



Sarvajani University

Faculty of Science

Shree Ramkrishna Institute of Computer Education and Applied Sciences

M.T.B College Campus, Athwalines, Surat



Department of Biotechnology

About us:

We at Shree Ramakrishna Institute of Computer Education and Applied Sciences, Sarvajani University, hold a strong desire to develop and refine the technical skills and to motivate our students so as to make them acquainted with the recent technologies in the area of Plant Biotechnology. In the recent past application of plant biotechnology has been rapidly expanded from the laboratory to the field which has resulted in the expansion of various national laboratories and agro based industries. Students successfully completing the course shall have a better option for getting entry to pursue their career in such institutes and industries.

Existing facilities:

We are equipped with all major instruments essential in the field of plant biotechnology namely dedicated growth chamber with temperature and photoperiod controller, photo bioreactor, UV-Vis Spectrophotometer, GMO detection via real time PCR, sonicator, aseptic work bench, temperature-controlled incubator shaker, refrigerated centrifuge, thermo-cycler, vertical and horizontal electrophoresis, flame photometer, advanced gel documentation system, water purification unit and HPLC.

Student skill development:

Students are trained to get acquainted towards various skills and techniques used in plant tissue culture such as micropropagation, handling callus & suspension cultures, various methods for transformation in model crops, qualitative and quantitative estimation of secondary metabolites, biochemical and enzymatic assays for various stress parameters in plants. Routine scientific presentations which also includes report drafting and result interpretation is a mandatory part of their practical examinations.

Research focus:

Major area of interest is cloning, characterization and over-expression of novel stress induced gene and its promoter, generation of marker free transgenic plants using *Agrobacterium* mediated transformation in model crops like Arabidopsis, tobacco and rice, effect of nanoparticles on plant-microbe interaction and growth and yield attributes of plants.

Future plan:

In future, we plan in-vitro establishment of various endangered medicinally plant species of South Gujarat region. We can selectively cultivate organs having higher medicinal value and also scale-up the production of secondary metabolites using suspension culture.

We aim to deploy multi-omics approaches to decode the molecular cross-talk between nanoparticles, plant microbiomes, and stress-response pathways. We aim to safely optimize crop yields and scale up high-value secondary metabolite production. As this does not employ any recombinant DNA technology it can be a suitable alternative to promising yet controversial GM technology.



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