

CERTIFICATE COURSE IN DAIRY TECHNOLOGY

Purpose of Program

India is the largest producer of milk in the world. Milk production in the country is increasing @ 4% per annum contributing more than Rs. 1, 00,000 crores to GDP. There are 678 milk processing plant in the country requiring large human resource pool to run these dairies. With the introduction of modern technology in the production and processing of dairy products, the concept of milk is shifting towards value added dairy business. It is estimated that Dairy industry is generating new jobs to the extent of 1.0 lakhs every year. Dairy sector is further expected to grow faster and generate more employment in the near future. Rapture Biotech is designed a one month Dairy technology program to prepare trained Dairy experts under skilled supervisors, to perform different techniques in dairy industry laboratories.

Overview of Courses

Module 1: Introduction to dairy technology

Good hygiene practices(GHP) in milk production, Brief overview about major Dairy product companies (National& International), Major Biosafety levels and biosafety boards operating in India, Sampling and microbiological examination of pasteurized and sterilized milk, Concept of designer milk. Detection of adulterants and preservatives in milk. Detection of adultrants in Milk (Urea, starch, cane sugar, formalin, Hydrogen peroxide, boric acid, skimmed milk powder, detergent, gelatin).

Module 2: Microbial analysis of dairy products

Dairy enzymes and whole cell immobilization, microbial and non-microbial contaminants, their sources and entry points in milk during various stages of production; operations of microorganisms associated with raw milk; Morphological and biochemical characteristics of important groups and their classification; significance of different groups of bacteria i.e. Psychrotrophs ,mesophiles, and thermophiles in milk. Role of microorganisms in spoilage of milk; souring, curdling, proteolysis, lipolysis; abnormal flavors and discoloration, spoilage of milk caused by microorganisms: souring, sweet curdling, gassiness, lipolysis, ropiness proteolysis and discoloration.

Module 3: Biochemical analysis of dairy products

Detection of pH, chloride content, H₂O₂ test. Detection and estimation of coliforms presumptive test, rapid coliform count, invic test. Detection of important pathogens using selective media; *e.coli*, *staphylococcus aureus* *salmonella* and *bacillus cereus*. Estimation of microbial load in milk by dye reduction tests- (MBRT-RRT), Detection of Ammonium compound in milk.

Module 4: Determination of chemical components in milk

Determination of pH and titratable acidity of milk. Determination of milk Casein. Determination of calcium in milk. Determination of chloride in milk. Estimation of ascorbic acid in milk. Estimation of proteins by lowry's method. Turbidity test for checking efficiency of sterilization in liquid milk. Presence of glucose in milk.

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