

## **Meat Ageing**

Meat ageing is also defined as meat conditioning. It is holding of meat at refrigeration temperature for 2-4 weeks. Objective of meat ageing is to improve tenderness and flavor of meat. Basically there are two types of meat ageing as following:

1. Dry ageing
2. Wet ageing

### **Dry ageing**

Dry ageing is more expensive and take long time than the wet ageing. In this case meat is hung in clean place. Temperature and humidity are kept controlled for 2-4 weeks. During this time, the enzymes present in the meat breakdown the muscles and connective tissues making the meat tender. During dry ageing, moisture is lost from the outer surface of meat causing the formation of inedible crust on the meat surface, which must be trimmed off and discarded before usage of meat.

### **Wet ageing**

In case of wet ageing, meat and its juices are packed in packaging material and sent for distribution. Ageing process continues till the unpacking of meat is done for cooking purpose. Plastic packaging does not cause loss of moisture, which result in increase in tenderness and juiciness of the meat.

### **Ageing environment**

- Temperature: 34-36 °F
- Relative humidity: 85-90%
- Air flow: 15-20 ft/min

Ageing room should be clean and should be free from any off odor.

### **Problem associated with ageing**

Following are some problems which are associated with ageing:

- Improper chilling of the carcass may cause problem. Temperature of the carcass should be lower to 40-45 °F within 24 hours of slaughtering. Failure to do so can cause bone souring (off odors).
- Poor sanitation during slaughtering process, so ageing will result in contamination with micro-organisms causing off flavor, off odor and spoilage.
- Excessive ageing will result in loss of carcass.

- Excessive ageing will result in accumulation of micro-organisms which can cause off flavor, off odor, slime formation and spoilage.

## **Meat Tenderization**

**Meat tenderization** is a process to break down the collagen protein to make the meat more palatable for consumer.

**Tenderizers** are the tools or chemicals that are used to make the meat tenderer.

There are basically three types or forms of tenderization as following:

1. Mechanical tenderization
2. Tenderization by cooking
3. Tenderization by enzymes

### **Mechanical tenderization**

In this method of tenderization, different tools are used to break down the fiber into meat. Example of mechanical tenderizers is meat mallet. It is like a hammer having spikes at the end which break down the fiber in meat.

### **Tenderization by cooking**

Different cooking methods are used.

#### **1. Moist heat methods:**

Moist heat methods include:

- Braising: cooking slowly in fat in a closed pot with moisture
- Boiling: Cooking in boiling water
- Stewing: cooking in liquid at low temperature

#### **2. Dry heat methods:**

- Barbequeing: cooking over open fire
- Grilling: cooking over a grill by direct exposure to heat
- Frying: cooking in hot oil

- Roasting: cooking by dry heat in oven

### **Tenderization by enzymes**

Enzymes are used for tenderization of meat before cooking. These are proteolytic enzymes or proteases that are used to break down peptide linkages between amino acids of proteins. Different enzymes are used for meat tenderization. Some are following:

1. Papain-obtained from papaya
2. Bromelain-obtained from pineapple
3. Actinidin-obtained from kiwi
4. Ficin-obtained from fig