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MEDICINAL PLANTS

95% of campus flora has plants of high medicinal values. There are around 130 species of medicinal plants assembled in pots.

FRUIT GARDEN

Fruit Tree Assembly contains about 65 types of fruit plants. Quite a few fruit trees in the garden are now in fruiting stage like Bet, Logani, Orange, Mango, Aava, Mulberry.

SPICE GARDEN

The spice garden area in Botanic Garden provides an opportunity to see many kinds of spices at one place like ginger, bayleaf, coriander etc.



Biodiversity at its pristine best: a University built in the lap of Mother Nature herself!

Shiv Nadar Institution of Eminence built on a sprawling green campus spread over 115.74 ha (286 acres), is located in a rural-urban landscape in Chithara Village Panchayat of Greater Noida, Uttar Pradesh in the National Capital Region. The University's lush green environs offer a truly wondrous experience to all the residents, while students get a beautiful space to study in a zero-pollution environment. Surrounded by wetlands, tall wild grasses and agricultural fields and heterogeneous habitat, the Campus' unique location truly makes for a postcard setting. The landscaped gardens, avenue tree plantations, vast grassy areas, Saccharum grasses - all serve to make the University a sight not just to behold, but experience and savor in all its pristine glory!

The unique setting of our Campus bears testimony to our strong commitment to promote, nurture and preserve sustainability by following eco-friendly practices beneficial for our environment. Apart from preserving the aesthetic beauty of our Campus, we've also taken some significant steps towards nature protection and conservation; including the initiation of certain ground-breaking projects like the Solar Initiative, Sewage Treatment Plant, Composting of bio-waste and Energy Conservation. Moreover, our unique Thematic Botanic Garden (with 12 theme gardens) - the first-of-its-kind in North India - further underlines our commitment to ensure sustenance of plant species through conservation and research on various rare plant genotypes. The Thematic Garden provides an opportunity to people to see a range of plants belonging to the same category at one place, something which is not possible in a conventional botanical garden.

Our Thematic Botanic Garden (Biodiversity Garden), has been conceptualized, designed and established by Prof. Jyoti K Sharma in an area of 4.2 ha (10.4 acres) near the eastern boundary of our Campus. Home to about 3000 plants belonging to more than 800 plant species, it's made up of 12 thematic gardens, wherein plants which hold economic importance and are vulnerable (from the conservation perspective) are grouped together, based on their uses or taxonomic groups.



12 THEMATIC GARDENS

Here's a snapshot of the bounties of nature, preserved and nurtured to perfection in each of our 12 thematic gardens

Medicinal Plants Garden: Home to 180 species of medicinal plants, including the likes of Akarkara, Aloe vera, Ashwagandha, Asthma Plant, Bhang, Bhringraj and many more!

Fern and Fern-Allies Garden (Fern House): A rare collection of more than 25 ferns (Pteridophytes), including Selaginella (Starry spike/Clubmoss/Sanjeevani booty), Jumping Fern, Silver Fern, Bird's nest Fern, and 3 species of Liverworts (Bryophytes) such as Plagiochasma sp., Funaria spp. (Mosses).

RET Plants Garden: Home to Rare, Endangered & Threatened (RET) species, including Saraca asoca (Sita Ashok), Commiphora wightii (Guggul), Commiphora mukul (Guggul), Gardenia gummifera (Gummy Gardenia) and Sapindus mukurossi (Soapnut)!

Palm Garden: A preserve comprised of 34 species of palms!

Gymnosperms Garden: Replete with 33 Gymnosperm plant species - including cycads, pines, etc. planted on a mound representing the hill!

Ficus Garden: Home to 24 taxa/plant species of Ficus, including Ficus benghalensis, F. benamina, F. elastica, F. racemosa and many more!

Hydrophytes Garden (Aquatic Plants): A dedicated

space harbouring 31 hydrophytes such as Nelumbo nucifera, Hydrilla verticillata (Water thyme), two species of Potamogeton, Ceratophyllum demersum (Coon's Tail), Vallisneria spiralis (Tape Grass), among others!

Butterfly Garden: An abode for nearly 35 butterfly species, including Plain Tiger, Striped Tiger, Peacock Pansy, Caper White, Leopard and others!

Bamboo Garden (Bambusetum): Home to 14 species, including the famous Dendrocalamus asper - an edible species of bamboo, cultivated for its tender shoots used in Chinese cuisine!

Fruit Plants Garden: A boutique preserve, home to traditional fruit trees (like Mangos, Grapes, Apple, Apricots, Cherry, Peach, Plum) as well as rare ones (like Khirni, Barhal, Kaitha, Phalsa)!

Spices and Condiments Garden: A special space dedicated to 50 plant species, including the Indian Bay Leaf, Black Pepper, Cardamom, Cinnamon etc.

Xerophytes Garden (Arid & Semi-Arid Zone Plants): An exclusive corner for nurturing 108 xerophytic plant species/taxa, such as Ailanthus excelsa (Indian Tree of Heaven, Mahaneem), Albizia lebbek (Siris Tree), Butea monosperma (Flame of the Forest), and many more!



The Sarus Crane: *Antigoneantigone*

A large non-migratory crane found in parts of the Indian subcontinent, Southeast Asia, and Australia. The tallest of the flying birds, standing at a height of up to 1.8 m (5 ft 11 in), they are a conspicuous species of open wetlands in South Asia, seasonally flooded Dipterocarpus forests in Southeast Asia, and Eucalyptus- dominated woodlands and grasslands in Australia.

Stroll by the lake: a unique & defining feature of our Campus

The campus lake (part of the Dadri wetlands), also called the **Bil Akbarpur wildlife habitat**, attracts aquatic birds throughout the year, so much so that we named the University's newsletter after one of the prominent resident birds, **Whistling Teal**, representing the sights and sounds of the University. The lake plays willing host to all kinds of birds throughout the year, including both resident and migratory species.

Rich with aquatic life, it offers a veritable feast to our winged cousins from foreign lands, who fly in to the Campus (during winters) and add that extra element of beauty to the Azure waters!





EVERGREEN FLORA

The Historical Gokhru punctured vine/*tribulus terrestris*

A highly important medicinal plant that grows abundantly inside the botanical garden area. The plant has medicinal properties and is widely used in Ayurveda as well as traditional system of medicine in India and other parts of the world for centuries.

House to the most beautiful environs

The University is endowed with wild and cultivated flora which adorn its mesmerizingly beautiful environs. Most of the cultivated species have been used in landscaping the Campus. Detailed studies (carried out over the last two years) documented **a total of 335 plant species (227 wild plants and 108 cultivated plants)** within the Campus. The wild plants comprise of:

**Herbs (174 species),
Climbers and creepers (20 species),
Shrubs (14)
Trees (17 species)**

While cultivated plants include:

**Herb cover crops (8 species),
Palms (9 species),
Climbers (9 species),
Shrubby hedges (37 species) and
Trees (45 species)**





The Antler - NilGai

The chital (*Axis axis*), also known as spotted deer, chital deer, and axis deer, is a deer species native to the Indian subcontinent. It is sexually dimorphic; males are larger than females, and antlers are present only on males.

Co-existing with the Animal Kingdom

The faunal diversity in different habitats in the Chithera Village Panchayat (including our Campus) is extremely rich, including **19 species of Mammals, 153 species of Birds, 19 species of Reptiles, 5 species of Amphibians, 2 species of Fishes, 6 species of Mollusks, 3 species of Annelids and 166 species of insects, including 54 species of butterflies and several species of dragonflies, damselflies, beetles, spiders, etc..** In fact, the highest number of birds and butterfly species were recorded at our Botanic Garden, followed by the wetland and mixed scrub.

For the wildlife enthusiasts, a pair of binoculars (coupled with a discerning eye) could help you sight animals like Nilgais, Porcupines, Wild Boars, Brown Hares, Bristled Grass birds, Black ibis, Peacocks, Indian Cobras, Monitor Lizards, among a host of species nestled safely within our Campus!

THE PALM GROVE WALK

The Silver Date Palm

Phoenix sylvestris also known as silver date palm, Indian date, sugar date palm or wild date palm, is a species of flowering plant in the palm family native to southern Pakistan, most of India, Sri Lanka, Nepal, Bhutan, Myanmar and Bangladesh.

A Campus Exclusive: Our Date Palm Grove

The unique feature of the Campus is that it is dotted with several **Date Palm (*Phoenix sylvestris*) trees** (either individually or in groups). Towering above all, the largest date palm grove comprised of more than **900 individual trees, is spread across a sprawling 0.75 ha on the eastern side of the Campus**. The date palm groves (population) form a unique ecosystem where they play an important role as a keystone species; providing shelter, habitat, food to several wild plants and animals.

Some of the plant species recorded from the Date Palm Grove are no longer found outside in the wild (western UP), perhaps because they vanished in due course owing to various anthropogenic factors.

Through these studies, the Campus also recorded several novel plant species, first in western Uttar Pradesh, Upper Gangetic Plains, Delhi NCR and India, among which **the most exciting finding was a prehistorical relic species, *Equisetum ramosissimum*, commonly known as field horsetail and described as a living fossil**. Other plant species such as *Emex australis*, *Phyllanthus tenellus*, were also documented as new records of occurrence in western Uttar Pradesh and Upper Gangetic Plains and Delhi NCR. **In addition, *Symphyotrichum squamatum*, a herb of the Asteraceae family, also recorded from the Campus, is a new record to India.**



SUSTAINING BIODIVERSITY

Preserving nature for our future generations: an overview of our Biodiversity-focused initiatives

Dovetailing to our commitment to promote sustainable practices, with the aim of ensuring a healthy, and equitable future for all, we have been working on a host of Biodiversity-focused projects at the grassroots, under the able and astute guidance of **Prof. Jyoti Sharma**.

Inspired by our founding ethos and values, we have – in letter, spirit and action – undertaken a series of interventions aimed at promoting, preserving and sustaining Biodiversity:

Biodiversity documentation in Chithara Village Panchayat: A project involving GPS record-tracking of all natural trees and plants within the Campus and Chithara Village, enlisting and identification of horticultural plants, as well as socio-economic, Biodiversity and folk/traditional knowledge surveys. In fact, this survey proved to be instrumental in identifying five plant species, within the Campus, which were new to the state of UP/India! The main outcome of the Project will be to bring out a Model Biodiversity Register of Chithara Village Panchayat.

The first outcome of Biodiversity documentation project was a book on '**Illustrated Flora: Part of Western Uttar Pradesh and Delhi NCR, India**' in 2018, which documented 272 plant species under 203 genera belonging to 69 plant families in Chithara Village Panchayat.

This was followed by the publication of two books on:

'Traditional Knowledge: Folk Songs of Chithara Village in Upper Doab region of Uttar Pradesh, India' (2020) (English and Hindi), and

'Butterflies of Shiv Nadar University Campus: A Pictorial Handbook' (2021).

A Unique Garden in the Making: Thematic Botanic Garden of Shiv Nadar Institution of Eminence. The Handbook describes in detail the chronology of establishment of the Garden and current status of plant diversity in 12 Theme Gardens.

“Birds of Our Courtyard: A Pictorial Hand- book of Birds of Shiv Nadar University Campus”. The book documents 153 species of birds spotted on the campus with illustrations of all the birds for ease in identification.

The undermentioned book on flora of the University Campus is under preparation:

“Know Your Plants: A Handbook of Wild and Cultivated Flora of Shiv Nadar University Campus”. The book documents 234 plant species (122 wild plants and 112 cultivated plants) under 198 genera and 78 families. The wild plants include herbs (73 species), shrubs (14 species), climbers and creepers (18 species) and trees (17 species), while cultivated plants include herbs - cover crops (7 species), shrubby hedges (39 species), climbers (9 species), palms (10 species), and trees (47 species).

After publishing these books on flora and fauna and traditional knowledge, we are striving towards our international commitment derived from the 1992 Rio Convention on Biological Diversity, to help conserve the important elements of the local ecosystem.

Establishment of Thematic Botanic Garden: While the specifics regarding the garden have been covered in detail earlier, it was basically conceived as means to preserve, protect and nurture the bounties of nature, through researching all elements critical to ensure the sustenance of plant species in the wild.

Implementation of eco-friendly practices: Leading by example, the University has set up facilities/infrastructure to promote eco-friendly practices like the Solar Initiative, Sewage Treatment Plant, Composting of bio-waste and Energy Conservation. When students understand the long-term benefits of following these practices, they become advocates of positive change - one which impacts lives much beyond their classrooms and laboratories.

Biodiversity Working Group (coming soon): An idea which soon come to fruition, the Bioersity Working Group will foster greater engagement and awareness regarding Biodiversity, through the collective involvement of staff, faculty and students. In fact, the Go Green Club is already laying the foundation of this group, by actively spreading the word about all our Green initiatives to stakeholders spread across the Campus.

Research-led interventions: Identifying the potential direct and indirect impacts of our activities on Biodiversity, assessing the risks and taking measures to minimise negative impact (on nature) and promote affirmative actions (to save the environment) through research activities undertaken by our faculty.