



MANGALORE UNIVERSITY

Department of Microbiology

M.Sc. Microbiology

MBS- 455: Food Microbiology

40h

OBJECTIVES

1. Detailed study on factors responsible for microbial food spoilage.
2. Detection of food spoilage methods.
3. Microbial spoilage of milk and fermented dairy products.
4. Food preservation techniques.

COURSE OUTCOME

CO1: Understanding food processing and packaging hygiene.

CO2: To learn food safety standards at international and national level.

CO3: Employment as food quality controller, in food and sewerage manufacturing industries.

CO5: Understanding importance of microorganisms in food industry.

UNIT- I

Food and its constituents: carbohydrates, proteins, fats & oils, vitamins, minerals, fiber and water- properties and significance. Food as substrate for microorganisms, Extrinsic and Intrinsic factors influencing microbial growth, Microbes important in food: molds, yeasts, bacteria. Detection of food spoilage, Food- borne Infection & Intoxication: Bacterial, Fungal, Nematodal, Protozoal. Spoilage of fruits, vegetables, cereals, meat, fish, sea foods, poultry and canned foods.

UNIT- II

Milk handling & processing, microbial contamination of milk, Biochemical activities of milk: Souring, Lactosis, Proteolysis. Milk - borne infections, Probiotics and their importance. Fermented dairy products- buttermilk, sour cream, cheese, yoghurt, Pasteurization and its types, Fermented Foods- Bread, Cocoa, Vinegar, Sausage, Oriental foods- Shoyu, Tofu, Idli. Food preservation: Classification- physical, chemical and biological.

UNIT- III

Principles of Food Packaging: Types of containers, Food packaging materials and forms, Package testing, Packages with special features, Safety of food packaging. Food Processing and Environment: Food Sanitation in manufacture and Retail trade, Properties and requirements of processing water, Waste water and waste solids disposal, up-gradation and treatment.

UNIT-IV

Food Safety, Risks and Hazards: Microbiological consideration in Food Safety, Effects of processing and storage on Microbiological safety, Microbiological methodology, Food Laws and Regulations- HACCP, FSSAI, BIS, Federal Food, Drug and Cosmetic Act, International Food Standards and Codex Alimentarius.

Note: Each unit is for 10h