



BOT'ANNE

ISSUE VIII 2021

“A TEACHER AFFECTS ETERNITY; NO ONE CAN TELL WHERE THEIR INFLUENCE STOPS”

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Principal's message

It is the role of the college and the department to strengthen character that will enable students to withstand extreme challenges ahead. I aim to enthuse



and encourage staff and students to also be inventive and inspired in their learning and day to day tasks. I believe that

having quality and passionate teachers is essential for the success of the institution.

I congratulate the Department in their effort to bring out this issue of newsletter. I hope this will serve as a source of inspiration and knowledge for the students and society at large.

What are biological weapons?

According to WHO, biological weapons are microorganisms like virus, bacteria, fungi, or other toxins that are produced and released deliberately to cause disease and death in humans, animals or plants.

Biological agents, like anthrax, botulinum toxin and plague can pose a difficult public health challenge causing large numbers of deaths in a short amount of time while being difficult to contain. Bioterrorism attacks could also result in an epidemic, for example Ebola or Lassa viruses were used as the biological agents.

Biological weapons are a subset of a larger class of weapons referred to as weapons of mass destruction, which also includes chemical, nuclear and radiological weapons. The use of biological agents is

in a bioterrorist attack is increasing. (Collected by Dr. P.Usha Shri) (Source - <https://www.who.int/health-topics/biological-weapons>)

Phytoremediation of water

Phytoremediation is a plant-based approach, which involves the use of plants to extract and remove pollutants from soil, air and water.

Aquatic plants hold steep efficiency for the removal of organic and inorganic pollutants. *Eichhornia crassipes*, *Pistia stratiotes* and *Lemna minor* along with *Azolla*, *Potamogeton*, *Spirudola*, and *Wolffia* are prominent metal accumulator plants for the remediation of heavy metal polluted water.

Along with heavy metals, bacteria, oil and other pollutants can be removed with the help of wetland and aquatic plants. They also play huge role in keeping water clean by absorbing carbon dioxide and expelling Oxygen. These plants are highly efficient in reducing aquatic contamination through bioaccumulation of contaminants in their body tissues. (Mrs. Anitha)

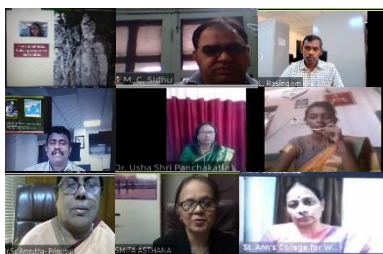


Editorial members

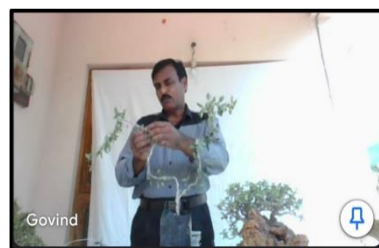
Dr. P. Usha Shri, Mrs. Roja, Mrs. Neeraja, Mrs. Anitha, Ms. Kalpana

Student members - Ms. Komal -BZC & Ms. Nabihah - NCB (III year R18)

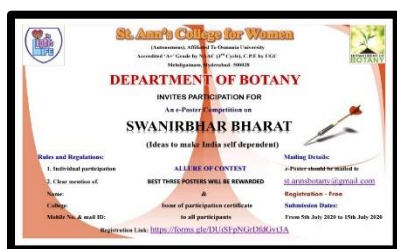
Major events 2020-2021



National level e-workshop on Recent trends in Plant taxonomy in collaboration with Botanical survey of India (BSI).

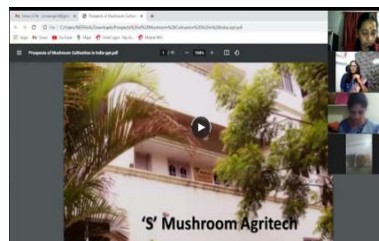


As a part of departmental activity, a demonstration class on Bonsai techniques was organized for II-yr. students



An inter-collegiate e-poster national level competition on 'SWANIRBHAR BHARAT' (Ideas to make India self-dependant) was conducted from 5th –

15th July with around 52 participants from different parts of India like west Bengal, Mumbai, Calcutta, Andhra Pradesh etc.



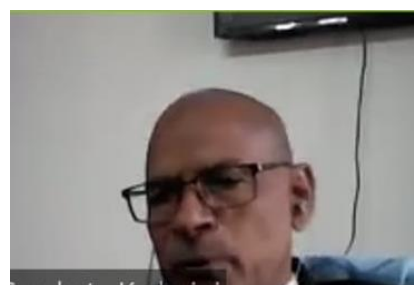
A guest lecture on Mushroom cultivation was organized on 9th June 2021, for the final year students of BZC & RCB under earn

while you learn.

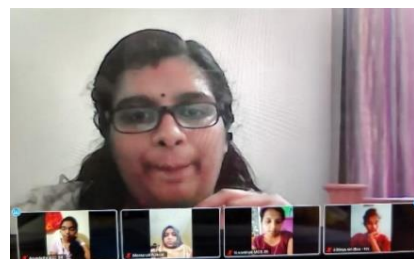


On the theme 'scaling challenges' an awareness program was organised at an orphanage, Sneha ghar (An

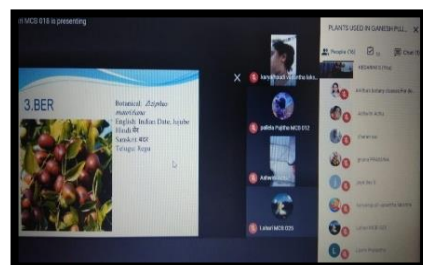
Orphanage), Ghasmandi near Bible House, Secunderabad, where children were enlightened about the preventive measures to be taken during the first unlock for Covid-19. Hand wash, soaps were distributed to the children.



Career counseling for III-year students by Mr. S. Rajasekhara, Special Grade Dy. Collector (Retd.) Telangana



Guest lecture for II year-Role of plants in Forensics Ms. Aswathy Ajayan Forensic professional, Central Forensic laboratory, Hyderabad



As a part of outreach, an awareness program was conducted by the II-year students for house wives on Biodiversity conservation titled "importance & medicinal value of 21 leaves that are used in Vinayakachavthi pooja".



BOS meeting to ratify I and II-year syllabus

Reflections – our lecturers have given us the knowledge, believed in us and envisioned a career path. They have guided, mentored and provided necessary skills to enhances our personalities. mold and redirect us for a brighter future -Komal Rai (BZC III year)

Translation - One who indulges in healthy foods and activities, discriminates the good and bad of everything and then acts wisely, not attached too much to the objects of the senses, develops the habit of charity, considering all as equal, truthful, pardoning and keeping company of good persons, becomes free from all diseases.

Plants in Vedic Text



India an epitome of soft power. One of its important soft power include Vedic culture. The astuteness of these texts already has a mention of all the aspects that are considered to be novel today. This article mainly focuses on the mention of plant, their morphology, classification and medicinal values in Vedic text. there are four Vedas. (Rig, Sama, Yajur, and Atharva). Out of the four vedas Rigveda and Atharva veda has lot mention of plants. The plant classification as trees (Vriksha), herbs (Osadhi) and creepers (Virudh) have its mention in Rigveda that dates back to 1500 – c. 500 BCE.

Medicinal properties of many plants as been extensively described in Atharva Veda. Ayurveda (Science of Life) is known as a Upaveda of Atharva Veda. Ayurveda is world's oldest



holistic healing systems with plant and minerals. Eight plant growth pattern was also mentioned in Atharva Veda as Visakha (Arborant), Manjari (leaves with long clusters), Sthambini (bushy plants), Prastanavati (which expands), Ekasrng (monopodial branching), Pratanavati (creeping plants), Amsumati (multiple stalks) and Kandini (clum type). As an extension to the Vedic text voluminous volumes were written on plants. To illustrate a few, the Charaka-Samhita dealing with plants and formulation of Ayurveda, A contribution of sage Charaka. Susruta Samhita contributed by Sage Susruta with 184 chapters that describe 700 medicinal plants, 64 preparations from mineral sources and 57 preparations based on animal sources for 1,120 illnesses. The text also discusses several surgical procedures. Sage Parasara and Vrksayurveda on

taxonomy and healing properties of plants. Another text of sage Parasa Krishiparasara which mainly deals with agricultural crop plants. These Samhita's used terms like Osadhi (herbs e.g., rice, wheat, etc.), Vanaspati (plants fruiting with enclosed flowers e.g., Ficus), Vriksha (Tree e.g., mango), Guchcha (Clustered herbs e.g., Jasmine), Trina (grasses), Gulma (Succulents), Pratan (Creepers)Valli (Twiner). The term Gana was used for family example Samiganiya (Leguminosae), Puplikganiya (Rutaceae), Swastikaganiya (Cruciferae), Tripushpaganiya (Cucurbitaceous), Kurchpushpaganiya (Compositae), Mallikaganiya (Apocynaceae). Few common examples of plants in Vedic texts Sami (*Prosopis*), Vibhitaka (*Terminalia bellerica*), Khadira (*Acacia catechu*), Simsupa (*Dalbergia sissoo*) Palas (*Butea monosperma*), Udumbara (*Ficus glomerata*), Badara (*Zizypus jujuba*) Kharjura (*Phoenix dactylifera*), Bilva (*Aegle marmelos*), Vasaka (*Adhatoda vasica*) ect. A part from the Vedic text even Indian mythological texts like Ramayana and Mahabharata describes the extensive flora. To sum up great India sages of Vedic period contributed volumes of literature much before the Greek and Latin Botanist. (Mrs. P.V. Neeraja)

Plant based vaccines

Plants offer several advantages in vaccine generation, including low-cost production by eliminating expensive fermentation and purification systems, sterile delivery and cold storage/transportation. The



most important, oral vaccination using plant-made antigens confers both mucosal (IgA) and systematic (IgG) immunity.

The significant increase in the world population and the emergence of epidemic and pandemic disease cause demand that exceed the vaccine production capacity. However, the success of national vaccine programs is marred by both high cost-per-dose of producing vaccines and the limitations in the distribution of vaccine.

However, it is observed that the use of plant systems for vaccine production has the potential to provide a biotechnological solution. It can also provide high-scale production and reduce the cost-per-dose. As plants produce complex proteins similar to other eukaryotic systems, they can fold and modify these proteins post-translationally. (Mrs. Roja)

***Tinospora cordifolia* – The wonder plant**

Important plant amongst the 32 prioritized plants by National Medicinal Plants Board (NMPB), New Delhi of Government of India.

Common names: Heart leaved Moonseed Plant (English), Amrita Guduchi (Sanskrit), Giloe (Hindi), Gulancha (Bengali), Galo (Gujrati) and Teppatige (Telugu).



It has been used in Indigenous systems of medicine, as indicated in various classical texts of Ayurvedic System of

Medicine, viz. Charak, Sushrut and Ashtang Hridaya and other ancient treatises. It also finds a special mention for its use in tribal or folk medicine.

The medical applications include controlling various disorders and usages as anti-oxidant, antihyperglycemic, antihyperlipidemic, hepatoprotective, cardiovascular protective, neuroprotective, osteoprotective, radioprotective, anti-anxiety, adaptogenic agent, analgesic, anti-

inflammatory, antipyretic, a thrombolytic agent, anti-diarrheal, anti-ulcer, antimicrobial and anti-cancer agent. *Tinospora cordifolia* has an importance in traditional ayurvedic medicine used for ages in the treatment of fever, jaundice, chronic diarrhea, cancer, dysentery, bone fracture, pain, asthma, skin disease, poisonous insect, snake bite, eye disorders. (Ms. Kalpana).

The physician treats but the nature heals

In a study, Yoshifumi Miyazaki, a forest-therapy expert and researcher at Chiba University in Japan, found that people who spent 40 minutes



walking in a cedar forest had lower levels of the stress hormone cortisol, which is involved in blood pressure and immune-system function, compared

with when they spent 40 minutes walking in a lab. Miyazaki recalls. “Spending time in the forest induces a state of physiologic relaxation.” “Nature is not a place to visit, it is home”.

Come home to the forest

Where time goes slow

And the breath is mellow

Where thoughts find rest

And calm comes to nest

Come home to the woods

To be friends with trees

And listen to the breeze

To wander through trails

And mend your sails

Come home to nature

When your heart is hurting

Or your soul needs healing

When something feels wrong

Or you just need a place to belong

The forest awaits

Come home- be healed.

Collected by Nabihah III NCB

(Source: <https://time.com/4405827/the-healing-power-of-nature/>)