

PRACTICAL COURSES BSP 554 BIOTECHNOLOGY LAB

Course Outcomes:

After successful completion of the course, students will be able to:

- CO 1. Develop laboratory skills in biotechnology
 - CO 2. Use solid surface fermentation technique for production of antibiotics.
 - CO 3. Carry out PCR and do the analysis
 - CO 4. Do vermicomposting and mushroom cultivation.
 - CO 5. Perform plant tissue culture techniques and check the nutritional and anti-nutritional qualities of edible seeds.
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- 1. Production and analysis of vermicompost
 - 2. Identification, collection and cultivation of mushrooms
 - 3. Submerged and solid-substrate fermentation.
 - 4. Production and assessment of enzymes, mycotoxins, organic acids and antibiotics.
 - 5. Isolation and induction of root nodules by rhizobia
 - 6. Isolation and mass production of arbuscular mycorrhizal spores.
 - 7. Plant tissue culture
 - 8. Evaluation of nutritional and antinutritional qualities of edible seeds.
 - 9. Evaluation of soil qualities (e.g. texture, bulk density and water holding capacity)
 - 10. Evaluation of soil components (e.g. nitrogen, phosphorus, organic carbon)
 - 11. Pattern of decomposition of organic matter (e.g. leaf and woody litter)
 - 12. Biogas production
 - 13. Functional properties of food (e.g. water absorption capacity, gelation, foaming and emulsion)
 - 14. DNA extraction methods and PCR /RT PCR confirmation
 - 15. Analysis of RT PCR data in terms of copy number or quantification.
 - 16. Analysis of DNA and protein sequences.

BSP555 ENVIRONMENTAL PHYSIOLOGY LAB

Course Outcomes:

After successful completion of the course, students will be able to:

- CO 1. Conduct experiments in environmental physiology
 - CO 2. Determine blood indices, blood pressure and thermal stress.
 - CO 3. Demonstrate rate of transpiration, effect of temperature on the rate of respiration and plant responses to salinity and metal stress..
 - CO 4. Know how to check the seed health and effect of salinity on seed germination.
 - CO 5. Check viability of seeds, inducers and inhibitors of germination.
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- 1. Haematology-
 - 1.1 Determination of blood indices
 - 1.2 Determination of blood pressure.
 - 2. Respiration-
 - 2.1 Estimation of oxygen consumption by the organism under stressed condition (thermal stress).
 - 2.2 Demonstration of rate of transpiration by photometry.
 - 2.3 Effect of temperature on the rate of respiration.
 - 3. Seed physiology–
 - 3.1 Seed health testing.