



# PLANTAE VOLUME-X

DEPARTMENT OF BOTANY  
ST.XAVIER'S COLLEGE  
MAPUSA-GOA

2021-2022



# **St. Xavier's College**

**Mapusa-Goa**



## **PLANTAE**

**Department of Botany**

**Volume X**

**2021-2022**

# **PLANTAE**

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## **DEPARTMENT OF BOTANY**

### **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.***

## PRINCIPAL MESSAGE



I am extremely glad to pen down a few words of mine in honour of the release of the Newsletter “PLANTAE” Volume No. 10, by the Department of Botany of our College during the Academic Year 2021-2022.

I heartily congratulate all the contributors of articles published in this Newsletter, as well as the organizers of the training on Herbarium techniques, Lecture Series, Workshops, Outreach program, Field trips, Certificate Course this academic year.

I place on record a word of Appreciation to the Editorial Team for this beautiful annual publication.

God Bless All your future endeavors too.

*Prof. Blanche Mascarenhas*

*Principal*

*St. Xavier's College, Mapusa-Goa*

## ADMINISTRATOR MESSAGE



As I write these few words for the newsletter of the Department of Botany, 'Plantae' my first words would be of congratulations to the HOD and the faculty for the novel ways engaged in teaching the students and making the study of Botany interesting, through guest speakers, field trips, and more especially teaching the students the art of growing bonsai, techniques of mushroom cultivation, and certificate course in homemade herbal products. These in themselves can generate for the students self-employment opportunities, if they take these studies as learning for life, and not simply as a short time gain for passing their examinations. While mushroom cultivation helps in the gastronomic delights, the use of herbals can have a salutary effect on our health. Today, there is a lot of study going on in the use of our traditional methods for cure of various ailments and which were successfully used by our people in the not-so-distant past. There is a revival of interest in these herbal medicines due to the many fold side effects that are generated by the allopathic medicines. There is no gainsaying that the allopathic medicines have worked wonders and have saved innumerable lives and continue to do so.

However, the side effects have cast a long shadow and more and more people are veering towards the traditional home medicines which helped our ancestors to lead a healthy life. The only unfortunate part is that, the projects launched by the Government and the expansion of real estate have gobbled up a lot of these medicinal plants. Hence, the knowledge gained, could be used by the students to create herbal gardens in their own backyard by sourcing the plants from places

across Goa with the help of our elders who still have the mastery over these plants and the various ailments they can be used for. We would like to further expand this knowledge by having our own garden, over which the faculty is working with great interest. I hope we succeed in our venture before long.

Once again congratulations to the Department of Botany for all their efforts and to the students who take great interest in carrying forward and applying their knowledge in their day to day life.

God bless you all.

*Fr. Antonio F. Salema*

*Administrator*

*St. Xavier's College, Mapusa-Goa*

## **FROM THE EDITOR'S DESK**

The Department of Botany releases yet another issue of 'Plantae', indeed a matter of pride to present our tenth issue.

Plantae explores the amazing and peaceful world of plants also providing insights of their 'magical' uses. There is quote which says "Be like a tree. Stay grounded. Connect with your roots. Turn over a new leaf. Bend before you break. Enjoy your unique natural beauty. Keep growing".

I take this opportunity to thank all my colleagues and students for their valuable contribution. Hope this newsletter makes an interesting and enjoyable reading to all our readers.

*Dr. Suraksha S. Dongrekar*

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# *The Marvel-of-Peru Mirabilis jalapa*

**Kingdom:** Plantae

**Order:** Caryophyllales

**Family:** Nyctaginaceae

**Genus:** *Mirabilis*

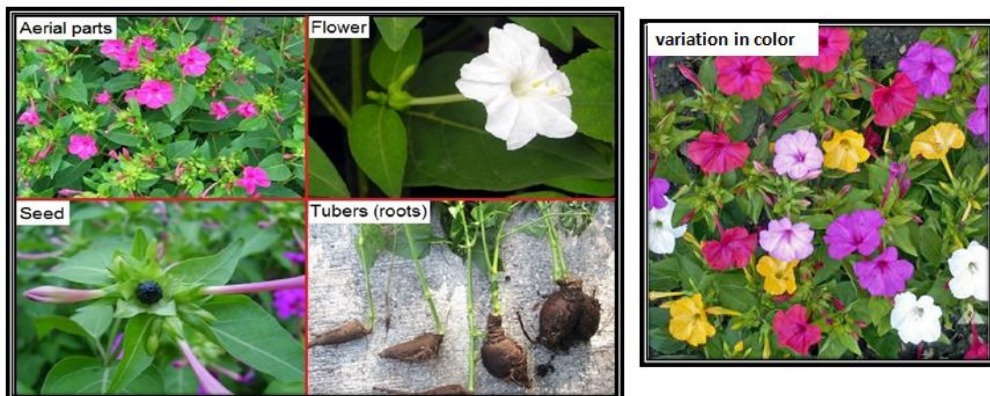
**Species:** *jalapa*

## **Description of plant:**

The plant is commonly called as four-o'clock, also called marvel-of-Peru, or Beauty-of-the-night, is an ornamental perennial plant, native to tropical America. Four-o'clock is a quick-growing species up to one metre (three feet) tall, with oval leaves on short leafstalks. Four o'clock flowers are trumpet shaped, with variations in color (Orange, Pink, Purple, Red, White and Yellow) and bicolored flowers can also be grown. Plant can be propagated through leaf cuttings, seeds and tubers. The common name of four o'clock was given to *Mirabilis jalapa* because the flowers of this plant do not open until late in the day (and close by morning).

## **Uses:**

1. The root is believed to be an aphrodisiac as well as having diuretic and purgative properties. It is also used in the treatment of dropsy.
2. The leaves are used to reduce inflammation.
3. The flowers are used in food coloring. An edible crimson dye is obtained from the flowers to color cakes and jellies.



*Jerald Jackie Rodrigues S.Y.B.Sc. (2021-22)*

## Trees are our Best friends

It is truly said that trees are our best friend. They are one of greatest blessings for humans from mother earth. Trees play a crucial role in ecology of this planet. Earth will be a desert without greenery. Trees offer various benefits, share their beautiful flowers, tasty fruits. Trees give us oxygen to survive. They protect us from the natural calamities like earthquake, thunderstorm and flood. Trees give us peace beneath their shade. They provide us timber and paper. We use timber to construct houses, compartments and various tools.

Many birds and creatures also take shelter in trees. They make nests on top of trees where they live and lay eggs. The rotten leaves of trees make the land fertile. Trees are the best guardians of our environment and without them, this ecosystem will fall apart. So it is our prime responsibility to look after these our best friends who give us everything without asking anything in return. Very important thing to remember by saving trees, we are not doing any favor to them but ourselves only.



*Dr. Suraksha S. Dongrekar*

*Assistant Professor*

## The Miracle Leaf – *Bryophyllum calycinum*

**Scientific name:** *Kalanchoe pinnata* (Lam.) Pers.

**Family:** Crasulaceae

**Synonyms:** *Bryophyllum calycinum*, *Crassula pinnata*, *Bryophyllum pinnatum*.

**Sanskrit:** Patharchatta is known as Pashanabheda.

**Common name:** Life Plant, Mother of Thousands, Miracle Leaf, Cathedral Bells, air plant, wonder of the world.

**Local Konkani name:** Phatar phod zhad.

**Introduction:** *Bryophyllum* is also known as *Kalanchoe*, is a perennial succulent plant widely grown in India. It is commonly known as an 'air plant,' as it has tall hollow stems. *Kalanchoe* has bell-like pendulous flowers and dark fleshy green leaves. Patharchatta is grown in temperate regions of Asia, the West Indies, Australia, New Zealand, etc. It is a medicinal plant known to be a host of therapeutic nutrients.

The plant is called as miracle leaf. It has the ability to produce plantlets on their leaves or floral stems. This little plant is called 'Leaf of life' for its life-enhancing properties and medicinal value as it is used to treat shortness of breath, asthma, bronchitis and even kidney stones. In Ayurveda, the patharchatta has a fascinating name – Pashanabheda, which translates to 'dissolve of stones'.

### Nutritional Value:

*Bryophyllum* may be rich in bioactive compounds like alkaloids, glycosides, flavonoids, cardienolides, triterpenes, bufadienolides, lipids, and steroids.

### Medicinal Values:

- *Bryophyllum* is traditionally used for the treatment of kidney stones and urinary insufficiency. Its extract may be used to expel kidney stones from the body. Kidney stones which are made up of calcium oxalate crystals can be dissolved by saponins present in the *Bryophyllum* plant.
- Extracts helps in decreasing the body weight caused by ethylene glycol-induced renal calculi (kidney stones).
- Extract also decreases uric acid, urea, serum creatinine, phosphorus, calcium and magnesium levels.
- Traditionally *Bryophyllum* leaf is used to treat gastrointestinal disorders such as diarrhoea and dysentery.

- *Bryophyllum* plant extract shows antimicrobial activity against various pathogens. source: ncbi.nlm.nih.gov
- Leaves has neurosedative and muscle relaxant properties which calms the nerves and ease the tensed muscles. These leaves might also have the power to regulate uterine contractions and help lower blood pressure.

The leaves of *Bryophyllum* plant have the power to work miracles with all its inbuilt biotic compounds and have potential to cure many diseases.



*Dr. Seema D. Fernandes*  
*Assistant Professor*

## Medicinal Herb – Coriander

*Coriandrum sativum*, commonly known as Coriander belongs to the family Apiaceae (formerly Umbelliferae). Coriander, common name for an annual herb of the parsley family that grows to a height of about 30 to 90 cm (about 12 to 36 in). The lower leaves are divided into fine, threadlike partitions (decompound); the white and pink flowers grow in small, loose clusters (compound umbel). Native to Europe and Asia Minor, coriander has become naturalized in the United States. It is cultivated for its fruit, the dried seeds of which, also called coriander, are used as a spice in a wide variety of foods, and for its pungent leaves, called cilantro, a basic ingredient in Latin American and Asian cooking. Oil that is extracted from the seed is used in the preparation of liqueurs and is a medicine for abdominal discomfort.



*Kshitij Kumar*

*S.Y.B.Sc. (2021-22)*

## Toothache – Natural remedy Hercules' Club

*Zanthoxylum clava-herculis* commonly known as Hercules' club or Southern prickly ash belongs to the family Rutaceae. Hercules' club, is a deciduous shrub or tree (a shrub or tree that loses all of its foliage each year) native to the Southeastern United States from Virginia to Florida and west into eastern Texas. It grows most often in moist, sandy soils near shorelines and streams. The common name refers to the stout, spiny branches that resemble the weapon of the Greek hero Hercules; other common names for this plant are pepperwood and toothache tree. The leaves and bark produce aromatic oil that can cause a stinging or numbing sensation on chewing which is used as a home remedy for toothache pain.

The stem and leaflet stalks are often armed with short spines. The small, greenish-yellow flowers are arranged in large clusters, up to 20 cm (8 in) long, with male and female flowers on separate trees. The female flowers develop into clusters of tiny, reddish-brown fruits. Each fruit contains a single, shiny black seed.



*Niyati Gadekar*

*F.Y.B.A. (Botany GE)*

*(2021-22)*

## Training on Herbarium Techniques

The “Training on Herbarium Techniques” was conducted on 09<sup>th</sup> May 2022 under the DBT Star College Scheme by the Department of Botany, St. Xavier’s College Mapusa, Goa. Resource person was Dr. Harshala Gad, Assistant Professor St. Xavier’s College Mapusa, Goa. The training session was held in the Botany Laboratory and was attended by 29 (FYBSc. SYBSc and T.Y.B.Sc.) students and 07 teachers of Botany.

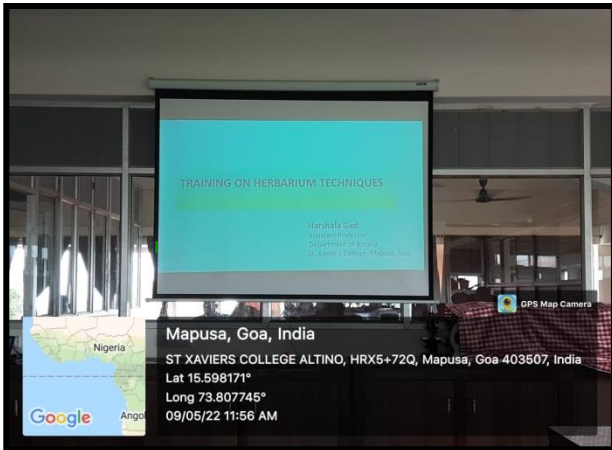
The training began with a short introduction on Herbarium history, importance of herbarium and Fr. Palithanam herbarium collection. Dr. Harshala Gad delivered a detailed lecture on herbarium techniques which included the i. Collection of plant specimens ii. Pressing iii. Drying and Poisoning iv. Mounting v. Labelling vi. Filling and deposition in herbarium cabinets and vii. Maintenance.

The theory session was followed by practical demonstration of pressing of herbarium specimen, drying, poisoning, mounting and labelling. Participants were shown the equipment utilised for collection of plant specimen. Resource person explained the use of plant press, field note book and also demonstrated how to prepare and use specimen tag, fragment packets and flexostat.

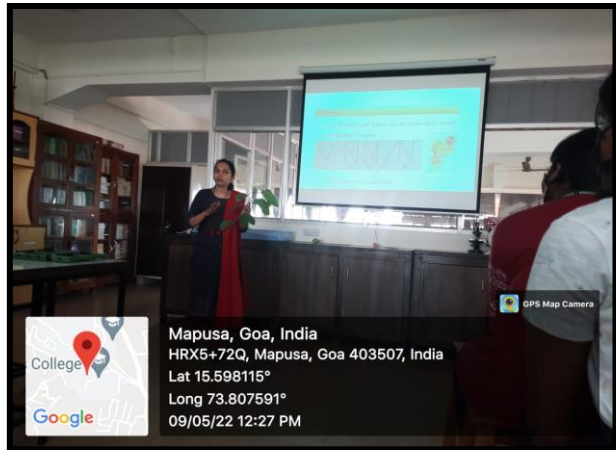
During the training, emphasis were laid on precautions to be taken during collection in the field and while poisoning plant specimen. The participants were shown blotting papers, species cover, genus cover and herbarium mounting sheets.

The students and teachers actively interacted with the resource persons during the training session. The resource person Dr. Harshala Gad guided participants while they tried their hands on preparation of plant herbarium. Student participants expressed that they were immensely benefited by attending the workshop and also said that the detailed demonstration of methodology involved in preparation of plant herbarium was of practical use to them. The feedbacks were received from the students in a prescribed format.

Report written by Ms. Smruti Pathak, Assistant Professor, Department of Botany, St. Xavier’s College, Mapusa, Goa.



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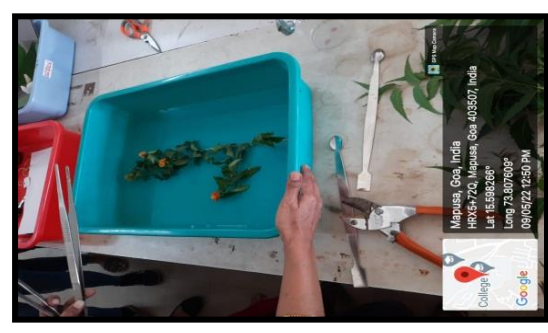
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## The Goa Science Lecture Series 2022

To celebrate National Science Day 2022 and to commemorate the discovery of the ‘Raman Effect’ Government of India designated 28<sup>th</sup> February as National Science Day (NSD) in 1986. On this occasion, theme-based science communication activities were carried out all over the country. The theme of National Science Day 2022 was **‘Integrated Approach in Science and Technology for a Sustainable Future’**. With an endeavor to promote scientific attitude among budding young students, the State Higher Education Council under the Directorate of Higher Education organized a **“Science Lecture Series 2022”** from 7<sup>th</sup> to 15<sup>th</sup> March 2022 in collaboration with Science colleges in Goa. A total of 60 lectures were organized in form of lectures, demonstrations, exhibitions, etc.

Dr. Maria D’Souza, Assistant Professor, St. Xavier’s College was selected as a resource person for this event to deliver the lecture at Goa College of Home Science on 08<sup>th</sup> March 2022. The lecture began at 11.00 a.m. Dr. Maria A. D’Souza was welcomed by Dr. Mahesh Pai, the Principal of Home Science College and further introduced to the students by Ms. Mitsi, Assistant Professor, Home Science College. Following which Dr. Maria delivered the lecture titled **“Exploring Fungal Diversity for its Immense potential”** at the Goa College of Home Science, Campal, Panaji, Goa. The lecture was attended by 31 students from First Year, Second Year and Third Year B.Sc. classes including the faculty from the college. After the lecture a question answer session was held for further interaction with the students. The programme ended at 12.00 p.m. by vote of thanks proposed by Ms. Larissa Rodrigues, Assistant Professor, Goa College of Home Science. The lecture was well appreciated and the students gained knowledge on the diversity and application of micro fungi.



*Dr. Maria A. D'Souza*

*Assistant Professor*

## Workshop on “Art of growing Bonsai”

A workshop on the “Art of growing Bonsai” was conducted on 16<sup>th</sup> April 2022 by the Department of Botany under the DBT Star College Scheme. The resource person was Dr. Devidas Kotkar. The workshop conducted was attended by 38 students and 10 teachers.

There was a brief inaugural before the workshop, which began with the Head of Department Ms. Sabina Dias welcoming the participants and the resource person; Principal of the college Prof. (Dr.) Blanche Mascarenhas in her address congratulated the faculty of the department of Botany for organising the workshop and exhorted the participants to make the most of the session. Dr Wendy Martins introduced the resource person, Dr. Kotkar as a multifaceted personality and educationist, researcher, wildlife photographer and environmentalist.

Dr. Kotkar explained to the participants, the various styles of bonsai with the help of bonsai brought from his home and with a power point presentation. The participants were shown various tools and requirements that are needed to grow bonsai. Dr. Kotkar demonstrated the technique of wiring and explained in detail, the ways by which wiring helps to give shape to the bonsai.

The latter part of the workshop focused on the various pots/containers used in making a bonsai, preparation of soil and potting of bonsai plant. Throughout the workshop, the participants were given a chance to practice whatever was demonstrated and taught. Dr. Kotkar answered various queries put forth by the audience. The feedback was taken from the students and they were satisfied with the training.

The workshop ended with a vote of thanks by Ms. Arvisha Petkar, faculty at the department of Botany.



## Field Trip to ICAR

A Field trip to ICAR-CCARI (Central Coastal Agricultural Research Centre, Old Goa) was conducted by the Department of Botany, St. Xavier's College, Mapusa on 21<sup>st</sup> May 2022 under DBT Star College Scheme,. The field trip was organised by Ms. Sabina Sales e Dias and accompanied by Dr. James D'souza and Dr. Suraksha Dongrekar. Thirty one students from S.Y.B.Sc attended the same and reached ICAR at around 2:00 pm. The main objective of the field trip was to know about the institute and various facilities provided. They were guided by two ICAR representatives, Dr. Vijay D'souza (SRF) and Mr. Edward Castro (Field Assistant). During the first half of the session, Mr. Edward introduced the ICAR institute then he took the students around the institute to see the different type of work that is going on.

Dr. Vijay D'souza showed different local and hybrid varieties of *Mangifera indica* (mango). Some of local varieties like Mancurad, Malgush etc. and the hybrid varieties including Mallika, Sindhu, Pusa, Pitamber etc. They have around 110 varieties of Mangoes. Many varieties of *Heliconia* plants were grown although being non-fragrant their flowers are costly. They represent flamingo birds. The students saw various plant species like *Areca nut* (Beetel nut) variety like Mangala, being medicinal they are also planted as aesthetic plant. *Morinda citrifolia* (Noni) plantation were also there which to have cancer and diabetes treating properties. The pink and red Lily plantation was so attractive with artificial texture and along with it Avocado plantation was also seen.

Most of the spice plants and other plants like *Cinnamomum verum* (Cinnamon), *Laurus nobilis* (Bay leaves), *Myristica fragrans* (nutmeg), *Coffea Arabica* (Coffee), *Moringa oleifera* (drumstick), *Amorphophallus paeonifolius* (elephant foot), *Musa paradisiaca* (banana) were planted close to one another within an area. Dr. Vijay D'souza told that these are cultivated plants fetch additional income for the farmers. Different varieties of *Amorphophallus* were found.

Multivitamin plant *Chekurmanis*, source of vitamin C, *Garcinia* and Cherry trees were also grown. Dr. Vijay D'souza showed us fishery ponds, aquariums and most important they have established Aquaponics system an innovative technique. He introduced to us various animal units like piglets units, two varieties of rabbits namely *Sapphire Chinchilla* and New Zealand white. Japanese quails, Poultry farms. To feed animals fodder plants were also cultivated like

*Mulberry* for goats, other grass varieties like *Alfa Alfa*, *Sorghum*, *Guinea grass*, *Maize* were cultivated for rabbits, cows etc.

Students visited the laboratory where soil sample testing is done. The lab in charge Ms. Sulakshana briefed about different techniques used to study the chemical, physical and biological parameters of soil. Various testing machines like Nitrogen analyzer, flame photometer, water purifier were introduced to the participants. She also mentioned the physical parameters like water holding capacity and deficiency symptoms of certain elements in plants and also how to overcome it.

The students enjoyed the trip, learnt some new techniques and gained knowledge and information on plants.



## **Talk and Presentation On “Global Environmental Crisis –Act Or Perish”**

A talk and presentation on the topic “Global Environmental Crisis –Act or Perish” by Ms. Maria Beatriz De Souza, Associate professor in Botany was held under the DBT Star College Scheme for the students of S.Y.B.Sc Div.1 and Div 2 on 24<sup>th</sup>March 2022 and 6<sup>th</sup>April 2022 respectively. A total of 139 students attended.

Before beginning with the talk, the students were asked to list what they considered to be the most important global environmental issues. The talk focused on various issues and problems that the world is facing today-global warming and climate change, pollution, loss of biodiversity, ozone depletion, deforestation, and overuse of critical natural resources. Various ways to combat and tackle the environmental challenges and issues were discussed. The presentation was interspersed with pictures of deadly environmental disasters. The audience were asked to calculate their carbon footprint, taking a personal inventory of their own impact on the planet with respect to the environment.

The latter part of the talk laid stress on solutions to combat the various environmental issues and how each one can contribute to help reduce the global environmental problems. The students suggested various measures that they could implement and each of these were discussed like using energy more efficiently, traveling smarter- choosing a cleaner commute, use carpool ,public transport or walk; shopping smarter- getting reusable bags to the stores ,avoiding plastics, supporting companies driven by sustainability ;disposing of the garbage responsibly.

The take home message was clear now, more than ever, our planet needs us to step up and take immediate action to protect the environment, each of us need to contribute to that before it is too late.



*Ms. Maria Beatriz Desouza*  
*Associate Professor*



## Workshop on Mushroom Cultivation

A workshop on Mushroom cultivation was held on 26<sup>th</sup> March 2022 under the DBT Star College Scheme. It was a Hands on training session wherein the students were taught to cultivate mushrooms. There were 41 participants from S.Y.B.Sc. and T.Y.B.Sc Botany. The resource person was Ms. Sabina M. Sales e Dias, Associate Professor, Department of Botany. The students were first briefed on the nutritional benefits of mushrooms and the technique of cultivation of Oyster mushroom (*Pleurotus sajorcaju*), how they can grow at home. The entire process of the preparation of substrate, i.e., paddy straw was done in the laboratory. The students filled the polythene bags with the paddy straw and the spawn. About 23 bags were made by the students. The students were very enthusiastic and took the bags home to observe the growth of the mushrooms. The feedback was taken from the students and they were satisfied with the training.



*Ms. Sabina M. Sales e Dias*

*Associate Professor*

## Field visit to Zonal Agricultural Farm Duler

Field trip is essential part of Botany curriculum, through field excursion students get exposure to surrounding where they can experience nature and observe plants closely in their natural habitat. Studying plants in their natural habitat enhances student's practical knowledge that is learnt from the classroom discussions.

On 31<sup>st</sup> March and 1<sup>st</sup> April 2022 total 13 students of S.Y.BSc (SEC) and T.Y.BSc Botany accompanied by teachers Ms. Sabina Sales e Dias, Dr. Harshala Gad, Dr. James D'Souza, Dr. Maria A. D'Souza, Dr. Suraksha Dongrekar, Ms. Smruti Pathak and Ms. Arvisha Petkar visited the Zonal Agricultural Farm (ZAF) at Duler, Mapusa, Goa.

The students and the teachers were welcomed by the staff of the ZAF. Later Assistant Agricultural Officer Mr. Rudresh Kambli took students around the farm and explained and demonstrated various plant propagation techniques such as cutting, grafting air layering and also showed students to prepare pot mixture.

Later students were taken to the plot where seedlings of two Goan local coconut varieties (Benaullim and Calangute) were raised on large scale. They were also shown manuring of *Areca catechu* (areca nut). Students were taken to compost shed and vermicomposting procedure was explained to them. Students were demonstrated the use of Coconut Tree Climber Machine.

Students were taken to the nursery where different types of seedlings and ornamental plants are raised and propagated. They were also explained the concept of growing Bush pepper (*Piper nigrum*).

Teachers showed them different types of spice plants like Nutmeg (*Myristica fragrans*), Cinnamon (*Cinnamomum zeylanicum*), Clove (*Syzygium aromaticum*), Allspice (*Pimenta dioica*), Turmeric (*Curcuma longa*) and Black pepper (*Piper nigrum*) and explained their uses. They also saw cultivated plants

of commercial value such as Avocado (*Persia americana*) Banana (*Musa paradisiacal*), Mango (*Mangifera indica*), Pineapple (*Ananas comosus*), Figs (*Ficus carica*), and two varieties of Chickoo cricket ball and kalli patti (*Manilkara zapota*), (Soursop) *Annona muricata*, Arecanut (*Areca catechu*), Noni (*Morinda citrifolia*), Breadfruit (*Artocarpus incisa*), and Jackfruit (*Artocarpus heterophyllus*).

As a result of this field trip, students were enriched with practical experience and learned the different techniques related to cultivation of economically important plants.



**Dr. Harshala Gad**  
**Assistant Professor**

## Outreach /Extension Activity

Under DBT Star College Scheme, the Department of Botany, of St. Xavier's College, Mapusa Goa conducted an Outreach/extension activity at the premises of Sacred Heart Of Jesus High School, Anjuna-Goa. The said activity was conducted on 29<sup>th</sup> March 2022 at 12 noon onwards. Mrs. Sabina Sales e Dias delivered the lecture and demonstrated the technique of "Mushroom Cultivation". It was attended by 17 beneficiaries which included teaching and non-teaching staff of the School.



*Dr. James D'Souza*  
*Assistant Professor*

## “Know Your Plant”

“Know your plant activity” is a departmental activity organised by Botany Department from November 2021 to May 2022. Dr. Suraksha S. Dongrekar along with T.Y.B.Sc. Botany & S.Y.B.Sc. SEC students coordinated the display of plants of economic, medicinal and commercial importance. The plant was displayed outside the department along with the information and kept for a week for the students and teachers. In the first half i.e. from November 2021 to January 2022, five plants were displayed (*Artocarpus heterophyllus* Lam, *Andrographis paniculata* Burm.f., *Coleus ambonicus* Lour., *Rauwolfia serpentina* (L.) Benth. Ex Kurz, *Polyscias fructicosa* (L.) Harms) and in the second half another four plants were displayed (*Cymbopogon citratus* (DC. Stapf. *Aloe vera* (L.) Burm.f., *Eleusine coracana* Gaertn. *Andrographis paniculata* Burm.f.).

Plants which were displayed are listed in the table below:

Sr. No.	Name of the Plant	Family	Common/Vernacular name	Name of Students
1.	<i>Artocarpus heterophyllus</i> Lam.	Moraceae	Jack tree, Jack fruit	Ms. Geeta Mestry
2.	<i>Andrographis paniculata</i> Burm.f.	Acanthaceae	Green Chiretta, Kiraite	Ms. Riya Gawade
3.	<i>Coleus ambonicus</i> Lour.	Lamiaceae	Mexican mint, Indian borage	Ms. Priyanka Sinari
4.	<i>Rauwolfia serpentina</i> (L.) Benth. Ex Kurz	Apocynaceae	Sarpagandha	Ms. Vijaya Pundge
5.	<i>Polyscias fructicosa</i> (L.) Harms	Araliaceae	Passley aralia	Ms. Saloni Revodkar
6.	<i>Cymbopogon citratus</i> (DC. Stapf.)	Poaceae	Lemon grass	Ms. Pallavi Chodankar
7.	<i>Aloe vera</i> (L.) <u>Burm.f.</u>	Liliaceae	Ghritkumari	Ms. Rashveeta Gadekar
8.	<i>Eleusine coracana</i> <u>Gaertn.</u>	Poaceae	Finger millet	Ms. Devakka Lamani

Department of Botany  
Know Your Plant  
2021-2022

*Know Your Plant*



*Dr. Suraksha S. Dongrekar*  
*Assistant Professor*

## Certificate Course on 'Homemade Herbal Products'

The Botany Department of St. Xavier's' College organised a seven-day certificate course titled "**Homemade Herbal Products**" dated from 2<sup>nd</sup> to 9<sup>th</sup> July 2022 under the DBT star college scheme. This course is designed for students and beginners not having much knowledge about the various uses of herbs, and to hands on training on various techniques of preparing soap base, herbal soaps, making herbal shampoos, herbal oils, natural food colours, herbal hand wash, Keratin treatment for hair, henna for hair and face packs from naturally available plant materials. Day one of the workshop started with a detailed lesson on "How to make Herbal Soaps Base at home" conducted by Dr. Suraksha Dongrekar. Two types of soap bases were prepared by students. First one was Ultra Clear Transparent Glycerine based soap base and second was White Opaque Glycerine based soap base. In both the soap bases Caustic soda (Sodium Hydroxide) and Coconut oil acts as base. Both are used as melt and pour soap bases. Citrus fruits are rich source of Vitamin C and rich in Antioxidants and when these ingredients are used in making soaps which will help to moisturize the skin. On the second day students were taught to make ten different types of soaps i.e. Orange Zest soap, Lemon Zest soaps, Potato soap, Papaya soap, Aloe vera soap, Rice soap, Goat milk Marble soap, Tomato soap and Coffee soap. Lemons and Oranges are as one of the superstars in the citrus world, provide a dose of the free radical fighting antioxidant vitamin C, which helps keep skin even-toned and helps boost the body's immune system. The juice of a lemon is a natural alkalizing agent, and helps to maintain a steady pH balance in the body.

Potato soap is very important to brighten and lighten your skin. It contains fresh potato water. As potato are rich antioxidants and helps in removing unwanted tan and dullness of skin. Papaya consists of an enzyme called papain which promotes healing of the skin. The papain enzyme in papaya has skin cleansing properties which makes it one of the best beauty ingredients to be used on your skin. The fruit helps remove dead skin cells to get rid of clogged pores, prevents acne and gives your skin a dewy glow. Also enhance the secretion of collagen when used topically for the skin. Collagen is a primary skin component that keeps the skin healthy and enhances skin elasticity.

Rice soap has its whitening effects on skin. It helps diminish dark spots, lighten your scars, moisturizes skin, gives your skin a glow and helps remove excess oil. Rice milk impart a whitening effect on skin. Rice milk cures dark lips,

if you use it regularly. Due to its lactic acid content, goat milk soap may help control or prevent acne. Lactic acid is a natural exfoliant that gently removes dead skin cells, which helps prevent acne by keeping pores clear of dirt, oil, and excess sebum. Goat milk soap is gentle and may help maintain the skin's moisture. Coffee soap helps in anti-aging, exfoliant and cellulite reduction. Cancer Combatant - Roasted coffee beans are rich in Vitamin B3, also known as Niacin. B3 is thought to fight non-melanoma skin cancers and other growths on the skin. Utilizing a coffee cleansing bar supports this cancer fighting behavior. Reduce dark Circles around your Eyes and protect Skin from Sunburn. Prevent Rosacea Flare Ups.

The entire third day of the course was utilized for making Natural Herbal Shampoo. Students were enlightened with the importance of Shampoo. Hair is non-living, made up of protein called Keratin. Dry and damaged hair is often a cause of concern for beauties. Further high pollution in cities and several other factors combine to wreak havoc on our crowning glory and damage our hair to the very roots. It is highly important to keep ourselves hydrated and eat a balance diet to ward off hair problems. In this preparation we had used all natural ingredients which are very fresh. Three types of shampoo were made like Homemade Herbal Ayurvedic Shampoo, Hibiscus and Aloevera shampoo. Shikakai is one of the most useful Ayurvedic herbs that used for hair related problems because of its Kashaya (astringent) property, helps to remove dirt and excess oil from the scalp as well as promote hair growth cleanses hair follicle. The Antifungal properties of Reetha and Amla are used to incite the development of the new hair follicles. It also prevents hair from sun damage, untimely graying of hair, dandruff and causes hair to become thicker and grow quicker. Amla fruit is considered as a miracle cure for hair care. It contains calcium, which promotes healthier hair. Kalonji oil is rich in antioxidants and has antibacterial, antifungal and anti-inflammatory properties, which makes it one of the best oils for hair. Fenugreek seeds are a rich source of iron and protein two essential nutrients for hair growth. They also contain a unique composition of flavonoids and saponins as these compounds are presumed to induce hair growth due to their anti-inflammatory and antifungal effects. Curry leaves are rich in antioxidants which moisturise the scalp, and also remove dead hair follicles. Curry leaves are high in beta-carotene and protein content, which are instrumental in preventing hair loss and thinning of hair.



On fourth day Herbal handwash and keratin treatment for hair. Keratin treatment is the short form of Brazilian keratin treatment also Called as Brazilian Blow out. Because it was invented for the hair of Brazilians. Because their hair texture is very thick and Unmanageable. If your hair is thick you have to do it twice a month. If hair are very spars then do only once a month. Cream applied for keratin treatment it produces gas Formaldehyde which very poisonous. Ironing is done basically to fix the protein in hairs. But due to high dose of heat hairs are damaged. Keratin treatments like Hair growth serum for super dry damaged & frizzy Hair, Keratin treatment at home for straight, smooth and shiny hair, DIY Keratin Cream for straight smooth Shiny & Frizz Free Hair can be used at home. Two types of hand washes were prepared, first type Homemade herbal hand wash here the ingredients such as Reetha/ Soap nuts, Aloe vera, Lemons, Glycerin were used. Reetha is used as soap base. Second was Herbal hand wash were in ingredients like Reetha/ Soap nuts, Hibiscus flowers, Roses, Aloe vera and Rose water were used.

Next day session focused on Herbal hair oils and herbal hair colors. Detail presentation on importance of Onion as a source of Sulfur which are components of protein especially keratin, which is known to be sulfur-rich, are needed for growing strong hair. When added to the hair and scalp, onion juice can provide extra sulfur to support strong and thick hair, thus preventing hair loss and promoting hair growth. The sulfur from onions may also help promote collagen production. Collagen in turn helps the production of healthy skin cells and hair growth. Applying onion juice to the hair and scalp could increase blood supply to hair follicles, which in turn improves hair growth. For any hair oil to prepare Coconut oil acts as the base. Hair colors like Natural hair dye, Brown Hair Tint Natural Dye and Burgundy Natural Dye were prepared using natural ingredients like mehendi powder and beet root.

On the last day of the course started with a lecture session on the importance and preparation of herbal colors and herbal face scrubs. Two types of herbal Face packs were prepared. First one was Aloe vera pack for tan removal. In this ingredients used were fresh Aloe vera gel, lemon juice and 2 teaspoons of rose water. This pack has to be applied on the affected areas of face and keep for 30 mins and rinse with cool water. This will act as a perfect toner to close all your facial pores. Second was Turmeric face pack for skin lightening, here ingredients used were 2 teaspoons of the gram's flour (besan), adds a pinch of turmeric powder. Prepare a smooth paste by mixing with 1 teaspoon of pure rose water.

Apply the pack all over the face and keep till it dries completely. Rinse with cool water. Repeat this procedure for 30 days at least twice weeks to reduce blemishes, dark spots and tan. Organic Turmeric Body Scrub For Glowing Skin was also prepared using 1 cup Sugar 2 tsp Turmeric Powder 1 ½ cup Coconut Oil. Here the treatment time is 10-15 minutes and apply this for at least 2-3 times a week. Coffee face Scrub, Banana Face pack for Instant Glow and Rice cream were prepared.



*Dr. Suraksha S. Dongrekar*  
*Assistant Professor*

## POSTER COMPETITION

The Department of Botany of St. Xavier's College Mapusa – Goa in collaboration with Society of Ethnobotanists (SEB) Goa Chapter organized a poster competition on 'Indigenous Knowledge of Plants in Goa' in the memory of Late Professor S.K. Jain (Father of Indian Ethnobotany). The posters were displayed on 25<sup>th</sup> of May 2022. Eight students participated and their posters depicted some of the indigenous plants with their uses like *Terminalia elliptica*, *Cocos nucifera*, *Averrhoa carambola*, *Gloriosa superba*, *Phyllanthus acidus*, *Shorea robusta*, *Holoptelea integrifolia*, *Adhatoda vasica*, *Terminalia bellerica*, *Carissa carandas*, *Artocarpus heterophyllus*, *Scadoxus multiflorus*, *Clerodendrum paniculatum* and many more. The flyer and certificates were designed by Ms. Arvisha Petkar, The Judges of the competition were Mr. Conceicao De Souza, Dr. Harshala Gad and Ms. Smruti Pathak. The competition was organized by Dr. Wendy F. Xavier Martins, Executive Member, SEB-Goa Chapter. Ms. Sanjana Shirodkar from S.Y.BSc. bagged the first place, followed by Ms. Vijaya Pundge and Mr. Suraj Gawade from T.Y.B.Sc. won the second and third place respectively.



*Dr. Wendy Xavier Martins*

*Associate Professor*

## PLANT RIDDLES

1. I am a food with 5 letters. If you remove the first letter I am a form of energy.  
Remove two and I'm needed to live. What am I?
2. I am a seed with three letters in my name. Take away the last two and I still sound the same. What am I?
3. I am something that is yellow and I grow tall like a tower. I am used for seeds and oil, I sound bright. What am I?
4. With leaves so fragrant, I'm a favorite tea. I calm your nerves and set your mind free. With flowers so purple, in gardens, I sway, attracting bees that come my way. What am I?
5. I get hung but I'm not a picture. I'm green but I'm not a coat. I'm a plant but I'm not mint. I'm seen in December but I'm not a Christmas tree. I encourage people to kiss but I'm not Cupid. What am I?
6. I'm a plant that loves the cold, with leaves so green and a heart of gold. In stews and broths, my story's told. A vegetable hearty, and quite bold. What am I?
7. I'm a fruit that's fuzzy, not rough to touch. Inside, I'm juicy and loved so much. With a pit in the center, I come in a clutch. In jams or fresh, I'm a summer's crutch. What am I?
8. With a flavor so sharp, I pack a punch. In tiny cloves, I'm used a bunch. Vampires fear me, or so they munch. In many dishes, I'm part of the lunch. What am I?
9. With blossoms so white, and cherries so red. In pies and in jams, my fruits are spread. I'm a tree that's beloved, for my springtime display, with petals that fall, and form a pathway. What am I?
10. With a crown of green, I stand quite tall. In the vegetable aisle, I beat them all. High in vitamin C, to keep you from a fall, with a taste that's unique, it's a flavorful call. What am I?

ANSWERS: 1. Wheat, 2. Pea, 3. Sunflower, 4. Lavender, 5. Mistletoe, 6. Kale, 7. Peach, 8. Garlic, 9. Cherry tree and 10. Broccoli.

*Ms. Sabina M.Sales e Dias*

*Associate Professor*

All the flowers of all the tomorrow's  
are in the seeds of today

Croft M. Pentz

