rain water and add to the beauty of the garden. Besides, the purpose here too is to recharge the underground water aquifers.
- **Meditation Huts-cum-Rain Shelters:** Two Meditation Huts have already been erected and 4 more will be added in due course.
- **Nursery-cum-Research Block:** An exclusive nursery for Botanic Garden has already been developed over 2 acres of land. It consists of a green shade net-house and a poly-house too. Saplings of medicinal plants are already being distributed to the individuals/ organizations for the promotion of medicinal plants/ herbal gardens in U.T. Chandigarh. An area of 1½ acre has been kept reserved for Herbarium and the Research Block.
- **Public Utility services:** There is a provision of Toilets and water posts all along cycle tracks and pathways.
- **Cafeteria:** An area of about an acre has been kept reserved for construction of a Cafeteria overlooking the lake in the garden.

Scope of Work

- 1. Documentation of the flora of the Chandigarh Botanic Garden. Following baseline information is to be generated. Format is placed at Annexure -I**
- 2. Publication of the brochure on the Botanic Garden in general and of various sections in particular. Format is placed at Annexure -II**
- 3. Publication of Booklet on the Medicinal plants of Chandigarh Botanic Garden (Bilingual). Format is placed at Annexure -III**

Format for Documentation of the Flora of the Chandigarh Botanic Garden**(In Alphabetical Order, Family wise)**

Name of Species

Diagnostic Feature

Species Information

- **Common name/s**
- **Conservation Status: Rated by the IUCN**
- **Habitat**

Taxonomy of the Species

- **Class**
- **Subclass**
- **Super order**
- **Order**
- **Family**
- **Genus**
- **Species**
- **Variety**

About the species (Details)

Geography & Distribution

Uses

*** Photographs (Whole tree/shrub/herb, diagnostic feature, leaves, flower, fruits etc) are to be submitted in each case.**

Publication of Brochure on Major Plant Sections of Botanic Garden

Brief/Diagnostic Text on section and plants with Relevant Photographs of following Botanic Sections at the Chandigarh Botanic Garden

1. Medicinal Plant Section

- a. Tree species**
- b. Shrubs**
- c. Herbs**
- d. Climbers**

2. Bambusetum

3. Ficus Grove

4. Arboretum

5. Ornamental Section

6. Pinetum & Palmatum

7. Sacred Grove

8. Cactus & Succulent

9. Aquatic Plant Section

*** Photographs (Whole tree/shrub/herb, diagnostic feature, leaves, flower, fruits etc) are to be submitted in each case.**

**Publication of Booklet (Bilingual) on Medicinal Plant of
Chandigarh Botanic Garden**

Name of Species

Diagnostic Feature

Taxonomy of the Species

- **Class**
- **Subclass**
- **Super order**
- **Order**
- **Family**
- **Genus**
- **Species**
- **Variety**

About this species: Details

Geography & Distribution

Threauptic Uses

Parts Used

How to use

Important Medicines made out of the plant (available in market)

Cultivation Technology

Photographs (Whole tree/shrub/herb, diagnostic feature, leaves, flower, fruits etc)

*** Photographs (Whole tree/shrub/herb, diagnostic feature, leaves, flower, fruits etc) are to be submitted in each case.**

Medicinal Plant Section Species

Scientific Name	Common Name
Acacia catechu	Khair
Adina cordifolia	Haldu
Aegle marmelos	Bel
Albizzia lebbek	Siris
Alstonia scholaris	Sataparna
Artocarpus heterophyllus	Kathal Barhal
Artocarpus chaplasha	Dheu
Artocarpus lakoocha	Hari champa
Artabotrys odoratissimus	Sitaphal Chhal
Anona squamosa	Dhok
Anogeissus latifolia	Kadam
Anogeissus pendula	Neem
Anthocephalus cadamba	Kachnar Salai
Azadirachta indica	Red silk cotton tree
Bauhinia variegata	Dhak, Palas
Boswellia serrata	Amaltas
Bombax ceiba	Chila
Butea frondosa	Tun
Cassia fistula	Camphor tree
Caesaria tomentosa	Tejpatta
Cedrela toona	Lasura
Cinnamomum camphora	Tilpara Guggulu
Cinnamum tamala	Barna
Cordia dichotoma	Shisham
Cocculus laurifolius	Kendu
Commiphora wightii	Rudraksha
Crataeva adinsonii	Amla
Dalbergia sisoo	Indian coral tree
Diospyros Montana	Jamoa
Elaeocarpus ganitrus	Banyan tree
Emblica officinalis	Pipal
Erythrina variegata	Gular

<i>Eugenia cuspidate</i>	Kokum
<i>Ficus bengalensis</i>	Ginkgo tree
<i>Ficus religiosa</i>	Gambar
<i>Ficus glomerata</i>	Phalsa
<i>Garcinia indica</i>	Kurchi
<i>Ginkgo biloba</i>	Balamkhira
<i>Gmelina arborea</i>	Jhingan
<i>Grewia asiatica</i>	Mahua
<i>Holorhina</i>	Mango
<i>antidysentrica</i>	Nagkesar
<i>Kigelia pinnata</i>	Bakain
<i>Lannea coromandelica</i>	Maulsiri
<i>Madhuca indica</i>	Khirni
<i>Mangifera indica</i>	Sohanjana
<i>Mesua ferra</i>	Shahtoot
<i>Melia azedarach</i>	Curry patta
<i>Mimusops elengi</i>	Pharra
<i>Mimusops hexandra</i>	Kanak champa
<i>Moringa oleifera</i>	Jungli jalebi
<i>Morus alba</i>	Karang
<i>Murraya koenigii</i>	Khejri
<i>Oroxylum indicum</i>	Amrood
<i>Pterospermum</i>	Putranjeeva
<i>acerifolium</i>	Jal, Pilu
<i>Pithecolobium dulce</i>	Ashoka
<i>Pongamia pinnata</i>	Weeping willow
<i>Prosopis spicigera</i>	Sandalwood
<i>Psidium guava</i>	Ritha
<i>Putranjiva roxburghii</i>	Kusam
<i>Salvadora persica</i>	Sal
<i>Saraca indica</i>	
<i>Salix</i>	Mahogany
<i>babylonica(water</i>	Jamun
<i>front)</i>	Taxus
<i>Santalum album</i>	Rohida tree
<i>Sapindus mukorossi</i>	Imli
<i>Schleichera trijuga</i>	Bahera
<i>Shorea robusta</i>	Harar
<i>Sterculia urens</i>	Sain
<i>Swietenia mahagony</i>	Arjun
<i>Syzygium cumini</i>	Hollock

Taxus baccata	
Tecomella undulata	
Tamarindus indica	
Terminalia bellerica	
Terminalia chebula	
Terminalia tomentosa	
Terminalia Arjuna	
Terminalia	
myriocarpa	

Medicinal Shrubs

Scientific Name	Common Name
Abrus precatorius	Rati
Abutilon indicum	Kanghi
Acorus calamus	Vacha
Achyranthes aspera	Apamarg
Adhatoda vasica	Vasaka
Aloe barbedensis	Ghrit kumari
Asparagus racemosus	Satavari
Andrographis	Kalmegh
paniculata	Brahmi
Bacopa monnieri	Kala bansa
Barleria prionites	Kalabansa
Barlaria lupiliana	Punurnava
Boerhaavia diffusa	Sena
Cassia angustifolia	Aak
Calotropis procera	Aak
Calotropis gigantea	Sadabahr
Catharanthes roseus	Karonda
Carissa congesta	Panwar
Cassia tora	Manduparni
Centella asiatica	Aparajita
Clitoria ternatea	Patharchat
Coleus barbatus	Haldi
Curcuma longa	Lemon grass
Cymbopogon citrates	Citronela
Cymbopogon nanus	Krishna datura
Datura metel	Dhatura
Datura alba	Bhringraj
Eclipta alba	Adrakh
Ginger officinal	Geranium

Geranium	Mulethi
Glycyrrhiza glabra	Gurmar
Gymnema sylvestre	Gurhal
Hibiscus robasinensis	Chandni
Iberis amara	Chameli
Jasminum grandiflorum	Mehendi
Justicia gendaussa	Mint varieties
Lawsonia intermis	Lajwanti
Mentha species	Kaunch
Mimosa pudica	Kaner
Mucuna pruriens	Harshringar
Nerium odorum	Kali tulsi
Nyctanthes arbortristis	Ram tulsi
Ocimum basilicum	Kapur tulsi
Ocimum grattisimum	Tulsi
Ocimum kilimandscharicum	kilimandscharicum
Ocimum sanctum	,Kapur tulsi
Ocimum	Pippali
Piper longum	Bhui amla
Phyllanthus niruri	Chitrak
Plumbago zeylanica	Sarpagandha
Rauwolfia serpentina	Ayarnd
Ricinus communis	Mahabala
Sida cordifolia	Kantkari
Solanum	Akarkara
xanthocarpum	Pili kaner
Spilanthes acmella	Sarpunkha
Thevetia nerifolia	Mayur pankh
Tephrosia purpurea	Giloe
Thuja compacta	Gokhru
Tinospora cordifolia	Anatamul
Tribulus terrestris	Khus
Tylophora asthmatica	Nirgundi
Vetiver	Aswagandha
Vitex negundo	Dhatki
Withania Somnifera	
Woodfordia fruticosa	

List of Ficus species planted in Botanical Garden [Ficus Grove Section]

<ul style="list-style-type: none">• Ficus religiosa• Ficus infectoria• Ficus krishnae• Ficus glomerata• Ficus retusa• Ficus benjamina• Ficus nuda• Ficus elastica (ordinary)• Ficus elastica (Black prince)• Ficus panda• Ficus palmata• Ficus variegated• Ficus lyrata• Ficus mysorensis• Bur variegated• Ficus sterlight• Ficus tseila• Ficus cunia	

Tree species planted in Arboretum

Scientific Name	Common name
<i>Acacia tortilis</i>	Vilayati kikar
<i>Acrocarpus fraxinifolius</i>	Pink Cedar
<i>Adina cordifolia</i>	Haldu
<i>Aegle marmelos</i>	Bael
<i>Aesculus indica</i>	Indian Horse Chestnut
<i>Ailanthus excelsa</i>	Mahanim (tree of heaven)
<i>Alnus nepalensis</i>	
<i>Alstonia scholaris</i>	Devil's tree
<i>Annona squamosa</i>	Sitaphal or Sharifa
<i>Anthocephalus cadamba</i>	Kadam
<i>Artocarpus lakoocha</i>	Deophal or Lakooch
<i>Artocarpus heterophyllus</i>	Kathal
<i>Ashok pendula</i>	Ashok
<i>Ashok serpentina</i>	Ashok
<i>Azadirachta indica</i>	Neem
<i>Betula alnoides</i>	
<i>Bischofia javanica</i>	Red cedar
<i>Bombax ceiba</i>	Semul
<i>Boswellia serrata</i>	Salai
<i>Canarium resiniferum</i>	Dhuna
<i>Cedrela toona</i>	Tun
<i>Celtis australis</i>	
<i>Chukrasia tabularis</i>	Chukrasia
<i>Cordia dichotoma</i>	Lasura
<i>Couroupita guianensis</i>	Cannon Ball tree
<i>Dalbergia latifolia</i>	Indian Rose Wood
<i>Desmodium tilifolium</i>	
<i>Diospyros embryopteris</i>	Ghab
<i>Diospyros montana</i>	Kandu, Pasendu
<i>Dillenia indica</i>	Chilta
<i>Dipterocarpus macrocarpus</i>	Hollong
<i>Elaeocarpus ganitrus</i>	Rudraksha
<i>Erythrina indica</i>	Coral tree
<i>Eugenia cuspidata</i>	Jamoa
<i>Ficus cunia</i>	Khunia
<i>Gmelina arborea</i>	Gamari
<i>Grevillea robusta</i>	Silver Oak
<i>Hardwickia binata</i>	Anjan
<i>Heterophragma</i>	Maror-phalli
<i>adenophyllum</i>	Pahari Papri

<i>Holoptelia integrifolia</i>	Lal Bharenda
<i>Jatropha gossypifolia</i>	Balam Khira
<i>Kigelia pinnata</i>	Jhingan
<i>Lannea coromandelica</i>	Ku-babul or White Babul
<i>Leucaena leucocephala</i>	Litchi
<i>Litchi chinensis</i>	Mahua
<i>Madhuca indica</i>	Magnolia
<i>Magnolia</i>	Aam
<i>Mangifera indica</i>	Bakain
<i>Melia azadirachta</i>	Naagkesar (Nahar)
<i>Mesua ferrea</i>	Moulsari
<i>Mimusops elengii</i>	Khirni
<i>Mimusops hexandra</i>	Sainjna
<i>Moringa oleifera</i>	Shehtoot
<i>Morus alba</i>	Currypatta
<i>Murraya koenigii</i>	Pharraai (Dehradun,
<i>Oroxylum indicum</i>	Saharan-pur (Medicinal)
<i>Pithecolobium saman</i>	Raintree
<i>Platanus orientalis</i>	Chanaar
<i>Polyalthia longifolia</i>	Ashok
<i>Pterospermum acerifolium</i>	Kanak champa
<i>Putranjiva roxburghii</i>	Jiva putra
<i>Quercus incana</i>	Oak tree (Baanj)
<i>Salix tetrasperma</i>	Indian willow
<i>Sapindus mukorossi</i>	Ritha
<i>Sapium sebiferum</i>	Makhan tree
<i>Schleichera trijuga</i>	Kusum
<i>Shorea robusta</i>	Sal
<i>Sterculia alata</i>	Budha's coconut
<i>Sterculia urens</i>	Budha's coconut
<i>Swietenia mahagoni</i>	Mahagoni
<i>Syzygium cumini</i>	Jamun
<i>Tamarindus indica</i>	Imli
<i>Taxodium</i>	Taxodium
<i>Tectona grandis</i>	Teak (Sagwan)
<i>Terminalia bellerica</i>	Bahera
<i>Terminalia myriocarpa</i>	Hollock
<i>Thespesia populnea</i>	Tulip tree
<i>Trewia nudiflora</i>	Trewia
<i>Vitex negundo</i>	Sambhalu
<i>Zizyphus mauritiana</i>	Ber

ORNAMENTAL/FLOWERING TREES PLANTED IN CHANDIGARH BOTANICAL GARDEN (ORNAMENTAL SECTION)

Scientific Name	Common Name
<i>Acacia auriculiformis</i>	Australian Kikar
<i>Acacia farnesiana</i>	Vilayati Kikar
<i>Acacia nilotica</i>	Kikar
<i>Albizzia lebbek</i>	Siris (Kokoo Tree)
<i>Albizzia procera</i>	Safed Siris
<i>Artabotrys odoratissimus</i>	Hari Champa
<i>Barringtonia acutangula</i>	Samudraphal
<i>Bauhinia alba</i>	Safed Kachnar
<i>Bauhinia purpurea</i>	Geranium tree/ Kachnar
<i>Bauhinia tomentosa</i>	Yellow Kachnar
<i>Bauhinia variegata</i>	Kachnar
<i>Bauhinia blackiana</i>	Kachnar
<i>Bauhinia sulpharai</i>	Kachnar
<i>Bauhinia acuminate</i>	Kachnar
<i>Butea frondosa</i>	Dhak, Flame of the Forests
<i>Cassia fistula</i>	Amaltas
<i>Cassia javanica</i>	java-ki-Rani
<i>Cassia nodosa</i>	Pink-mohur
<i>Cassia renigera</i>	Pink-Cassia
<i>Cassia siamea</i>	Kassod
<i>Callistemon lanceolatus</i>	Bottle Brush
<i>Chorisia speciosa</i>	Mexican-Silk Cotton tree
<i>Delonix regia</i>	Gulmohar
<i>Erythrina indica</i>	Indian Coral tree
<i>Erythrina blackei</i>	Shrub
<i>Jacaranda mimosifolia</i>	Nili Gulmohar
<i>Koelreuteria apiculata</i>	Koelreuteria
<i>Lagerstroemia thorelli</i>	Queen's Flower
<i>L.flosreginae</i>	Pride of India
<i>Millettia ovalifolia</i>	Rosewood
<i>Murraya paniculata</i>	Satin Wood
<i>Nyctanthes arboritis</i>	Haar Shringhar
<i>Peltophorum ferrugineum</i>	Yellow Flame tree
<i>Plumeria alba</i>	Pagoda
<i>Plumeria rubra</i>	Pagoda
<i>Robinia pseudoacacia</i>	Black locust (Kashmiri Kikar)
<i>Saraca asoka</i>	Sita Ashok
<i>Tecoma argentea</i>	Tecoma tree
<i>Tecomella undulata</i>	Lahura
<i>Terminalia myriocarpa</i>	Hollock