



MANGALORE UNIVERSITY

DEPARTMENT OF BIOSCIENCES

MSc Food Science & Nutrition

FNH 552 FOOD PRESERVATION

52 Hr (13×4 units)

Course outcome:

- Describe different processing and food preservation techniques based on different food materials
- Identify food processing techniques, various methods used to preserve foods and factors influencing the shelf-life of the food products.
- Identify different packaging techniques used for food packaging.
- Describe the effects of different processing techniques on palatability and nutritive value of food

UNIT I: Low temperature processing and storage

Chilling, cryogenic chilling, chill storage, freezing, cryogenic freezing, frozen food storage, freeze drying, changes in food during freezing, various types of freezers (tunnel types, fluidized bed, airblast etc.)

UNIT II: High temperature processing

Drying , dehydration, solar drying, mechanical driers, heat processing using hot oil (frying, shallow frying, deep fat frying), heat sterilization, pasteurization and its types and advantages, heat processing using hot air, baking, effect of heat on foods (texture, flavor, aroma, colour and nutritive value).

UNIT III: Irradiation

Irradiation of foods, types and sources of irradiation, effects or impacts of radiation on foods constituents, hurdle technology, irradiation of packaging material, application of irradiation on foods, dosimetry, health consequence of irradiated food.

UNIT IV: Preservation by chemicals and high concentration

Types and mode of action of organic and inorganic preservatives, antibiotics, antioxidants, anti-browning, cleaning, sanitizing and fungicidal agents. Sugar concentrates- general principles and methods of preparation of jam, jellies and marmalade, crystallized and glazed fruits, preserves, squashes and syrups. Theory of gel formation. Salt concentrates- general principle, role of ingredients, preparation of sauerkraut, dill and common Indian pickles.

REFERENCES

Desrosier N W & Desrosier JN, The Technology of Food Preservation- AVI Publication

Potty VH. & M J Mulki Food Processing Oxford & IBH Publications Swaminathan MS Food Science & Experimental Foods- Ganesh & Co Srilakshmi B, Food Science New Age International publication

Modern Processing, PACKAGING & Distribution System for Food, AP Frank, AVI Van nonstand Reinhold.co.

