



MODULE NO: 14 TECHNOLOGY OF SAUSAGES AND COMMUNUTED MEAT PRODUCTS



Sausage

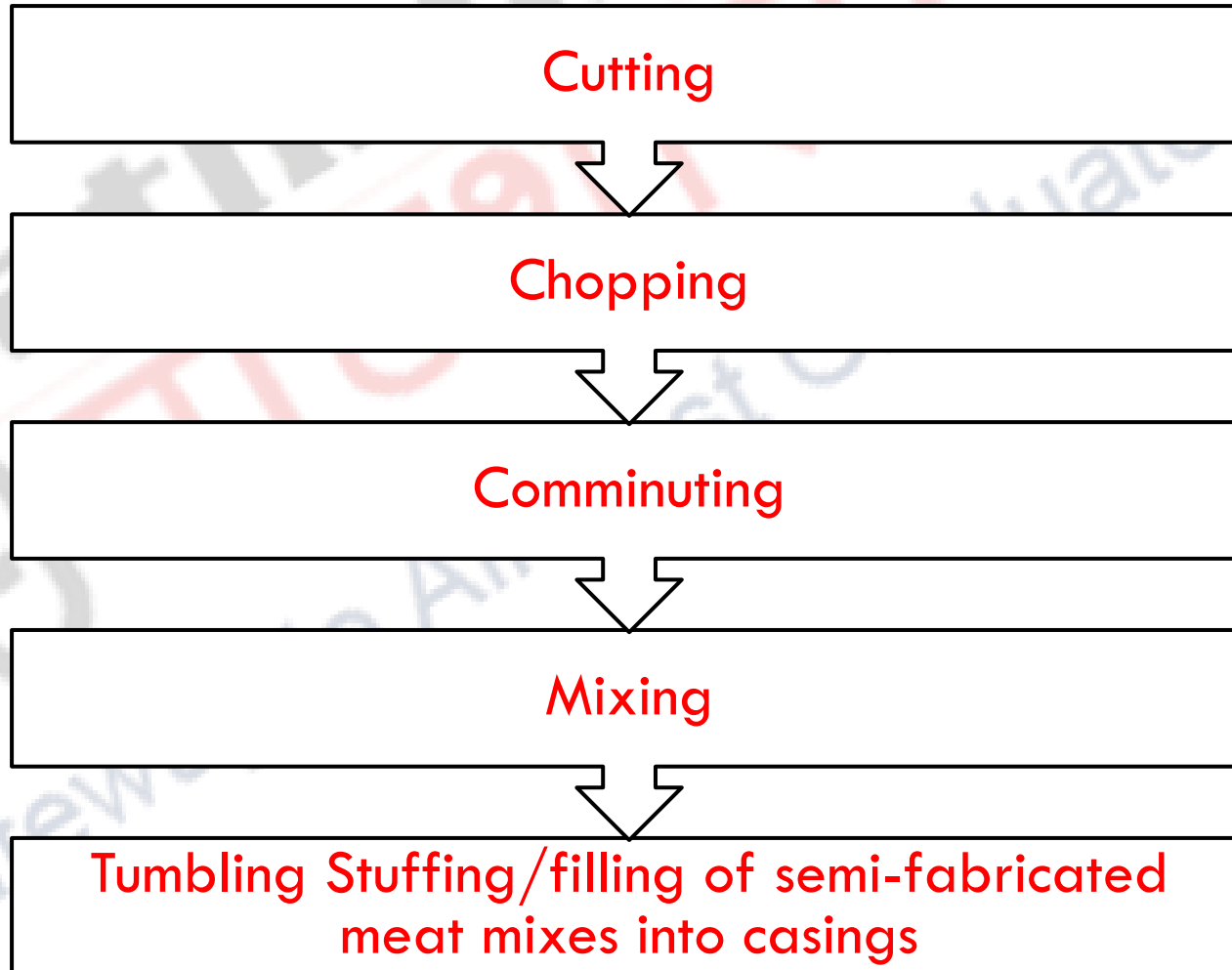
- A sausage: ground meat
- Casing : intestine, but sometimes synthetic.
- Some sausages are cooked during processing and the casing may be removed after.



- Fresh meat and fat are mixed with salt and spices and stuffed into natural casings derived from small intestines of slaughter animals.
- These sausages do not undergo heat treatment at processor level, but are roasted, fried, boiled or otherwise heat treated before consumption



Sausage Processing Technologies





Cutting (reducing meat particle size)

- Mincing (grinding) of lean and fatty animal tissues
- Chopping animal tissues in bowl cutter (discontinuous process)
- Chopping animal tissues in emulsifying machines (continuous process)
- Frozen meat cutting
- Cutting of fatty tissues



2. Salting / curing

- ❑ Salting – Salt (sodium chloride NaCl) adds to the taste of the final product
- ❑ The content of salt in sausages, hams, corned beef and similar products is normally 1.5-3%.
- ❑ This property is used for water binding and texture formation in certain meat products.



□ To reduce the risk of overdosing of nitrite salt, a safe approach is to make nitrite available only in a homogeneous mixture with common salt generally in the proportion 0.5% nitrite and the balance of sodium chloride (99.5%).



Curing of chopped/comminuted meat mixtures

- Curing is applied for most chopped meat mixtures or sausage mixes for which a reddish colour is desired.
- Higher temperatures during processing, e.g. “reddening” of raw-cooked type sausages at 50°C or scalding/cooking of other products at $70\text{-}80^{\circ}\text{C}$, accelerate the process.



There are two systems for curing entire meat pieces, dry curing and wet curing (“pickling”)

The curing mix gradually permeates into the meat, which can be a lengthy process ranging from several days to several weeks.

The second method of curing meat pieces is wet curing, also called pickling, which involves the application of curing brine to the meat.

3. Smoking



- Smoke for treatment of meat products is produced from raw wood.
- Smoke is generated through the thermal destruction of the wood components lignin and cellulose



meat products:

- Meat preservation through aldehydes.
- Antioxidant impact through phenols and aldehydes
- Smoke flavour through phenols, carbonyls and others
- Smoke colour formation through carbonyls and aldehydes



There are two principal smoking techniques:

1. Cold smoking
2. Hot smoking



❑ Cold smoking

The combination of cold smoking and drying/ripening can be applied to fermented sausages and salted or cured entire meat pieces

The optimal temperature in “cold” smoking is 15 to 18°C (up to 26°C).

❑ **Hot Smoking** – Hot smoking is carried out at temperatures of +60 to 80°C.



Comminuted meat products

- ❑ Fresh processed meat products are meat mixes composed of comminuted muscle meat with varying quantities of animal fat.
- ❑ If the fresh meat mixes are filled in casings, they are defined as sausages
- ❑ If other portioning is customary, the products are known as patties, kebab, etc

Cured meat cuts



- ❑ Cured meat cuts are made of entire pieces of muscle meat and can be sub-divided into two groups:
 - ❑ Cured-raw meats
 - ❑ Cured-cooked meats.



Suggested readings

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