

**ST. XAVIER'S COLLEGE
MAPUSA GOA**



**PLANTAE
Volume XIII**

**Department of Botany
2025-2026**

St. Xavier's College

Mapusa – Goa



PLANTAE

Department of Botany Newsletter

Volume XIII

2025-26

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Dr. Maria A. D'Souza

Dr. Suraksha Dongrekar

Dr. Seema D. Fernandes

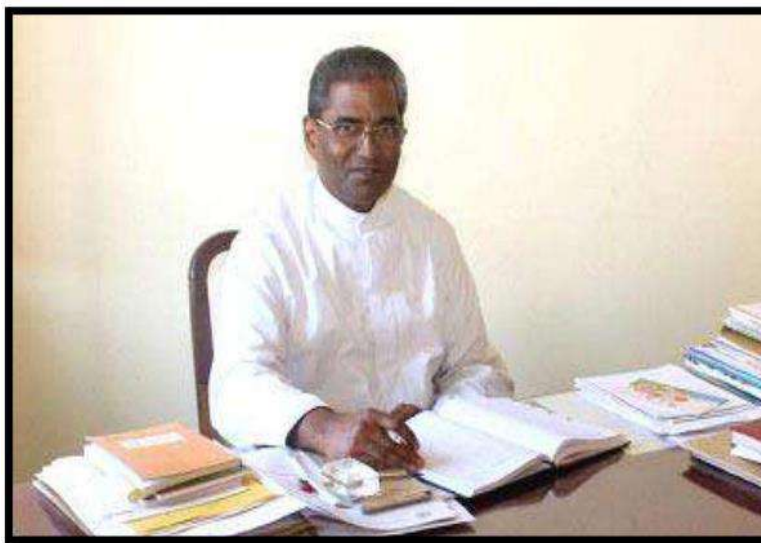
Vision

Integral and Personal growth of students, inculcating in them, the attitude that Mother Nature is ours to use, not to abuse.

Mission

To protect and conserve Mother Nature for a better tomorrow and provide advisory and consultancy services.

Message from the Administrator



"Education is not the filling of a pail, but the lighting of a fire." This oft-quoted insight, attributed to the renowned Irish poet and playwright William Butler Yeats, aptly captures the true purpose of education. Inspired by this vision of igniting minds and nurturing human potential, the Church in Goa embraced the mission of education with remarkable zeal and commitment.

Soon after the liberation of Goa, the Church established St. Xavier's College, Mapusa under the pioneering leadership of Fr. Edwin D'Cruz, SJ, and its founding Principal. The College began its journey in a building belonging to the MSFS Fathers at Bastora and functioned there until 1969, when it was shifted to Mapusa, where it continues to flourish today. A decisive chapter in the institution's history began when its stewardship was entrusted to Dr. Nicolau Pereira, a visionary educationist and an eminent academic. Building upon the strong foundation laid by Fr. Edwin D'Cruz, he transformed the College into one of Goa's premier centres of higher learning. His legacy of excellence, innovation, and service continues to inspire the institution to this day.

Over the years, the landscape of education has undergone profound changes. Yet, St. Xavier's College has remained steadfast in its commitment to academic excellence, thanks to the dedication of its teaching and non-teaching staff, the perseverance of its students, and the enduring vision of Dr. Nicolau Pereira. This Botany Departmental magazine *Plantae* leads us to appreciate the work that is going on in this institution with especial reference to the Department of Botany and

which will definitely serve as a valuable guide, helping us to strengthen our shared commitment to learning, integrity, and the holistic development of every student.

The focus of this year's publication is the Woman Farmer. Traditionally, women have been the providers and nurturers of food for their families and communities. Whether working in the fields or tending kitchen gardens, often while balancing responsibilities in various professions and establishments, they continue to make an invaluable contribution to food security. Their dedication and resilience stand as a true testimony to the spirit of *Nari Shakti*.

An independent and progressive India must ensure that every woman farmer is treated with dignity, accorded equal opportunities, and guaranteed the protection of her rights. This institution has consistently been at the forefront of promoting awareness, education, and empowerment, reaffirming its commitment to recognising the invaluable role of women in nation-building and sustainable development. May this magazine foster the growth of these values.

I would like to congratulate the Editorial Board for releasing this magazine on 15th August 2026. My fond hopes are that this magazine will help the fresher's to understand the academic excellence that is demanded of them, while tickling the enthusiasm of the seniors to set a benchmark for themselves.

God bless you all.

Fr. Antonio Salema
Administrator

Words from the Principal...



It gives me immense pleasure to write this message on the occasion of the release of the newsletter *Plantae*.

Plants are the foundation of life on Earth, and the study of Botany connects us to that foundation. Over the academic year gone by, the department has engaged students in field visit, lab work, seminars and research projects, exploring the diversity of plant life – from tiny algae to towering trees – contributing to a greater understanding of how closely our lives are intertwined with the green world.

Participation in herbarium preparation, botanical exhibition, green campus drives, and other activities reflects not just academic learning, but a genuine love for nature. The dedicated effort of the faculty, in creating a learning environment where nature is celebrated is commendable.

Plantae is a wonderful platform which documents these achievements, shares knowledge and showcases the creativity of our students. It reflects the hard work behind the scenes and the small moments of wonder that happen every day in the lab and in the field.

As a student of Botany, I urge you to continue exploring, questioning and contributing. The challenges of climate change, biodiversity loss and sustainable agriculture need young botanists who are both scientifically conscious. You are that generation.

Hearty Congratulations to the Editor Dr. Wendy Martins and the entire editorial team, the HoD, faculty and students for bringing out this newsletter. May *Plantae* grow with each edition, just like the plants we study – with deeper roots and wider branches.

Wishing you all continued growth and success.

Ms. Ursula Barreto
Officiating Principal

Message from the Head of the Department.....



"Nature speaks in the language of plants. It is our responsibility to listen, learn, and protect."

It gives me immense joy to welcome you to the XIII Edition of *Plantae*, the newsletter of the Department of Botany, St. Xavier's College, Mapusa Goa. Every edition of *Plantae* is more than a collection of events and achievements—it is a celebration of our shared journey, our love for plants, and our commitment to learning, discovery, and caring for the environment.

This edition of *Plantae* reflects the enthusiasm, creativity, and dedication of our students and faculty. It showcases the diverse academic, extension, and environmental activities undertaken by the department, while highlighting our continued commitment to excellence and sustainability.

I express my sincere gratitude to our Administrator, Rev. Canon Fr. Antonio Salema, whose visionary leadership and constant encouragement continue to inspire us, and to our Principal, Ms. Ursula Barreto, for her unwavering support and guidance in all our endeavors.

My heartfelt appreciation goes to Dr. Wendy F. Martins, Editor of *Plantae*, for her dedication and meticulous efforts in bringing out this publication. I also thank our faculty members, dedicated non-teaching staff, enthusiastic students, and everyone who has contributed to making this issue a reality. Your hard work, cooperation, and commitment have made *Plantae XIII* a true reflection of the vibrant spirit of our department.

I hope you enjoy reading this issue and find inspiration in the stories, achievements, and experiences it shares.

Let us never stop learning from nature, for every leaf has a story, every flower a lesson, and every forest a future worth protecting.

With my best wishes to all,

Prof. Dr. Maria Aninha Araujo Ricardo Fonseca
Head of Department



Editor's note...

It is with great pride and pleasure that I present to you this edition of our departmental newsletter *Plantae* –Vol. XIII, which reflects the vibrant academic, co-curricular, and developmental journey of our department. This publication is a humble effort to bring together the activities, achievements, progress, and creative contributions that have shaped the department over the year.

I sincerely thank our Principal for constant guidance and support, our Administrator for valuable cooperation and encouragement, and our Head of the Department for her able leadership. I extend my appreciation to all the teachers of the Department of Botany for their dedication to teaching, mentoring, research, academic development, and various departmental activities. Their commitment and enthusiasm continue to inspire our students and strengthen the academic spirit of the department.

A special word of appreciation goes to our students, whose participation, creativity, enthusiasm, and achievements have added life and meaning to every activity. Their involvement in academic programmes, celebrations, awareness initiatives, and other departmental events is truly commendable. This newsletter *Plantae* is, in many ways, a reflection of their energy and accomplishments.

The report brings together highlights of the activities of the Department of Botany, along with a teacher progression report, offering a glimpse into the academic and professional growth of our faculty. It also features thoughtful articles exploring themes close to the spirit of Botany and our relationship with nature, including the role and contributions of women farmers, the importance of Botany in our lives, and the beauty and significance of nature and biodiversity.

This newsletter is the result of collective effort. I sincerely thank everyone who contributed directly or indirectly to its preparation and completion. Each contribution, whether through an activity, achievement, article, photograph, idea, or word of encouragement, has helped make this publication meaningful. I hope this report serves as a record of our accomplishments, a celebration of our collective efforts, and an inspiration for greater achievements in the years ahead.

Dr. Wendy F. Xavier Martins
Associate Professor

Congratulation

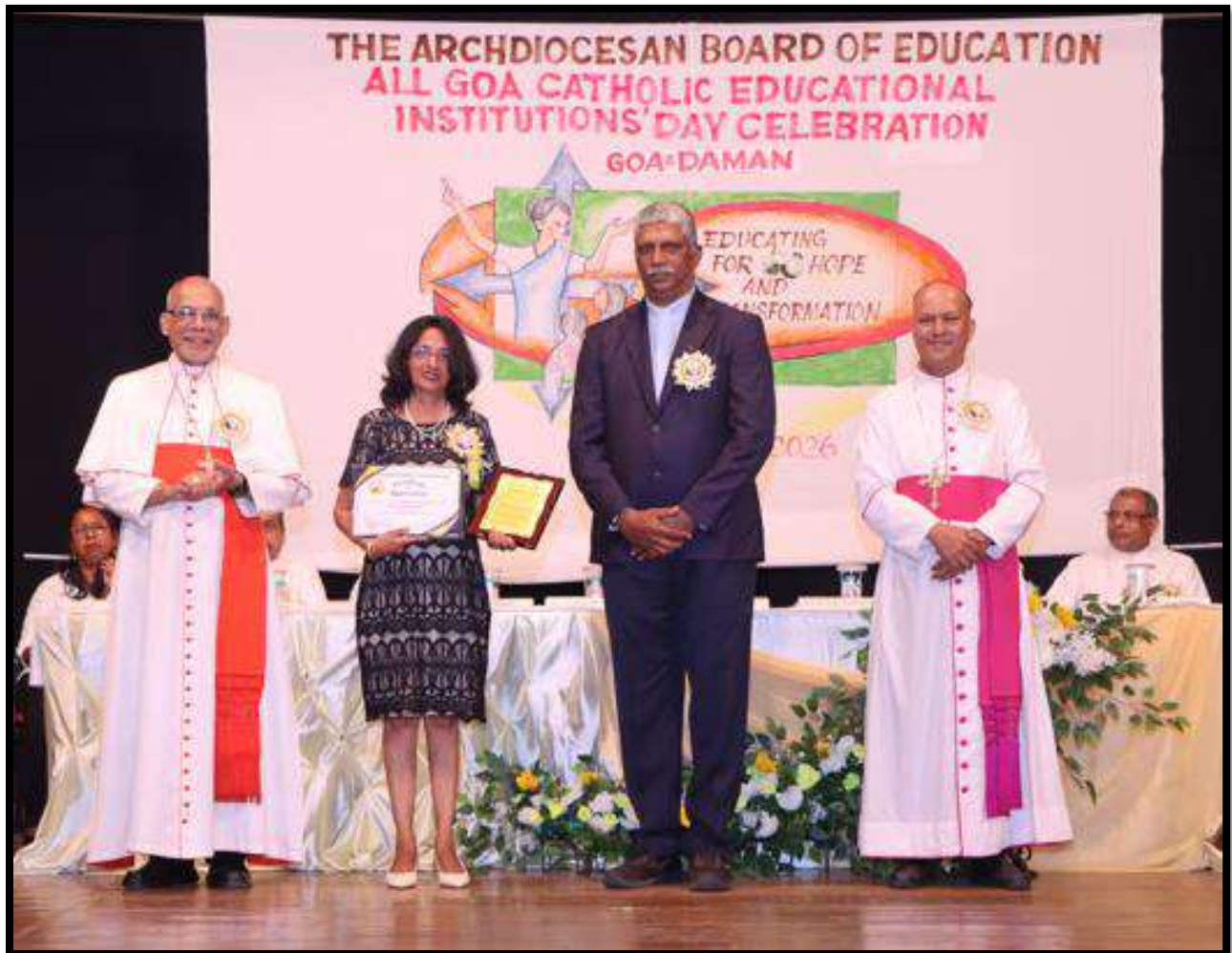


Our faculty

Prof. Maria Fonseca

Was felicitated by the Archdiocesan Board of Education for 30 years of service in the field of Education on 13th February, 2025 at Ravindra Bhavan, Margao.

Congratulation



Our faculty

Dr. Wendy Francisca Xavier Martins

Was felicitated by the Archdiocesan Board of Education for 30 years of service in the field of Education on 13th February, 2025 at Ravindra Bhavan, Margao.

T.Y. Botany Examination Results (2025-2026)

First three toppers



Priyanshu Londe
85.81%

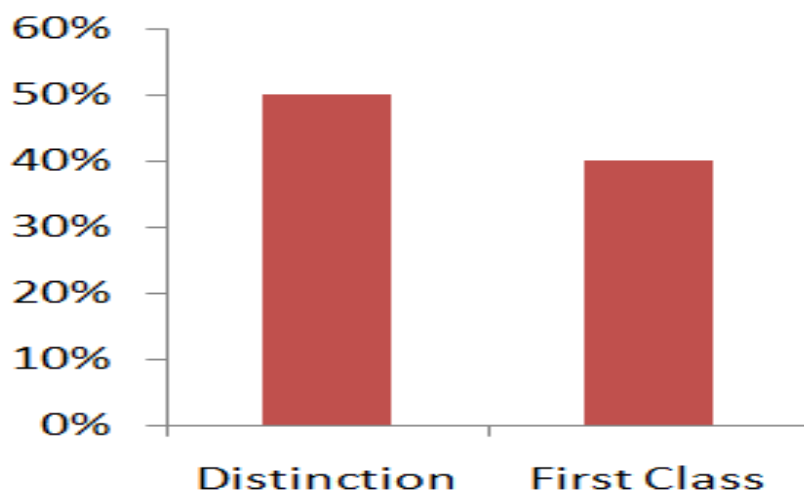


Meghana Savoikar
83.27%



Sailee Ajarekar
82.55%

Overall Performance



Heartiest Congratulations to Our TY B.Sc. Students!

Heartfelt congratulations to all our TY B.Sc. students on your excellent results!

Your success is a reflection of your hard work, dedication, perseverance, and commitment to excellence.

Students continuing with higher studies.....



Priyanshu Londe



Meghana Savoikar



Sailee Ajarekar



Prerana Kamble



Siya Parab



Prabhavati Patil



Sumiya Sunu



Pranali Parab



Sakshi Harmalkar

Heartiest congratulations to all our students who have successfully completed their TY B.Sc. and have chosen to continue their academic journey through higher studies.

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A decorative border of green leaves and branches frames the central text area.

ACTIVITES OF THE DEPARTMENT

Seed bomb making activity

Department of Botany in collaboration with Department of Philosophy conducted a session on making of seed bombs. The session was conducted on 9th August, 2025 from 9:30am to 10:30am. The aim of the session was to teach students how to make and use seed bombs for reforestation and for creating green-spaces. The resource person was Dr. Maria A D'Souza. It was attended by 56 students from various streams of the college. Seed bomb is a Japanese technique to plant trees where one cannot reach or planting trees on arid and barren lands. It is a small ball made of a mixture of clay, soil, and seeds. The students present for the session made their own seed bombs. The session taught them that even through little efforts we can make a contribution to save our environment.



Entrepreneurial Opportunity in Mushroom Cultivation

A talk on 'Entrepreneurial Opportunity in Mushroom Cultivation' was organized by IIC on the 18th September 2025 at the Botany Laboratory of St. Xavier's College, Mapusa. Was attended by 78 students and 07 teachers. The aim of the session was to introduce students to the scope of entrepreneurship in the field of mushroom farming.

Ms. Sabina Dias welcomed the resource person, students and staff, Dr. Maria D'Souza introduced the guest speaker, Ms. Trupti Bhushan Dhakate, founder of Quality Mushroom Farm. Ms. Dhakate spoke about the various types of mushrooms she cultivates and experience in setting up and running a successful mushroom farm. The session was highly informative. Ms. Trupti Dhakate also brought some value added products like mushroom powder, dried mushrooms and cookies which she shared with the staff and students. Ms. Sabina proposed the vote of thanks and the session ended at around 9.30 am.



World Coconut Day Celebration

The Department of Botany in collaboration with Internal Quality Assurance Cell commemorated the 'World Coconut Day' on 20th September 2025. Various activities were conducted along the theme 'Uncovering Coconut's Power, Inspiring global Action.' To uncover the uses of coconut an exhibition was laid out. The exhibition was co-ordinated by Prof. Maria Fonseca and Mr. Conceicao De Souza. Dr. Maria D'Souza prepared a documentary on coconut and Dr. James D'Souza designed the flyer. Four competitions were organised.

COCO-ART was a competition where the participants prepared artifacts using different parts of a coconut tree. Twelve students participated; the first place was secured by Ms. Poonam Palyekar, second by Ms. Neeharika Mandrekar and third by Ms. Raveena D'Souza and Ms. Riya Kenaudekar. This activity was conducted by Dr. Wendy Martins.

There were nine students participating in COCOLICIOUS FOOD competition. They prepared delicious food items. The first place was won by Ms. Meghana Savoikar, second by Ms. Prerana Kamble and third by Ms. Sailee Ajarekar. Dr. Suraksha Dongrekar co-ordinated this competition.

The third completion was poster making on the theme 'Innovative use of coconut tree for sustainability'. Nine students presented their posters. Ms. Alisha Shetgaonkar secured the first place, followed by Ms. Poonam Palyekar and Ms. Sanisha Monerikar. Dr. Harshala Shetgaonkar organised this competition.

The fourth activity was COCO-CANVAS with four participants. Ms. Gauravi Dhatkar & Ms. Purva Mottupali got the first place and Ms. Shreya Talwar & Ms. Alisha Shetgaonkar the second. This activity was conducted by Ms. Maria Beatriz De Souza. The attendance and certificates were seen by Ms. Sabina Dais. The prizes were distributed by Fr. Tony Salema. The overall co-coordinator was Dr. Wendy F. Xavier Martins.



Certificate Course

30 hrs Certificate Course was carried out by our department in collaboration with Internal Quality Assurance Cell (IQAC) of our college. The course was titled collection, isolation, and identification of microfungi conducted on 26th, 27th, 28th and 29th November 2025. The course focused on the collection, culturing of environmental fungal samples, practical, field-based learning and laboratory techniques essential for mycological studies. The sessions comprised of field trip, collecting samples from various substrates such as soil, decaying leaves, wood, and damp surfaces, talk highlighting the role of microfungi in decomposition, food spoilage, biotechnology, and disease, and hands on training by Dr. Maria A. D'Sousa. The highlight of the course was the special talk delivered by Prof. D. J. Bhat, an eminent researcher in the field of fungi. His lecture focused on various aspects of microfungi, including: Introduction and brief history of microfungi, their significance in medical and food industries, Different types of mushrooms and cultivation methods.



Wild Flower Arrangement Competition

A Wild Flower Arrangement Competition was organized on 9th August 2025, fostering creativity and appreciation for nature among students. The event saw enthusiastic participation from seven teams, showcasing their artistic skills using exclusively wild flowers. The competition was coordinated by Prof. Maria Fonseca and Mr. Conceicao De Souza, with three esteemed judges Ms. Rushita Verlekar, Ms. Edwina Pereira and Mr. Francis X. D' Souza evaluating the arrangements.



T.Y.B.Sc. Outstation Field Trip to Coorg and Mysore

Twelve T.Y.B.Sc. Botany students of St. Xavier's College, Mapusa, Goa, undertook a study tour to Coorg and Mysore from November 11 to 18, 2026, under the guidance of the Teacher In-charge, Prof. Maria Fonseca. The primary objective of the tour was to provide hands-on exposure to diverse plant groups, plantation crops, botanical gardens, and museum collections, thereby strengthening classroom learning through real-world observation.

During the tour, students visited plantations, botanical gardens, and research facilities, where they observed a variety of plant species, cultivation practices, and horticultural techniques. They also examined preserved specimens in museum collections, gaining insights into plant taxonomy and biodiversity. The field experience provided valuable practical knowledge of plantation management,

botanical research, and landscaping. The tour significantly enriched students' theoretical understanding, stimulated scientific curiosity, and enhanced their awareness of plant diversity and applied botany. Overall, the study tour was highly educational and beneficial.



“The Green Cure: Discovering the Power of Medicinal Plants”

(State Level Seminar)

The Department of Botany, St. Xavier’s College Mapusa, Goa, organized a One Day State Level Seminar titled “The Green Cure: Discovering the Power of Medicinal Plants” on 24th February 2026.

The Department of Botany, St. Xavier’s College, Mapusa, organized a One-Day State-Level Seminar titled “The Green Cure: Discovering the Power of Medicinal Plants” on February 24, 2026. The programme commenced with an invocation song, followed by addresses by the College Administrator, Fr. Tony Salema, and the Officiating Principal, Mrs. Ursula Barreto. The Convenor and Head of the Department, Prof. Maria Fonseca, formally welcomed the gathering and outlined the objectives of the seminar.

The keynote lecture was delivered by Dr. Nitin Ujjaliya from the All India Institute of Ayurveda, Dhargal, on the topic “Our Green Pharmacy: Goa’s Legacy and Global Promise.” The seminar also featured insightful sessions by the resource persons, Prof. Sangram Keshari Das and Dr. Bishnupriya Mohanty from Gomantak Ayurveda Mahavidyalaya and Research Centre, who spoke on medicinal plants and herbal formulations.

A total of 47 participants from various institutions across Goa attended the seminar, with 11 participants presenting research posters. The valedictory function was graced by Dr. Emilia Mascarenhas. The seminar was organized by the Botany faculty team comprising Prof. Maria Fonseca, Ms. Sabina Sales e Dias, Mr. Conceicao De Souza, Dr. Wendy Xavier Martins, Dr. Maria D’Souza, Dr. Suraksha Dongrekar, Dr. Harshala Shetgaonkar, Dr. James D’Souza, and Dr. Seema D. Fernandes. The seminar proved to be highly informative, engaging, and a great success.



Best Practice

We display one locally available plant for all the students and teachers of our college. Here we learn the name, description, uses and propagation of the plant. This program is called 'Plant of the Week'. The program was conducted by the T.Y.B.Sc. Botany students and co-ordinated by Dr. Wendy Martins from July to October, 2025 and Dr. Seema D. Fernandes from January to April, 2026



Student Achievements

Intercollegiate Event “*Botanica 2026*”

Organized by the Department of Botany, Goa University, Taleigao, Goa, on March 4, 2026. The students were accompanied by the Teacher In-charge, Dr. Seema D. Fernandes.

Mr. Sufiyan Shaikh and Mr. Soham Kerkar of F.Y.B.Sc. secured the Third Place in the Treasure Hunt competition.

Mr. Rudra Thakur of FYBSc was awarded Third Place in the Reel Making competition.

Mr. Rudra Thakur of F.Y.B.Sc. awarded the second place in surprise event.

Ms. Saara Hussain of S.Y.B.Sc. secured the First Prize in the Bottle Painting competition.

The students demonstrated commendable enthusiasm, creativity, and teamwork across the events.



Career Conclave

Eighty students of St. Xavier's college participated for a talk on 'Career Conclave' at Goa University, Taleigao held on January 30 to 31, 2026, at the Dr. Shyama Prasad Mukherjee Indoor Stadium, Bambolim, Goa, organized by the Office of the Commissioner, Labour & Employment in collaboration with the Regional Employment Exchange and Model Career Centre, Panaji. Teacher In-charge, Dr. Seema D. Fernandes.



Canteen Mela 2026

The Department of Botany, St. Xavier's College, Mapusa, Goa, successfully organized a Canteen Mela on 20th February 2026, in the College lobby during the recess time. The event witnessed enthusiastic participation from students, teachers, and staff, making it a vibrant and enjoyable occasion.

A decorative border of green leaves and branches frames the central text. The leaves are vibrant green and appear to be from a flowering plant, possibly a rose, with some small buds visible. The border is composed of four corner pieces that meet at the center, creating a square frame around the text.

Teacher Progression Report

Prof. Maria Aninha Araujo Ricardo Fonseca

Presented and Published in Proceeding

On phytochemical and antibacterial properties of anticancer plants from Goa at the 2nd International Conference on Recent Innovations in Biological, Chemical & Clinical Sciences (RIBCCS-2025) held on 6–7 May 2025 at Manipal University College, Malaysia (Melaka Campus), in collaboration with Microbiologists Society India and Periyar University, India.

Programmes attended

The National Triennial Conference 2025 held from 18th –21st October 2025 at St. Aloysius (Deemed to be University) on the theme “Empowering Minds, Embracing Change: Reimagining Catholic Higher Education for a Global Tomorrow.”

Programme Organised

A One-Day State-Level Seminar titled “The Green Cure: Discovering the Power of Medicinal Plants”, organized by the Department of Botany on February 24, 2026.



Dr. Wendy Francisca Xavier Martins

Paper Published

A Book Chapter titled: Arbuscular Mycorrhizal Fungi: Diversity, Conservation and Application in some selected crop plants of Goa (2026). In: Diversity, Conservation and Biotechnology of Fungi. Ed. Prof. Praveen Gehlot, Prof. S.M. Reddy, Prof. M.M.V. Baig and Prof. Joginder Singh. Agrobios Research- Jodhpur. ISBN: 978-93-49045-69-9. 3: 45-60.

Assessment of Phytochemicals from Some Marine Algae (2025). *SPECTRUM*, 17: 140-156.

Programmes attended

A DoPT, Gol sponsored training programme on ‘Climate Change’ from 9/9/23025 to 11/9/2025 organised by GIPARD, Ella Farm, Old Goa.

One week Offline National FDP on Open Educational Resources and AI in teaching & Learning organized by IQAC of St. Xavier’s College from 21st to 24th October 2025.

FEP on “Strengthening Research Culture” organised by Wellness centre of St. Xavier’s College, Mapusa, on April 1, 2026.

FEP on “Understanding Student Mental Health” and ‘Stress Management’ organised by Wellness centre of St. Xavier’s College, Mapusa, on April 2, 2026.

Programme Organised

A one-Day State-Level Seminar titled “The Green Cure: Discovering the Power of Medicinal Plants”, organized by the Department of Botany, St. Xavier’s College, Mapusa, Goa, on February 24, 2026.



Ms. Sabina M. Sales e Dias

Programmes attended

FEP on “Strengthening Research Culture in Higher Education: Initiatives and Guidelines” organised by Research and Development Cell, St. Xavier’s College, Mapusa on April 1, 2026.

FEP on “Understanding Student Mental Health” and ‘Stress Management’ organised by Wellness centre of St. Xavier’s College, Mapusa on April 2, 2026.

Programme Organised

A one-Day State-Level Seminar titled “The Green Cure: Discovering the Power of Medicinal Plants”, organized by the Department of Botany, St. Xavier’s College, Mapusa, Goa, on February 24, 2026.

Speaker/ resource person

As part of Community Outreach Programme, was a resource person for a hands-on training programme on “How to grow Oyster Mushroom at Home”, held at the Siolim- Sodiem Village Panchayat on 19th September 2025.

At a workshop on mushroom cultivation for villagers at the Village Panchayat Ucassaim-Paliem-Punola, Bardez-Goa. on 7th of May 2026



Mr. Conceicao De Souza

Programme Organised

A one-Day State-Level Seminar titled “The Green Cure: Discovering the Power of Medicinal Plants”, organized by the Department of Botany, St. Xavier’s College, Mapusa, Goa, on February 24, 2026.

Dr. Harshala Shetgaokar

Programmes attended

FEP on “Strengthening Research Culture in Higher Education: Initiatives and Guidelines” organised by Research and Development Cell, St. Xavier’s College, Mapusa, on April 1, 2026.

FEP on “Understanding Student Mental Health” and ‘Stress Management’ organised by Wellness Centre, St. Xavier’s College, Mapusa, on April 2, 2026.

Programme Organised

A one-Day State-Level Seminar titled “The Green Cure: Discovering the Power of Medicinal Plants”, organized by the Department of Botany, St. Xavier’s College, Mapusa, Goa, on February 24, 2026.

Dr. James D’Souza

Programmes attended

One-Week Discipline Specific Faculty Development Programme (FDP) on "Artificial Intelligence (AI) Tools for Pedagogical Enhancement in Higher Education" from 12th January to 16th January 2026.

FEP on “Strengthening Research Culture in Higher Education: Initiatives and Guidelines” organised by Research and Development Cell, St. Xavier’s College, Mapusa, on April 1, 2026.

Programme Organised

A one-Day State-Level Seminar titled “The Green Cure: Discovering the Power of Medicinal Plants”, organized by the Department of Botany, St. Xavier’s College, Mapusa, Goa, on February 24, 2026.



Dr. Maria A. D' Souza

Paper Presented and attended

An oral paper titled ‘Hidden Diversity: Microfungi from places of historical importance in Goa, India’ at The International Conference on Microbial Technologies (ICMMT) – 2025, held on 28/10/2025, organised by Faculty of Technology, Rajarata University of Sri Lanka, College of Biology and Food Engineering, Quing Normal University, China and Tropical Microbiology Research Foundation.

Programmes attended

Training on "Bioinformatics Analysis of DNA Sequence data" held at Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, Kerala, from March 23rd to 26th, 2026.

FEP on “Strengthening Research Culture in Higher Education: Initiatives and Guidelines” organised by Research and Development Cell, St. Xavier’s College, Mapusa, on April 1st, 2026.

Resource Person

For Vidnyan Dhara, A Mega Science Series and delivered interactive lecture on the topic “The secret life of fungi and their immense potential” at Government High School, Palyewada Dadachiwadi, Dhargal, Pernem, Goa on February 16, 2026.

In the Pre-Conference Workshop on “Basic Lab Techniques for Mycology Students” held on October 26, 2025, at The International Conference on Microbial Technologies (ICMMT) - 2025 in Rajarata University of Sri Lanka.



Dr. Suraksha S. Dongrekar

Award

Awarded Grants under **Goa State Research Foundation (GSRF)** Minor Research Grant Scheme (2025-26) on topic “Indicator role of Phytoplankton in assessing water quality of Goan ponds” sanction amount Rs.2,00,000/- for two years.

Programmes attended

A DoPT, GoI sponsored training programme on ‘Climate Change’ from 9/9/23025 to 11/9/2025 organised by GIPARD, Ella Farm, Old Goa.

Training on ‘Master Trainers on Panchayati Raj’ under RGSA Scheme at GIPARD, Ella Farm, Old Goa.

One-Week Discipline Specific FDP on "Artificial Intelligence (AI) Tools for Pedagogical Enhancement in Higher Education" from January 12 to 16, 2026.

FEP on “Strengthening Research Culture in Higher Education: Initiatives and Guidelines” organised by Research and Development Cell, St. Xavier’s College, Mapusa, on April 1, 2026.

FEP on “Understanding Student Mental Health” and ‘Stress Management’, organised by Wellness Centre, St. Xavier’s College, Mapusa, on April 2, 2026.

Programme Organised

A one-Day State-Level Seminar titled “The Green Cure: Discovering the Power of Medicinal Plants”, organized by the Department of Botany, St. Xavier’s College, Mapusa, Goa, on February 24, 2026.

Resource Person

For Vidnyan Dhara, A Mega Science Series and delivered interactive lecture on the topic “Algae: The Fuel, Food, and Future Revolution” at Dnyanprassarak Vidyalaya, Mapusa-Goa on January 27, 2026.



Dr. Seema D. Fernandes

Programmes attended

FEP on “Strengthening Research Culture in Higher Education: Initiatives and Guidelines”, organised by Research and Development Cell, St. Xavier’s College, Mapusa on April 1, 2026.

FEP on “Understanding Student Mental Health” and ‘Stress Management’, organised by Wellness Centre, St. Xavier’s College, Mapusa on April 2, 2026.

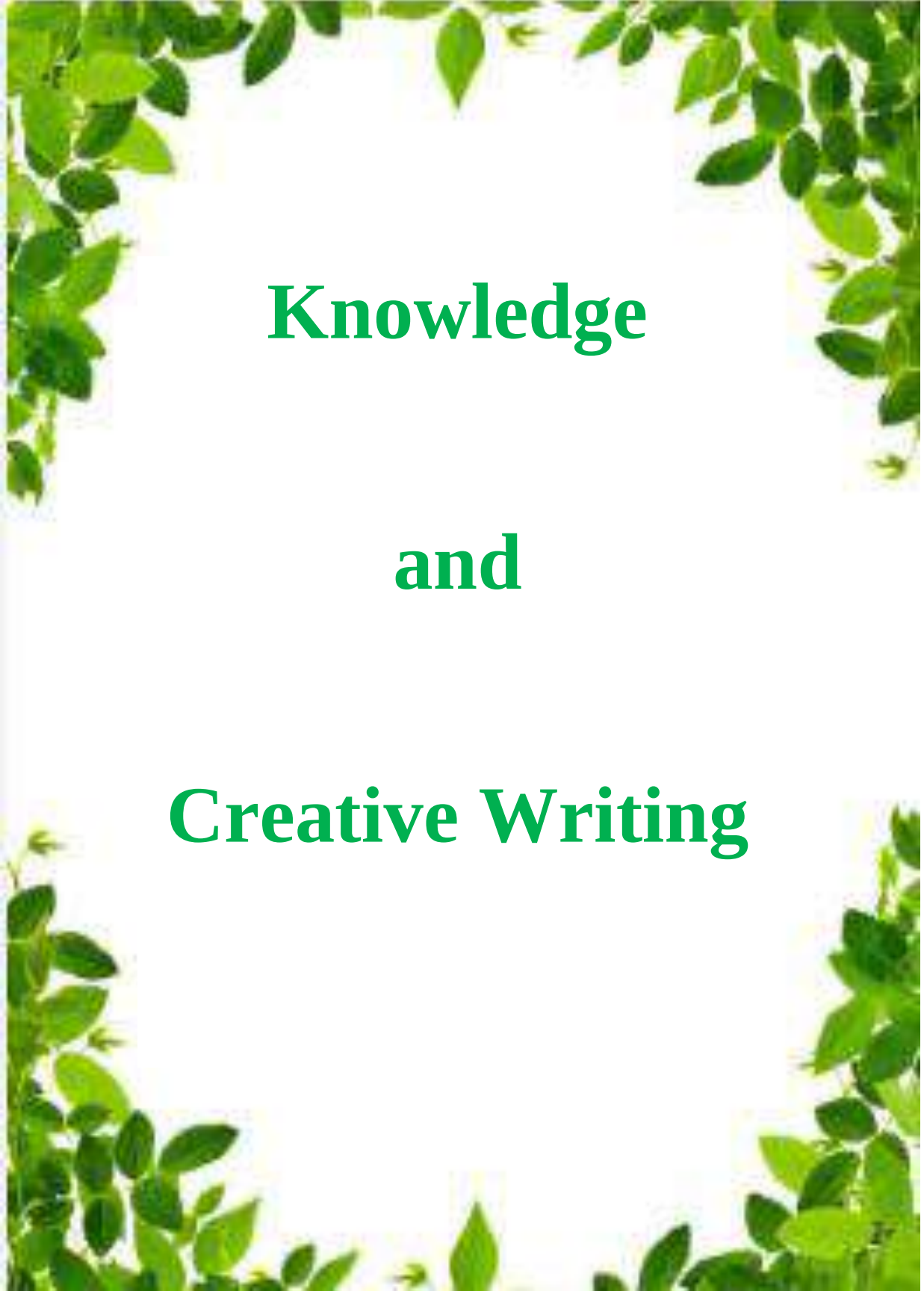
Programme Organised

A one-Day State-Level Seminar titled “The Green Cure: Discovering the Power of Medicinal Plants”, organized by the Department of Botany, St. Xavier’s College, Mapusa, Goa, on February 24, 2026.

Resource Person

For Vidnyan Dhara, A Mega Science Series and delivered interactive lecture on the topic “Vermicomposting A Natural Way to Manage Waste:” at Father Agnel Multipurpose High School, Verna-Goa, on January 9, 2026.





Knowledge

and

Creative Writing

Botany: Its Role in Education, Its Impact on the Environment and Daily Life

Introduction

Botany, the branch of biological sciences concerned with the study of plants, encompasses their structure, physiology, genetics, taxonomy, ecology, evolution and interactions with the environment. As primary producers, plants sustain life by converting solar energy into chemical energy through photosynthesis, generating atmospheric oxygen, sequestering carbon dioxide and supporting terrestrial and aquatic ecosystems. In the face of global challenges such as climate change, biodiversity loss, environmental degradation and food insecurity, botanical sciences have become indispensable for achieving ecological sustainability and improving human well-being.

Botany in Education

Botanical education provides a strong foundation in plant sciences while fostering scientific inquiry, critical thinking and environmental stewardship. It integrates diverse disciplines including molecular biology, genetics, microbiology, biotechnology, ecology, agriculture, pharmacognosy and environmental science. Practical training through laboratory investigations, field surveys, herbarium techniques and biodiversity assessments enhances research competency and analytical skills. Botanical education also promotes conservation ethics and equips students for careers in academia, agriculture, biotechnology, forestry, environmental management, pharmaceutical sciences, and biodiversity conservation.

Botany and Environmental Conservation

Plants play a fundamental role in maintaining ecosystem stability by regulating biogeochemical cycles, conserving soil and water resources and mitigating climate change through carbon sequestration. Botanical research supports biodiversity conservation by documenting plant diversity, conserving threatened species through *in situ* and *ex situ* strategies, restoring degraded habitats and identifying bio indicator species for environmental monitoring. Advances in plant ecology and conservation biology provide scientific evidence for ecosystem restoration, sustainable resource management and climate-resilient conservation policies.

Botany in Agriculture and Food Security

Botanical sciences underpin sustainable agriculture by improving crop productivity, resilience and nutritional quality. Research in plant breeding, genetics, physiology, pathology and soil–plant interactions has facilitated the development of high-yielding, disease-resistant and climate-resilient cultivars. Innovations in plant biotechnology, precision agriculture, integrated pest management and biofertilizers contribute to sustainable food production while minimizing environmental impacts and ensuring global food security.

Botany and Human Health

Plants remain one of the most important sources of therapeutic compounds and pharmaceutical agents. Numerous bioactive metabolites, including alkaloids, flavonoids, terpenoids and phenolics, possess antimicrobial, antioxidant, anti-inflammatory and anticancer properties. Scientific validation of medicinal plants through phytochemical and pharmacological research

has strengthened their application in modern medicine while supporting the conservation of valuable medicinal plant resources and traditional knowledge systems.

Botany in Daily Life

Botany influences nearly every aspect of human life by providing food, medicines, fibres, timber, beverages, spices, industrial raw materials and renewable bio resources. Urban vegetation, forests and green spaces enhance environmental quality by improving air quality, moderating urban temperatures, conserving biodiversity and promoting physical and mental well-being. The integration of botanical knowledge into urban planning, landscaping and ecosystem restoration contributes significantly to sustainable living.

Botany and Sustainable Development

Botanical sciences directly support the United Nations Sustainable Development Goals (SDGs), particularly those addressing food securities, health, climate action, biodiversity conservation and sustainable land use. Emerging technologies such as genomics, tissue culture, molecular breeding, bioinformatics, synthetic biology and conservation genomics are expanding the scope of plant research and enabling innovative solutions to global environmental challenges.

Future Perspectives

Future botanical research will play a pivotal role in developing climate-resilient crops, conserving genetic resources, restoring degraded ecosystems and discovering novel plant-derived bioactive compounds. The integration of artificial intelligence, remote sensing, genomics and systems biology will accelerate plant research and strengthen evidence-based conservation and sustainable resource management.

Conclusion

Botany is a multidisciplinary science that underpins ecological integrity, agricultural sustainability and human health. Its applications extend from biodiversity conservation and climate change mitigation to food security, biotechnology and medicine. Strengthening botanical education and research is essential for conserving plant diversity, promoting sustainable development and addressing the environmental and societal challenges of the twenty-first century. As humanity strives towards a greener and more sustainable future, botany will remain central to scientific innovation and environmental stewardship.

Dr. Seema D. Fernandes
Assistant Professor



Women Farmers: Unsung Heroes of the fields

When we think of a farmer, we often picture a man toiling in the fields under the hot sun, ploughing the land, tending to crops, and wiping the sweat from his brow after a long day's labour. This familiar image has long shaped our understanding of agriculture and who we perceive as a farmer. This narrow lens often tends to ignore the fact India's agriculture is being quietly carried on the shoulders of women, who remain largely invisible in policy, statistics, and social recognition. Women are thus mostly relegated to the role of farm labourers, support givers in agriculture and livestock. The gender gap in agriculture is substantial and prevents women from reaching their full potential and undermines agricultural production and rural development. Women are critical agents of change and resilience builders in the fight against rural poverty and food-nutritional insecurity.

The United Nations has designated 2026 as the International Year of the Woman Farmer to spotlight the essential goals women play across agri-food systems from production to trade, while often going unrecognised. As farmers, agricultural workers, food processors, traders, entrepreneurs and community leaders, women play a central role in rural economies, natural resource management and food production – they make significant contributions to food security, nutrition and the well-being of families and communities. Globally, women are reported to make up around 43% of agricultural labour, yet they control only a small fraction of land and resources, and are often excluded from credit, technology, and markets. The International Year aims to shift this imbalance by making women's contributions visible, amplifying their voices in policy, and strengthening women centred programmes.

In India, agriculture employs about 80% of rural women, with higher shares in some states such as Bihar and Uttar Pradesh. However, land ownership remains the most glaring inequality. As per the agricultural census, 2015-16, at the national level, only 14% of operational land holdings are owned by women, which amount to 11% of the total land in the country. This gap reflects patriarchal inheritance practices and limited success of land reforms. The phenomenon of “feminisation of agriculture” is also evident with men migrating to cities or to non farm work. However, this feminisation is not inherently empowering; it often means women manage more work without greater control over income, technology, or policy space. Although the majority of women are full time agricultural workers, yet they appear in records as “casual labourers” or “family helpers.” This invisibility directly translates into lower wages and weaker entitlements. Women are often paid less than men for the same tasks, and their work is not counted in household income. Their contributions—as seed savers, animal caretakers, and market linked producers—are treated as “natural” or “unskilled” rather than as skilled labour, which further entrenches economic dependence. Women are disproportionately

concentrated in the most physically demanding and time consuming tasks: transplanting paddy, weeding, harvesting, threshing, fetching water and fodder, and tending livestock and kitchen gardens. These activities are often back breaking, poorly compensated, and tied to seasonal spike. Women often work 10–12 hours a day in the fields, then perform household chores late into the night, with little rest or recognition. Mechanisation has largely favored male dominated tasks like ploughing and sowing, while “women’s tasks” remain labour intensive, reinforcing patterns of drudgery instead of shared farm work. Women’s exclusion as farmers and decision-makers limits their role in household and community decisions about cropping patterns, technology adoption, and market linkages. Men often control income from crops, while women bear responsibility for household food sufficiency and livestock, yet their insights are rarely considered into practice and policy dialogues.

In response to these challenges, the Government of India has introduced several schemes that explicitly target women farmers. Some of the schemes include Mahila Kisan Sashaktikaran Pariyojana (MKSP) under DAY NRLM, which is aimed at improving the productivity and income of women farmers by promoting agriculture-based livelihood options. It provides women with technical training, financial support, and a better understanding of sustainable agriculture. Sub Mission on Agricultural Mechanisation (SMAM), a component of Rashtriya Krishi Vikas Yojana, provides benefits for women, such as subsidised hiring or purchase of equipment that reduces drudgery. Another key initiative is the Namo Drone Didi scheme aiming to empower women-led Self-Help Groups (SHGs) by equipping them with drone technology to provide agricultural services. This initiative is expected to generate an additional income for each SHG, contributing to economic empowerment and sustainable livelihood.

Dr. Wendy F. Xavier Martins
Associate Professor



<https://baif.org.in/unsung-heroes-of-the-fields>

PLANT BIO-MIMICRY- Why the Humble Plants are- Our Best Shot at Saving the Planet

For nearly four billion years, plants have been running a silent, global research lab right under our feet. Because they can't pull up stakes and move when life gets tough, they've had to become the ultimate survivalist engineers. Without a single factory or computer, plants have mastered how to trap sunlight with flawless efficiency, purify water under extreme pressures, invent waterproof glues, and build structures that can weather fierce storms. Compare that to human manufacturing. Our current way of making things is in a bit of a crisis, heavily reliant on harsh chemicals, massive energy waste, and mountains of plastic that will outlive our grandchildren.

To fix this, a new generation of scientists and designers is trying a different approach. Instead of looking at plants as raw materials to chop down or harvest, they are looking at them as mentors. This field is called Plant biomimicry, and it is changing everything. By copying nature's brilliant botanical blueprints, we can stop just trying to "damage the planet less" and actually start living in harmony with it. Below will see some of interesting examples of Nature's Best Design Hacks and how we're stealing them.

1. The Lotus Leaf and the Death of Detergents

The Natural Genius: The lotus flower grows in muddy, stagnant swamps, yet its leaves always look pristine and dry. If you look at a lotus leaf under a microscope, it isn't smooth at all. It's a rugged landscape of microscopic, waxy bumps. Because of this texture, water can't flatten out or soak the leaf. Instead, it beads up into perfect little balls that roll off at the slightest breeze, gathering up dirt particles like a tiny, rolling vacuum cleaner.

The Human Spin-Off: Engineers have copied this "Lotus Effect" to create water-repelling house paints, stain-resistant fabrics, and self-cleaning coatings for windows and solar panels.

The Eco-Payoff: Imagine skyscrapers and solar farms that clean themselves using nothing but a rain shower. This tiny trick eliminates the need for millions of gallons of freshwater and harsh chemical detergents, keeping solar panels running at peak performance without human effort.

2. Mangrove Roots and the Search for Clean Water

The Natural Genius: Mangrove trees spend their lives submerged in coastal saltwater—an environment that would kill most ordinary plants. To survive, their roots use natural pressure to pull water inward while a network of specialized membrane proteins, called aquaporins, act like ultra-strict bouncers. They let water molecules pass through in a single-file line but completely block out (99%) of the salt.

The Human Spin-Off: Traditional desalination plants are massive energy hogs, using giant pumps to force seawater through artificial plastic filters. Today, water tech companies are harvesting these natural aquaporin proteins and embedding them directly into industrial filters.

The Eco-Payoff: Filters inspired by mangroves allow cities to purify brackish water and industrial waste using up to (40%) less electricity. It's a game-changer for drought-stricken communities that desperately need clean water but can't afford a massive carbon footprint to get it.

3. Rose Petals and Better Solar Power

The Natural Genius: Plants need every single scrap of sunlight they can get to photosynthesize, especially when they grow in the shade. The petals of dark roses are covered in tiny, cone-shaped cells. Instead of reflecting light away when the sun is low in the sky, these micro-cones bounce the light *inward*, trapping the energy within the petal.

The Human Spin-Off: Solar manufacturers are now embossing this exact micro-cone texture onto the top glass layer of solar panels.

The Eco-Payoff: Standard solar panels lose a lot of efficiency in the early morning and late afternoon because the sun hits them at a sharp angle. Rose-inspired panels naturally trap that low-angle light without needing heavy, expensive motorized tracking systems to follow the sun. It's a completely passive way to squeeze more clean energy out of the day.

How we can redesign the future from above examples—if we want to save our ecosystems, we have to move past the old "take-make-waste" mindset. Plant biomimicry gives us a roadmap to build a truly circular world across three major areas. By studying how **bamboo and trees** distribute their weight, keeping structures hollow but incredibly dense right where the physical stress is highest, architects are using 3D printing to design building pillars. By mimicking plant growth, we can cut down on building material weight and carbon emissions by up to (40%) without sacrificing safety.

Ditching the Toxin Habit: Think about the toxic glues used in furniture or the chemical paints used on cargo ships to stop barnacles from growing. By studying how English Ivy creates its own waterproof bio-glue, or how the **Pitcher Plant** creates an ultra-slippery surface that nothing can stick to, chemists are inventing biodegradable, toxin-free alternatives that won't poison our soil or oceans.

Zero Waste as a Rule: In a healthy forest, the concept of "garbage" doesn't exist. The fallen leaves of one tree become the fertilizer for a mushroom, which feeds an insect, which feeds the soil. Copying plants forces us to design products that can be easily taken apart, composted, or endlessly recycled back into the loop.

The Answers are already in the Plants - For centuries, human progress was measured by how well we could conquer and exploit the natural world. Plant biomimicry flips that old philosophy on its head. It asks us to stop treating nature like a warehouse of free stuff, and start treating it like the ultimate design consultant. As we face down climate change and resource scarcity, we don't need to reinvent the wheel. We just need to walk outside, slow down, and look a little closer at the leaves, roots, and petals that have been quietly keeping the Earth alive for millennia.

Dr. James D'Souza
Assistant Professor



The Fragrant Flora of Goa: A Symphony of Natural Aromas

Goa is renowned not only for its scenic beaches and lush forests but also for its rich diversity of fragrant plants that have been an integral part of the state's natural heritage and cultural traditions for centuries. The delightful fragrance of flowering trees, shrubs, herbs, and spices permeates the air throughout the seasons, attracting pollinators and enriching the cultural and ecological heritage of local communities. These fragrant plants are more than just pleasant smelling they play significant ecological, medicinal, and economic roles.



Among Goa's native and commonly cultivated aromatic plants are Jasmine (*Jasminum sambac*), Champak (*Magnolia champaca*), Indian Cork Tree (*Millingtonia hortensis*), Screw Pine (*Pandanus odorifer*), Holy Basil (*Ocimum tenuiflorum*), Lemongrass (*Cymbopogon citratus*), Vetiver (*Chrysopogon zizanioides*), and Curry Leaf (*Murraya koenigii*). Their flowers and leaves release natural volatile compounds that attract bees, butterflies, moths, and other pollinators, ensuring successful reproduction and maintaining ecosystem balance. Fragrant plants have long been valued in Goa's traditional medicine and daily life. Holy basil (Tulsi) is valued for its antimicrobial and immune-supporting properties, while lemongrass is commonly brewed as a refreshing herbal tea known to promote digestion and provide a calming effect. Vetiver roots are known for their cooling properties and are used in traditional remedies and perfumes. Jasmine and champak flowers are cherished not only for their enchanting fragrance but also for their calming effect and use in preparing natural oils and perfumes.

The cultural significance of fragrant plants is deeply rooted in Goan traditions. Flowers such as jasmine and champak are commonly offered during religious ceremonies and festivals, while fragrant garlands adorn homes, temples, and special occasions. Leaves of aromatic plants are also used in traditional cuisine, imparting distinctive flavours to local dishes. These plants continue to strengthen the bond between people and nature by preserving cultural practices that have been passed down through generations.

Despite their importance, many fragrant species face increasing threats from habitat loss, urbanisation, pollution, invasive species, and climate change.

Conserving Goa's fragrant flora requires protecting natural habitats, promoting the cultivation of native aromatic species, supporting community-based conservation initiatives, and encouraging sustainable harvesting practices. Educational institutions, botanical gardens, and local communities can play a vital role by documenting traditional knowledge, establishing medicinal plant gardens, and creating awareness among younger generations about the value of these botanical treasures. The fragrant plants of Goa represent a remarkable blend of biodiversity, traditional wisdom, and cultural heritage. Preserving these natural treasures ensures that future generations can continue to experience their beauty, benefit from their medicinal properties, and appreciate their ecological significance. By protecting our aromatic flora today, we safeguard an irreplaceable part of Goa's rich botanical legacy for tomorrow.

Dr. Suraksha S. Dongrekar
Assistant Professor



If Plants and Fungi Had a College Campus.....

Every college has its stars, backbenchers, overachievers, and that one mysterious student nobody has ever seen attending lectures but somehow always passes the exams. Surprisingly, the plant and fungal kingdoms are no different.

The Botany Department - Plants are undoubtedly the "toppers" of the biological world. They arrive early every morning, neatly dressed in shades of green, carrying out photosynthesis before breakfast. While the rest of us are still deciding whether to attend the 8:45 a.m. lecture, plants have already manufactured their own food, released oxygen, and looked aesthetically pleasing. If plants had attendance records, they'd probably have 100%. After all, they literally can't bunk class—they're rooted to the spot!

The Mysterious Fungi - They don't make their own food. Instead, they quietly wait for someone else to do the hard work and then politely (or not so politely) borrow

it. If plants are the college canteen chefs, fungi are the students asking, "Are you going to finish that?" But don't underestimate them. Without fungi, our campus would soon resemble one gigantic compost pile. Fallen leaves, dead branches, old notebooks, forgotten lunch boxes... fungi would patiently recycle everything. They are nature's housekeeping staff, except they don't ask for appreciation—they simply digest it.

Group Projects - Plants and fungi often work together in what scientists call mycorrhizae. Think of it as the most successful group assignment ever.

Plant: "I'll provide carbohydrates."

Fungus: "Great! I'll collect water and minerals."

Both: "A+ for teamwork."

Unlike many human group projects, everyone actually contributes.

The Introverts - Cacti are those students who bring a water bottle to every lecture and still refuse to share. "Sorry, I might need it later." They've mastered survival in difficult situations long before examination season.

The Social Butterflies - Banyan trees are the students who somehow know everyone on campus. With branches spreading in every direction and aerial roots dropping everywhere, they seem determined to occupy every available seat in the classroom.

The Overnight Celebrities - Mushrooms are the students who suddenly become famous overnight. One day there's nothing. The next morning—boom! A mushroom appears. Everyone asks the same question: "Where did that come from?" Even fungi prefer dramatic entrances.

The Fashion Society - Flowers clearly belong to the Fashion Club. Bright colours, Designer fragrances, Special events, professional photographers (also known as bees and butterflies). Their entire strategy is essentially: "Look attractive and someone will help you." Honestly, influencer culture existed long before social media.

The Silent Library - Grasses are the most underrated students on campus. Nobody notices them until they're gone. Imagine a world without lawns, rice, wheat, sugarcane, or bamboo. Exactly. The quiet ones often do the most work.

Examination Week - During exam season, students survive on coffee. Plants survive on sunlight. Fungi survive on almost anything. Including your forgotten sandwich at the back of the hostel cupboard.

The Lesson we learn

Plants teach us consistency. Every day they quietly perform photosynthesis without complaining about deadlines. Fungi teach us resilience. They thrive in places where few others can survive and remind us that even decay is part of creating new life. Together, they show that nature doesn't run on competition alone—it runs on cooperation. So the next time you walk across campus, don't just admire the trees. Spare a thought for the tiny fungi beneath your feet, working tirelessly behind the scenes. They may not win "Best Dressed," but they're certainly among the hardest workers in the ecosystem. And remember: if your biology practical culture suddenly grows something unexpected, don't panic. Congratulations—you've probably just made a new fungal friend.

Dr. Maria A. D'Souza
Assistant Professor



The Mystery of Poland's Twisted Forest

Imagine walking through a forest where every tree bends gracefully near its base before growing straight towards the sky. It looks as if an artist carefully shaped each trunk, creating a landscape that seems more like a scene from a fantasy novel than reality.

This remarkable place exists near the village of Now Czarowo in western Poland. Known as the Crooked Forest (Krzywy Las), it is home to around 400 Scots pine trees, each displaying the same unusual "J"-shaped curve. For decades, this mysterious forest has fascinated scientists, historians, photographers, and travellers alike.

The trees were planted around 1930, when the region was part of Germany. Today, although they are healthy and continue to grow normally, every trunk bends

sharply just above the ground before rising vertically. The fact that almost all the trees curve in the same direction suggests that this was no accident of nature.

Over the years, many theories have been proposed. Some believed heavy snowfall bent the young saplings, while others suggested strong winds. A few even imagined mysterious magnetic forces beneath the forest. However, none of these explanations fully accounts for the remarkable uniformity of the trees.

The explanation most widely accepted today is much simpler—and far more interesting. Forestry experts believe that local farmers or timber workers deliberately bent the young trees using wooden frames, weights, or other simple tools. Since young pine trees are flexible, they would have continued growing upward towards sunlight through a natural process called negative gravitropism, while retaining their curved bases.

But why would anyone shape trees on purpose?

Before modern construction materials became common, naturally curved timber was extremely valuable. It was used to build boats, wagon wheels, sled runners, furniture, and agricultural tools. Growing trees into the required shape was often easier and stronger than carving curves from straight logs.

Many historians believe the Crooked Forest was cultivated specifically for this purpose. However, the outbreak of World War II disrupted life across the region. Forestry operations stopped, people were displaced, and the trees were never harvested. Over time, the original purpose of the plantation was forgotten, leaving behind one of Europe's most intriguing botanical mysteries.

Beyond its scientific significance, the Crooked Forest is simply beautiful. In autumn, golden sunlight filters through the curved trunks, creating a magical atmosphere. Winter transforms the forest into a snowy wonderland, while misty mornings make the unusual shapes appear even more mysterious. It is no surprise that the forest has become a favourite destination for photographers and nature lovers.

The Crooked Forest reminds us that nature and human creativity often work hand in hand. Although no written records explain exactly who shaped these trees or how they did it, the evidence strongly suggests a remarkable example of forgotten forestry craftsmanship.

Nearly a century after the first saplings were planted, these extraordinary trees continue to inspire curiosity and wonder. They encourage us to look beyond what we see, ask questions, and appreciate the fascinating stories hidden within the natural world.

Sometimes, the greatest mysteries are not those that remain unsolved, but those that remind us how inventive people—and nature—can be together.



Prof. Maria A. A. R. Fonseca
HoD of Botany)



Miracle Berry: Sea-buckthorn

Sea-buckthorn (*Hippophae hamnoides*), also known as sand thorn, sallow thorn or sea berry, is a species of flowering plant belonging to family Elaeagnaceae. It is often called a “miracle berry,” or “super fruit” due to its high nutritional power and healing potential. It grows naturally in the cold, arid Himalayan regions of India, primarily in Ladakh (Indus river valley), Himachal Pradesh (Lahaul-Spiti, Kinnaur valley), and Uttarakhand. It thrives at altitudes between 1,200 and 4,500 metres. Sea-buckthorn provides habitat for various wildlife species. Its dense bushes offer shelter, while its nutrient-rich berries serve as a food source for birds and small mammals. The fruit has culinary uses, and its extracts, including its oil, is used in

the cosmetics industry. It is also used as animal fodder, in horticulture, and for ecological purposes.

Description: Sea-buckthorn is a hardy shrub that can grow between 2–5 metres. The young shoots and leaves are covered in small silvery scales. The upper side of the leaves darkens to mid to dark grey-green through the summer as the scales wear off, while the underside remains silvery. It is dioecious, with male and female flowers growing on different shrubs. The male inflorescence is built up of four to six apetalous flowers, while the female inflorescence normally consists of only one apetalous flower and contains one ovary and one ovule. The fruit is globose to oval in shape, 6–8 mm in diameter and grow in compact dense clusters. They are typically bright orange, but may vary from pale yellow to dark orange.

Pollination occurs solely via wind, so male plants have to be in vicinity of female plants for fertilisation and fruit production.

Phytochemicals: Sea-buckthorn berries are extraordinarily nutrient-dense and considered as among the most nutritious of all fruits. Fruit juice is rich in sugars, organic acids, amino acids, essential fatty acids, phytosterol, flavonoids, vitamins and mineral elements. Major sugars in sea-buckthorn fruit are fructose and glucose. The typical sourness of the fruit is due to high content of malic acid and astringency due to quinic acid. Sugar alcohol present in fruit is L-quebrachitol.

The Vitamin C content is 15 times higher than oranges. Besides it also contains vitamin A, vitamin E, Riboflavin, Niacin, Pantothenic acid, vitamin B2 and vitamin B6. Concentration of vitamins B2, B3, B5, B6, B12, C and E is much higher than other fruits such as apricot, banana, mango, orange and peach. Presence of these vitamins in high quantity indicates its strong antioxidant property, natural energy booster, immunity, heart health, and liver function.

The Plant contains omega 3, omega 5, omega 6, omega 7 and omega 9. The rare Omega-7 fatty acid is good for skin and digestive health. The berries also contain serotonin, beta carotene, uric acid, succinic acid and oleonol acid. The fruit is also rich in mineral content and contains 11 micro elements such as zinc, calcium and iron. Oil is present in the pulp and in seed of the fruit.

Nutritional & Health Benefits: Sea-buckthorn berries are widely used in Ayurveda, Traditional Chinese Medicine, and modern nutraceuticals. It is helpful for treatment of common problems like indigestion, throat infection, gynaecological problem, ulcer, gastritis, bronchitis, acidity, diarrhoea, hypertension, blood disorder, fever, tumour, gallstone, cough, cold, food poisoning etc. Flavonoids of Sea-buckthorn are considered to reduce cholesterol level and improve cardiac function.

It is available in India as various health products as sea-buckthorn juice, oil, capsules and jam.

Ms. Sabina M. Sales e Dias
Associate Professor



Sunset

I stand in silence looking at you
My God!!!
You are so beautiful
I love the way you fall
Softly losing space I follow you down
As you paint the sky
I wish we could so confidently follow your heart
Leaving only ripples of light
In your wake
My secret lover
How many times have I come here
With my sorrow you lift me up
When you fall...



Shreya S. Talwar
T.Y.B.Sc.

When the Earth Breathes Again

When the rain touches the earth for the first time,
I do not simply watch it fall
I watch life awaken

Each drop sinks into the soil,
Carrying hope to the roots, hidden in silence.
The seeds that slept through endless summers
Begin to dream of green again.

The leaves once weary and dull,
Stretch towards the sky as if greeting an old friend,
Tiny buds appear without a sound,
Yet their arrival speaks louder than words.

To many, rain is just weather,
To me, it is a lesson in survival,
A reminder that growth often begins
Where none is looking.

The forest does not celebrate with applause,
Nor do flowers announce their bloom.
They simply respond to the rain,
As life always responds to kindness.

Trisha Kaloji
S.Y.B.Sc.

MATOLI: More than a decoration- A celebration of Nature

Every Ganesh Chaturthi, homes across Goa come alive with the beautiful tradition of Matoli- a wooden canopy lovingly decorated with wild flowers, fruits, vegetables, medicinal herbs, roots, leaves and creepers gathered from Nature. More than festive decoration, Matoli is a heartfelt expression of gratitude to the forest that has nurtured generation.

In today's fast paced world, where many traditions have faded, Matoli reminds us to pause, step into nature and appreciate the incredible biodiversity that surround us. Each plant displayed tells a story of Goa's rich ecological heritage and reflects the wisdom of our ancestors who celebrated nature with reverence rather than exploiting it.

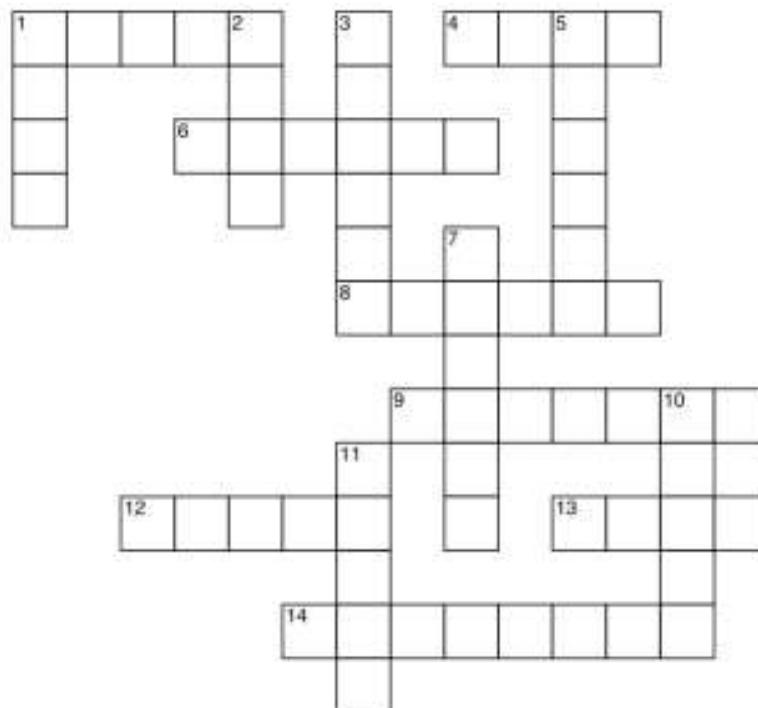
As we decorate the Matoli this Ganesh chaturthi let us also renew our promise to protect forest and preserve this beautiful tradition, so that future generation can continue to celebrate not just a festival, but Goa's living bond with nature.

“When traditions nurture, they become timeless” May Matoli continue to inspire generations to celebrate, respect and protect the environment.



Shloki Suresh Kerkar
T.Y.B.Sc.

Crossword



www.HaveFunTeaching.com

ACROSS

- 1 New plants grow from tiny _____.
- 4 Like all living things, plants _____ and change.
- 6 The _____ of a plant grow on the stem.
- 8 Roots hold plants in the _____.
- 9 Most plants have _____ that make seeds.
- 12 All plants need sunlight, food, and _____.
- 13 The stem carries _____ and water to all the parts of the plant.
- 14 Plants use _____ to stay healthy.

DOWN

- 1 A tiny _____ can grow into a beautiful plant.
- 2 The part of the plant that holds the plant up straight is the _____.
- 3 Plants are _____ things.
- 5 Plants give off _____ to help us breathe.
- 7 Insects carry _____ from flower to flower.
- 10 The _____ of a plant take in water and minerals from the soil.
- 11 Sometimes, a plant can grow _____ that we can eat.

WORD BANK: Flowers, food, fruit, ground, grow, leaves, living, minerals, oxygen, pollen, roots, seed, seeds, stem, water.