SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF FOOD TECHNOLOGY

23FTT101- INTRODUCTION TO FOOD TECHNOLOGY

I YEAR II SEM

UNIT 4 –PRINCIPLES OF FOOD PRESERVATION

FOOD PRESERVATION

DEFINITION

Food preservation can be defined as the process of treating and handling food in such a way as to stop down spoilage and prevent foodborne illness while maintaining nutritional value, texture and flavour.

Temperature Control

Refrigeration: Slows down the growth of microorganisms by k food at temperatures just above freezing (0-4°C or 32-39°F).

Freezing: Stops microbial growth by keeping food at temperatu below freezing (below -18°C or 0°F).

Pasteurization: Uses moderate heat to kill harmful microorganisms without significantly changing the taste or nutritional value of food (commonly used in milk and juices).

Sterilization: Uses high temperatures to kill all forms of microorganisms, including spores (used in canning)**.**

Moisture Control

Drying: Removes water from food, inhibiting the growth of microorganisms and enzymes (used in dried fruits, jerky).

Dehydration: A more advanced form of drying that removes almost all moisture (used in powdered milk, instant coffee).

Freezing Drying (Lyophilization): Removes water by freezing the food and then reducing the surrounding pressure to allow the frozen water to sublimate directly from the solid to the gas phase.

CHEMICAL PRESERVATIVE

Salt: Draws out moisture through osmosis and creates an environment that is inhospitable to many microorganisms (used in pickles, cured meats).
Sugar: Similar to salt, it creates an environment with low water activity (used in jams, jellies).

Acids: Lower the pH of food to inhibit microbial growth (used in vinegar for pickling, citric acid in canned goods).

Preservatives: Chemical additives that prevent spoilage (e.g., sodium benzoate, sulfites).

TRADITIONAL METHODS

- Salting
- Drying
- Smoking
- Pickling
-

MODERN METHODS

- Freezing
- Pasteurization
- Modified atmosphere packaging
- Vacuum packaging

Canning

Involves sealing food in containers and heating them to destroy microorganisms and inactivate enzymes. There are two main types: water bath canning (for high-acid foods) and pressure canning (for low-acid foods).

Smoking

Uses smoke to preserve food by providing antimicrobial properties and reducing moisture content. It also adds flavor to the food (used in smoked meats and fish).


Thank You