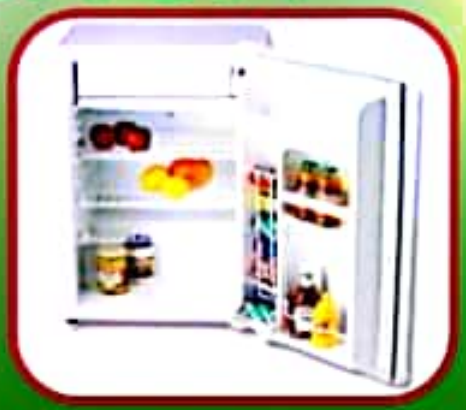
FOOD PRESERVATION



MEANING

Food Preservation is the process of treating and handling food to stop or slow down food spoilage, loss of quality, edibility, or nutritional value and thus allow for longer food storage.

Preservation usually involves preventing the growth of bacteria, fungi (such as

This means....

that the food treated that way will go bad (spoil from bacteria) later that if it had not been treated that way. For thousands of years, humans have used methods of preserving food, so that they can store food to eat later.

- Food preservation prevents the food from being spoiled by the action of enzymes and microorganisms.
- Food preservation increases the safe storage period of foodstuffs.
- It increases the availability of out of season foodstuffs.
- It increases the availability of various foodstuffs even at distant and not easily approachable places. In other words, it makes the

METHODS OF FOOD PRESERVATION

TRADITIONAL METHODS

- Drying
- Cooling
- Freezing
- Boiling
- Heating
- Salting
- Sugaring
- Smoking
- Pickling
- Lye
- Canning
- Jellying
- 1Jugging
- Burial

INDUSTRIAL MODERN METHODS

- Pasteurization
- Vacuum packing
- Artificial food additives
- Irradiation
- Pulsed electric field electroporation
- Modified atmosphere
- Nonthermal plasma
- High-pressure food preservation
- Biopreservation
- Hurdle technology

FOOD PRESERVATION

Canning

- Food heated in special containers (retorts) to 115°C for 25 to 100 minutes
- Kills spoilage microbes, but not necessarily all microbes in food

Pasteurization

- Kills pathogens and substantially reduces number of spoilage organisms
- Different pasteurization procedures heat for different lengths of time
- Shorter heating times result in improved flavor

FOOD PRESERVATION

Reduced water availability

- Drying
- Freeze-drying (lyophilization)
- Addition of high concentrations of solutes such as sugar or salt

Chemical-Based preservation

- GRAS

  -chemical agents "generally recognized as safe"

- pH of food impacts effectiveness of chemical preservative

FOOD PRESERVATION

Radiation

- Ultraviolet (UV) radiation
  -used for surfaces of food-handling equipment
  -does not penetrate foods
- Radappertization
  -use of ionizing radiation (gamma radiation) to extend shelf life or sterilize meat, sea foods, fruits and vegetables

Microbial Product-Based Inhibition

- Bacteriocins: bactericidal proteins active against related species
- Some dissipate proton motive force of susceptible bacteria

Microorganisms plays a vital Role in food processing, spoilage and preservation. Not only today but from ancient times processing and preservation of foods by fermentation techniques have been done using ancient technologies. Fermentation techniques not only increased shelf life and microbial safety of a food, but also make some food more tasty and digestible.