

## Food Preservation

Definition: Food preservation delays or interrupts the decomposition (decay) of food

Decay is caused by:

1. Enzymes
2. Moulds
3. Yeasts
4. Bacteria

Food can be preserved by:

1. Heat
2. Adding Chemicals
3. Removal of one or more of conditions necessary for micro-organisms to grow
4. Altering/ Changing the state of the food

Reasons for Preserving food:

1. Increase shelf life
2. Seasonal foods available all year round (eg frozen raspberries)
3. Foreign foods can be enjoyed in Ireland (eg Tinned Jackfruit(Indonesian))
4. Destroys harmful organisms

## **Methods of Preservation:**

### **1.FREEZING:**

#### *Principle:*

- Micro-organisms & Enzymes need warmth to function
- Extreme cold inactivates (stops) them
- Ice crystals form- no liquid available for them to function (metabolise)

\***Quick freezing-** (-25°C to -33°C) small ice crystals formed less damage to cells, texture & loss of nutrients is less on thawing

\***Slow freezing-** (0°C to -25°C) large ice crystals formed greater damage to cells, greater loss of nutrient & texture on thawing

#### **Method:**

#### ***Preparation-***

1. Only freeze good quality fresh foods
2. Prepare freeze in advance (fast-freeze button turned on 4-5hr beforehand) faster freezing will result
3. Only freeze 1/10<sup>th</sup> of freezer capacity at once in 24hrs
4. Never put hot foods in the freezer
5. Freeze in usable amounts

#### ***Packaging-***

1. Suitable for food
2. Remove as much air as possible
3. Seal well
4. Allow head space for liquids to expand
5. Cover any sharp foods/edges eg bones with foil

#### ***Freezing-***

1. Place food in fast freeze compartment
2. Allow for some circulation space
3. When freezing----
  - (a) Fruit- best in a dish or as a puree, does not freeze whole, open-freeze soft fruits & pack

- (b) Cooked dishes-undercook by about 20mins, avoid over seasoning, cool & freeze , cook and adjust seasoning on thawing
- (c) Meat- use waxed paper to separate individual pieces/ cuts, wrap sharp bones with foil
- (d) Fish- freeze immediately (avoid freezing if 6 hours has passed since fish was caught)
- (e) Vegetables- prepare as for cooking, blanch in boiling water for recommended time, plunge into ice cold water, drain & freeze
- (f) Bread- freeze as dough or cooked

4.Never re-freeze cooked foods that have thawed out

5.Turn off fast-freeze button after 24hrs of freezing food

### ***Labelling & Storing-***

1. Label clearly- food type, date & any other info
2. Keep a record of food in the freezer and use in rotation
3. Use bought frozen food within 3 months

### ***Thawing frozen food-***

1. Some foods can be cooked without thawing – chicken nuggets, fish fillets, meat pies, burgers
2. Joints of meat and poultry must be completely thawed
3. Thaw fruit slowly in the fridge
4. Once food is thawed it should be used quickly as micro-organism can grow

## **2. Heat Processing:**

### *Principle:*

High temperatures coagulate the cell protein of enzymes and micro-organisms – destroying them -----

**PRESERVING THE FOOD FOR LONGER!!**

### Common Methods of HEAT PROCESSING

1. Sterilisation including Canning & Bottling
2. Pasteurisation eg milk

### **Canning & Bottling:**

#### **Method:----CANNING**

Preservation of fruits, vegetables, meat, fish and other protein foods

How are foods canned?

1. Good quality foods are prepared – cleaned / washed/ inedible parts removed
2. Vegetables blanched (deactivate enzymes)
3. Cans filled and topped up with a liquid eg. Syrup / fruit juice / brine
4. Check all air is removed
5. Can are sealed with a special machine ensuring they are air-tight
6. Cans are sterilised
7. Cans are cooled

Effect of Canning on the food:

1. Loss of heat sensitive vitamins
2. Change in colour, flavour & texture may occur

#### **BOTTLING:**

1. High temperature destroys micro-organisms
2. Air is eliminated
3. Vacuum created on cooling
4. \*Not recommended for use in home