

Subject : Food Microbiology and Preservation

Paper No – 401

CC – 7

Objectives:

8. To provide the knowledge about principles, objectives, importance and methods of food preservation.
9. To aware the students about common used in the food methods for testing food adaptation.
10. To provide information about general and food microbiology.
11. To impart knowledge about pathogenic Non – pathogenic and useful micro organism.
12. To introduce the students about common causes of food spoilage.

Unit – 1

- a) History of Microbiology – Discovery of Micro scope, to termination process, Antibiotics, Immunity etc. types of micro scope – compound and simple.
- b) Anatomy of various micro – organism – typical microbial cell.
- c) Classification of Microorganism and characteristics of micro organism.

Unit – 2

- a) Cultural Media – classification of cultural media, according to growth of bacteria.
- b) Methods of Bacterial inoculation – staining, common stain used in Microbiology, classification of staining method – simple, flagella, granule, spore, acid fast.

- c) Factors affecting on Microbial Growth, Growth curve, Sterilization – Definition, Methods of sterilization.

Unit – 3

- a) Disinfection – Common disinfectant, factors affecting on disinfectant, properties of disinfectant.
- b) Water Microbiology – Introduction Micro organisms present in water, Harmful effect of Micro – organisms present in water. Test for checking quality of water, milk micro biology – Introduction, common micro organism present in milk, Harmful effect of micro organism present in milk.
- c) Fermentation of milk – cheese, card, panir, etc. Micro organism of food industry, fermentation of Alcoholic beverages and cereals bread, idli, dhokla, dosa, khaman etc.

Unit – 4

- a) Definition, Principles and importance of food preservation – Cause of food spoilage and their control, classification of food basis on their life perishable, non perishable and semi perishable.
- b) Types of food storage and its importance long and short term storage, commercial effect of various methods on nutrient.
- c) Classification of methods of food preservation. Bactericidal methods use of high temperature, radiation, bacteriostatic methods dehydration, use of low temperature, chemical, sugar, oil, acids etc.
- d) Preservation by pickling, bottling and canning pective substance – introduction, classification, sources of pectin substance. Test for pective substance, theory of gel formation.

Practicals

- 1) Identification of insects spoiling grains.
- 2) Application of various preservation methods. Jam, Jelly, Ketchup, Sauce, Squashes, Pickles, Chatney, Sun drying, Oven drying.
- 3) Test for detecting food adulteration.
- 4) Use of Microscope.
- 5) Simple staining.
- 6) Gram staining.
- 7) Spore staining.
- 8) Preparation of cultural media.
- 9) To study the methods of bacterial inoculation.
- 10) To study the methods of termination (Milk, Cereal).

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- 3) Microbiology
By Michael J. Pelczar, Jr.
E.C.S. Chan
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Tata Mc Graw – Hill Edition.
- 4) Textbook of Microbiology – 6th edition
By R Anantha narayan
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