DEPARTMENT OF MICROBIOLOGY under DBT Star College Scheme

Report on

Additional Practical's Introduced to F.Y. BSc students

Objectives of the Additional Practical's Introduced:

- To enhance the quality of the learning and teaching process to stimulate original thinking through '***hands–on***' exposure to experimental work and participation in summer schools
- To increase capabilities of core instrumentation resources by procuring new equipment and upgrading existing facilities
- To provide access and exposure to students to research laboratories and industries in the country
- To help in devising standard curricula and Standard Operating Procedures (SOP's) / kits for practical's.

The Star College Scheme was initiated by DBT in 2008 to support colleges and universities offering undergraduate education to improve science teaching across the country. The program is organized for improving critical thinking and encouraging 'hands on' experimental science at undergraduate level in basic science subjects. This program provides support for developing infrastructure for academics and laboratory activities. This support is in turn expected to invigorate teaching and provide unique exposure of students to experimental science. The Star College Scheme acts as a gateway and provides exposure to students. The scheme also acts as a catalyst in igniting young minds (faculty and students) to engage in networking, exposure visits to research institutes and industries and apply for research grants in order to prepare them for future challenges after the successful completion of their undergraduate courses.

The total strength of BSc I year (F.Y.BSc.) students was 107. All the students were encouraged and engaged during these additional practical sessions.

Following experiments were conducted during there I semester

1. **Wrapping glassware and Aseptic Transfer Technique**
2. **Simple Staining**
3. **Media Preparation**

These practical's were conducted during the day-to-day practical sessions during the month of October and November 2022.

To enhance the expertise in the area of basic microbiology and to develop the basic skills in the area of microbiology these additional practicals were introduced.

The primary requirement for any microbiologists is the skill of autoclaving and to do so wrapping of glassware plays important role. Wrapping of petri plate, pipettes and test tubes were taught to the students along with this cotton plug preparation to the flasks and to the test tubes. After this experiment students were taught to carry out autoclaving of the media and glassware.

According to the curriculum of I semester, students were supposed to learn only negative staining of bacteria. To understand staining in a better way it was required that students should learn Simple Staining-Positive staining. Positive staining of bacteria was taught to the students along with its importance, advantages, and disadvantages.

Students learned to prepare media for growth of bacteria and fungi. Nutrient agar on petri plates and test tubes as slants, Nutrient broth in test tubes were prepared for growth of bacteria and Martins Rose Bengal Agar (MRBA) was prepared for growth of fungi.

Students also learned the aseptic media transfer techniques using LAF and in-between the Bunsen burners as a basic microbiological technique.

Out Come of the Program:

- Engaging students in pre-preparation of the experiments to increase their knowledge for preparation of chemicals and reagents and media
- Increase in the number of practical's being conducted individually by the students.
- Introduction of "hands on training" to enhance conceptual clarity for topics taught previously by theoretical approach.

GLIMPSE OF ADDITIONAL PRACTICAL'S CONDUCTED