

PACKAGING OF MEAT AND MEAT PRODUCTS

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PACKAGING OF RAW MEAT :

— Packaging refers to the scientific method of containing a food for optimum protection till it reaches the ultimate consumer

Packaging objectives and requirements :

- To prevent moisture loss during storage
- To offer meat in a most desirable colour to the consumer
- To prevent further microbial contamination
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PACKAGING MATERIAL AND TECHNIQUES OF RAW MEAT : ²

- Overwraps :**
- Primal and sub primal cuts of fresh meat are overwrapped with thermoplastic films
 - Cheapest film and low density polyethylene is mostly used
 - Ex : rubber hydrochloride, pvc



Tray with overwrap :

- Most common package of retail fresh meat
- Ex: Clear plastic trays
- Shelf life of this meat -10days at 0°C
- It Can retain the desirable bright red colour for 5 days only



Shrink film overwrap :

- Shrink films are good water vapour barriers
- These films are used for wrapping large and uneven cuts of fresh meat
- Recommended for storage of carcass quarters under frozen condition
- Ex : Heat shrinkable polypropylene, polyvenyledene chloride



Vacuum packaging :



- This technique is recommended for long –term storage
- Shelf life 8 to 10 weeks at 0°c
- Vacuum packaging of lamb and pork is avoided for different reasons
- Vacuum shrink packaging in cryovac barrier bag may provides storage and transport of frozen carcass
- Ex aluminium foil, polyester, pvdc

MODIFIED ATMOSPHERE PACKAGING :



- This technique is modified to extend the shelf-life of meat
- Packaging air can be suitably replaced by gases are nitrogen, oxygen and carbon dioxide alone or in combination are used
- Buffalo and beef meat need high oxygen content and pork needs less oxygen

PACKAGING OF FROZEN MEAT :

- Meat undergoes slow freezing in freezer cabinet of house hold refrigerator
- In industry it is quickly frozen by blast freezer



Packaging objectives and requirements of frozen meat :

- To protect meat from loss of surface texture
- To preserve desirable meat colour

Packaging Material and techniques :

- Overwrap :**
- Low density polyethylene is the least cost protective film which can with stand low temperature
 - Ex : polyester,

Shrink packaging :

- Heat shrinkable low density polyethylene and pvc films Provide required functional Properties



Packaging of cured meat :

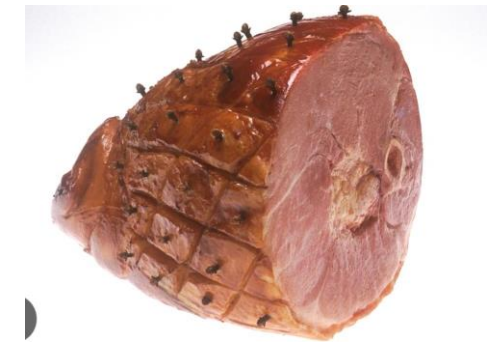
- Cured meat products like ham, bacon, luncheon meat
- Shelf life is 12 to 15 days at 4°C
- Pink colour of these products is due to nitrosomyoglobin
- It is susceptible to oxidation into metmyoglobin in high oxygen environment

Packaging objectives and requirements :

- To prevent fading of attractive pink cured colour
- To retain cured flavor
- Packaging material should be a good oxygen and water barrier
- Intensity of light in the stored room should not exceed 15 watts



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Ham

Packaging materials and techniques of cured meat :

Overwrapping :

- Short –term storage of cured meat
- Ex ; polyethylene, pvc, aluminium foil



Shrink packaging :

- Ham and other large irregular cuts of cured meats can be packaged
- Ex : pvdc



Vacuum packaging :

- Long term storage of bacon blocks, luncheon meat etc
- Ex : polyester
- Vacuum packed sliced bacon could be kept in a good condition of 3months

Packaging of thermo-processed meats :

- Most thermo-processed meat products are cooked to an internal temperature of 65 to 70°C to bring about pasteurization
- Thermal processing over 100°C

Packaging objectives and requirements :

- To prevent weight loss
- To preserve the typical appearance
- To provide heat sustainability during long term storage
- Packaging should be very good oxygen barrier

Packaging materials and techniques :

Short – term storage :

- Meat products like patties, nuggets, meat balls etc
- Ex : polyethylene, polypropylene, rubber hydrochloride
- Short term storage that is from 10 to 12 days at 4°C

Long term storage :

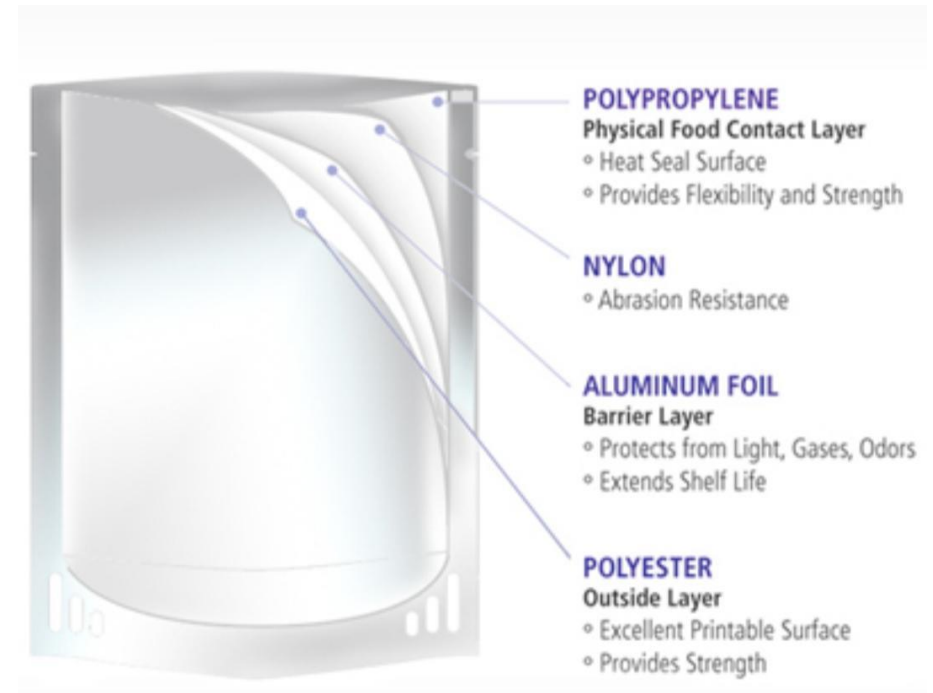
- Meat products like corned beef, corned pork, meat soups, chicken curry etc.
- TWO types of containers are used

1. Meat cans :

- Canned meat products have a shelf stability for upto 2years at room temperature

2. Retort pouch :

- Shelf stable for a period of minimum one year



New technologies in food packaging :

Active or intelligent packaging :

- It is a packaging which has an additional desired role that improves the quality of food products as a supplement to pure packaging properties

Reference : outlines of meat science and technology
- B.D. Sharma.

Photos : <https://www.sciencedirect.com>

<https://www.industrialpackaging.com>

THANK YOU
