



# Bot'anne

## Issue VI-2019

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**“Our commitment is to empower ourselves to be successful” –  
Botany Department**

### Editorial Board

#### Faculty

Dr.G.Angela,  
Dr. P.Usha Shri,  
Mrs.P. V. Neeraja,  
Mrs.Roja,  
Ms.Kedarini

#### Students

Ms.Varsha,Ms Ghousia,  
Ms.Mounica,  
Ms.Manisha

### 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 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.*

### Hydroponic Gardening

*Though it may sound complicated it's really not. The word "hydroponic" comes from a Greek word "hydro," meaning water and "ponic," meaning work. The basic concept is growing plants in a nutrient rich water solution rather than in soil. Instead of soil hydroponic growing utilizes an inert growing liquid media. All the nutrients required by the plant for the production of food material are present in the solution used for growth.*



## Outreach



## Skill Oriented activities



## Guest Lectures



## Student participation in academic activities



### MOU

1. Param Science & Technologies
2. Atlantis Phytotech

### Faculty Research

CPE- Mrs. P.V. Neeraja  
Applied for Wosa –A – Women  
Scientist - Dr.P. Usha Shri

### Highlights of the department:

- Published Flora of Mehdiapatnam and surrounding areas.
- Calendar
- Telangana State Best Teacher Award – Dr. Angela
- Rastriya Gaurav Award – Dr.P.Usha Shri
- Best Citizen of India – Dr.P.Usha Shri

### Student Research Projects

- Effect of lead nitrate on ground nut(ICGV-3043)
- Estimation of proteins in the germinating green gram under Salt stress
- A comparative study on leaf pigments extracted from plants growing in pollution zone and pollution free zone.
- Effect of pollution on pollen Viability
- Comparative study of hardness in water samples collecting from different water bodies in Hyderabad

### How do plants mitigate stress?

Plants also experience stress like all other living organisms. The stress can be classified as biotic stress that which is caused by pathogens and the other is abiotic stress caused by physical agents i.e., environmental factors like temperature, light, frost, contaminated soils and polluted air.

When they are under stress a Cascade of physiological changes occur in their cells which protect them from this stress injury. These changes are the production of antioxidant enzymes and metabolites that help to mitigate stress to a large extent. The first stress response in the cells is production of the most toxic superoxide radicals. The enzyme superoxide dismutase gets triggered and converts superoxide radicals to hydrogen peroxide a least toxic form. Though hydrogen peroxide is not very toxic but continuous accumulation can cause potential damage to the cells. So, it is further broken down to simpler non toxic end products like water & oxygen by catalase & peroxidases. There are a wide range of enzymes which increase during stress conditions and help the plants to survive.

Apart,from enzyme metabolites like carotenoids, ascorbic acid, tocopherol & proline, production increases to protect the cells against oxidative damage. Only under extreme stress conditions when super oxide radical production exceeds antioxidant production the plants succumb to stress injury.

*Mentha arvensis*.,L commonly known as mint; family *Lamiaceae*.



- Increase bile secretion and encourage bile flow, which helps in digestion
- Mint contains menthol, that is a natural aromatic decongestant
- Relieve sore throat
- It is a natural anti-microbial agent and breath freshener.
- Relieve fever and thirst
- Anti-inflammatory