DBT-STAR Scheme 2026

REPORT

DEPARTMENT: Microbiology

TITLE	**"Microbiological Analysis and Detection of Adulterants in Milk**
ACTIVITY TYPE	Hands-on Training
YEAR/SEMESTER	2026 / Even Semester
DATE OF EVENT	5th and 6th March 2026
VENUE	Microbiology Lab
ORGANISED BY	Department of Microbiology
RESOURCE PERSON	Ms. Vienna Dorothy Fernandes Assistant Teacher, Stella Maris School
FACULTY INCHARGE/EVENT COORDINATOR	Ms. Gayathri B M
TARGET AUDIENCE	IV & VI Semester B.Sc.
NUMBER OF BENEFICIARIES	50

Objectives of the Programme:

The main objective of the two days Hands-on Training on Microbiological Analysis and Detection of Adulterants in Milk was to familiarize students with quality assessment techniques used in dairy laboratories**.** It helps students understand different types of adulterants commonly found in milk and their detection methods. Students are trained in performing standard tests used for evaluating milk quality and safety and also enhance practical laboratory skills and analytical thinking among undergraduate microbiology students.

Highlights of the Programme:

The Hands-on Training programme included both theoretical explanations and practical exposure to several important techniques used in the analysis of milk quality and detection of adulterants. During the session, students examined various milk samples including raw milk and pasteurized milk of different commercial brands. The resource person demonstrated and guided students in performing rapid platform tests such as organoleptic evaluation, clot on boiling test, alcohol test, and alcohol–alizarin test to assess the basic quality parameters of milk. Students were also trained in the estimation of lactic acid to determine the acidity level and microbial activity present in milk samples. In addition, reductase tests including the Methylene Blue Reduction Test (MBRT) and Resazurin test were performed to evaluate the microbial load present in the milk. The phosphatase test was conducted to assess the effectiveness of pasteurization in pasteurized milk samples, they also performed Standard Plate count and Direct Microscopic Count to count the number of microorganisms present in the milk sample. Furthermore, the training focused on the detection of

common milk adulterants through various chemical tests. Students performed tests such as the iodine test for detecting starch, foam test for the presence of detergents, urea test, lactometer test to determine milk density and possible dilution, and hydrogen peroxide test and many more. Through these practical sessions, students were able to understand the principles, procedures, and interpretation of results for each test while gaining hands-on laboratory experience.

Outcome of the Programme:

The training program successfully enhanced student's practical understanding of microbiological and chemical methods used in milk quality assessment. By actively participating in the laboratory sessions, students gained hands-on experience in performing various tests used to detect adulterants and evaluate the safety and quality of milk. The exposure to real milk samples enabled students to better understand the importance of quality control measures in the dairy industry. The program also helped students develop essential laboratory skills such as careful handling of samples, accurate weighing of the chemicals, handling the compound microscope, accurate observation of test results, and proper interpretation of experimental outcomes. Overall, the training strengthened the students' knowledge of dairy microbiology and provided valuable insight into the practical applications of microbiological techniques in food safety, quality assurance, and public health.

Picture:

Inauguration of the Hands-on Training program

Theory session by Ms. Vienna Dorothy Fernandes

Practical session by Ms. Vienna Dorothy Fernandes

Head of the Department **DBT-STAR Coordinator** **Vice Principal** **Principal**