



TEHNOLOGICAL VARIANTS PROCESSING SAUSAGE IN MEAT

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Abstract: *This paper follows the purpose of presenting the meat sausage processing operations. In the meat processing, the main elements with a major influence on the obtained preparations are the raw and auxiliary materials, the materials and the technological process. The great influence on the quality of meat products has the manufacturing technology and especially the way of the technological operations.*

Cutting, boning, choosing and sorting on quality, cleaning, shaping and optimal sizing of meat cuts determines the organoleptic and aesthetic properties of finished products.

Keywords: *sausage, sausage processing, technological operations, meat products*

1. INTRODUCTION

Meat is one of the basic foods in human food. From primitive to modern, the meat was consumed in different ways: fresh, crudely-dried or cooked.

The production of sausage is a way of consuming, but also of keeping meat, specific to modern man.

Out of the total meat for industrial processing, meat preparations account for the highest share (over 70%), which is steadily increasing. They are processed from minced beef, pork, sheep or honey, which adds fat, blood, chopped organs and spices. The sausages can include hydrolysed, concentrated or isolated protein of animal or vegetable origin. Once placed in a membrane, sausages are cooked and / or smoked so that they can be eaten as such.

Typically, the preparations have a high nutritional value and are processed from meat disposed of lightly fed (cartilage, tendons) with a tasty, spicy taste and showing a partial hydrolysis of the protein components.

2. TECHNICAL REQUIREMENTS

The raw material which can be used consists of: meat, fat or other edible carcass parts. The most frequently used as raw material are cattle, pork and sheep meat. Poultry meat and venison are also used, but less frequently.

The fat has to be very consistent, refrigerated, frozen or salt cured with 2%.

The edible carcass parts can be organs (tongue, heart, liver, lungs), but also actual carcass parts (cattle head, pork head, outer skin, blood, pork legs, etc.). They can be received as refrigerated, frozen or salt cured.

Drinking water has to meet the conditions according to SR 1342/1984 from a chemical perspective, from a bacteriological perspective it should not contain pathogens and parasites. Drinking water is used as an addition to producing the brad, the brines and for sanitation.

Sodium chloride of type A (obtained through evaporation and crystallisation), extra-fine and of type B (edible rock salt) extra-fine, fine, middlings and lump, it has to meet the conditions of SR 1465/1972. Salt is used in order to obtain meat products in order to form the taste and it is an agent which preserves the raw material and favours the maturing process; it must be stored in dry, clean, scented and odourless rooms.

Nitrite is used in order to obtain the salted colour and it also acts like an antiseptic.[1]

Ascorbic acid and **sodium salts** help at the rapid formation of a red colour which is stable when it comes to light and oxygen.

Polyphosphates retain the water in products, and without producing juice enhances the product's succulence.

Flavouring compounds can be condiments or plants, oleoresins, essential oils. They are used in order to enhance the smell and the taste, the antiseptic and antioxidant effect, and to positively influence the digestion.

Protein hydrolysates are obtained from meat of inferior quality, soy flour, gluten, baker's yeast; they are good flavouring agents.

Protein derivatives used in the meat industry are: gluten, soy concentrates and isolates, skimmed-milk powder, whey powder, casein, blood plasma and collagen protein derivatives. Protein supplements are used as powder or in a hydrated state (emulsions, gels, dispersions in brine).

In some cases, for salami there are also used other coatings in order to prevent dehydration in the commercial market and in order to improve the commercial aspect. For this, there are used other materials like: paraffin, polyvinyl acetate (mixed with triethyl citrate and fungicides) or powders (calcium carbonate, talc, kaolin, etc).[2]

Membranes used in the manufacture of sausages can be classified into:

- natural membranes (intestines) obtained from cattle, pigs and sheep, according to special technologies and preserved by salting or drying;
- Semisynthetic membranes obtained from natural animal products (collagen membranes), as such (nатурin, cutisin) or silk reinforced;
- Synthetic membranes, which may be viscose or polyamide based.

Membranes must meet certain conditions such as:

- be permeable to water and gas vapors;
- be retractable, that is to follow the retraction of the composition in the case of raw salami and dehydrated semi-smoked salami (eg summer salami);
- adhere to the composition, but easily detach it from slicing the product;
- be resistant to filling, binding or clipping;
- be resistant to dry and wet heat treatment;
- have a constant diameter over their entire length;
- no odor that can be absorbed by the composition;
- can be printed and colored and have a characteristic gloss.

3. THE FIRST TECHNOLOGICAL OPERATIONS TO OBTAIN MEATS

In the production of minced meat products - sausages or sausages - two basic products are used: bradt and groats.

Bradt is a linking paste used as a component part in the production of homogeneous or heterogeneous meat, which ensures consistency, elasticity, succulence. The bradt is obtained by finely grinding the meat, using fine grinders, after grinding the Volf grinder, through a sieve with a mesh diameter of 3 mm. During the mincing process, the meat incorporates an additional amount of water in the form of ice flakes, and the obtained paste acquires the ability to bind the composition of the products (pieces of meat and bacon). Maintaining red color is ensured by the addition of nitrates

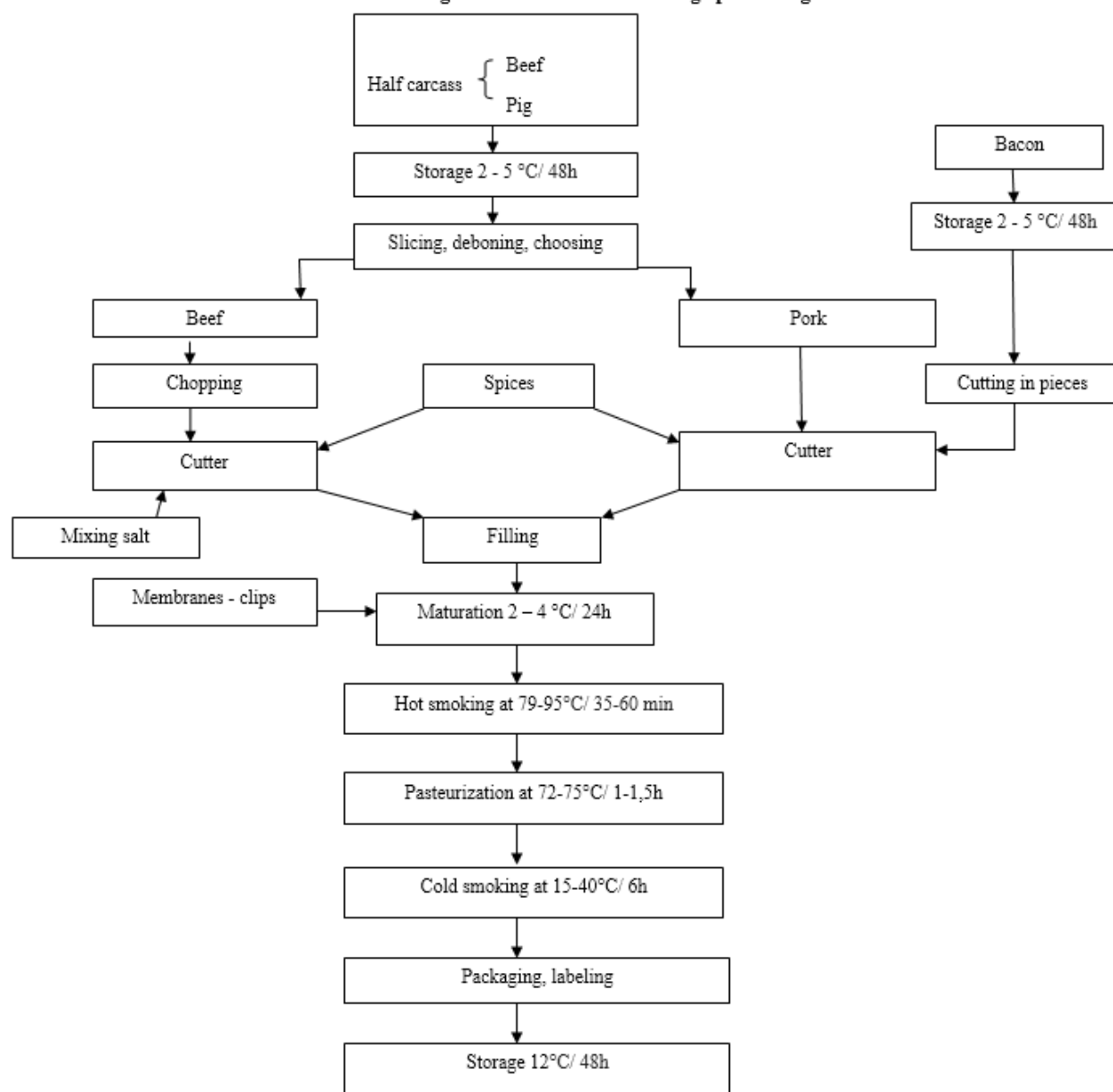
The groats is obtained by chopping the matured beef and pig (for sheepmeat). The slices are made of boneless meat and selected in quality, cut into pieces of 200-300 g and kneaded with the salt mixture, including polyphosphates. After kneading, the crop is placed in trays or containers on wheels, which are kept in the refrigerator at 4°C for 24-48 hours.

Salting and maturing are essential operations in the manufacture of all meat products. The composition of the salting mixture and the applied salting methods differ according to the category of products to be obtained. Meat for the specialties and semiconservers is salted "in the piece", and the meat for the arm and the clove is salted.

Maturing of salted meat takes place in refrigerated warehouses at 2-4°C and can take between 2 and 21 days depending on the product. During maturation, complex physicochemical and biochemical processes are conducted leading to the fading of the meat, the formation of the taste characteristics and the pigments specific to the salted meat.

Most thermal products (pasteurization, baking, boiling, sterilization, smoking) are used to obtain the most of the meat products, resulting in the products becoming edible without prior cooking. These treatments allow color stabilization and the formation of specific taste and flavor compounds, partially or totally inactivate or destroy the alteration microflora, thus conferring product conservability.

Technological scheme for meat sausage processing



3.1. Preparations obtained from minced meat

Sausages are prepared from minced meat, seasoned, introduced into natural or artificial membranes and subjected to thermal treatments (pasteurization, smoking or drying) which differ according to the type and range made. After the diameter of the membranes used and the particularities of the composition, the sausages are classified in: salami, using large-diameter sausages, sausages using thin membranes, drums, reels, calvasses and blooms. Depending on the treatments applied, sausages are classified in: pasteurized preparations (drums, leber, caltaboes and bloodstains); hot and pasteurized cookies (parizer, crenvursts, various salami); hot smoked, pasteurized and cold smoked products (summer salami, cabanas, etc.), hot smoked (pork sausages), raw preparations (Sibiu salami and Sibiu type, raw sausages, babic, ghiudem) smoking and drying-ripening or only drying-aging.

3.1.1. Pasteurized preparations

Pasteurized preparations include: drums, caltaboş, bellows and leber products.

Tobes are made from pork, bacon and rind, organs and other by-products of edible slaughterhouse, spices and possibly added (proteinaceous, arpaca, rice, etc.). The recipe components are boiled, chopped into larger pieces, placed in large natural membranes, pasteurized at 75-80°C for 1.5-3 hours, depending on thickness and cooled with water.

Calvados and blood products are obtained from organs and by-products of the slaughterhouse (pork head, heart, kidney, spleen, rind, ears, liver, lungs, blood and others) cooked and chopped through a 3 mesh site. 8 mm; to this add soup from the boiling of pork head, bacon, shrimp, onion, garlic and spices.

Leber products are obtained from pig meat, bacon, liver and other boiled organs or by-products, hydrated arpacas or pre-gelatin starch, onions and spices chopped and pasteurized. The homogenized composition is introduced into membranes with a thickness of not more than 60 mm, pasteurized at temperatures between 75-80°C and cooled with water.

The pasteurized preparations contain water (between 55-75%), fats (30-36%), protein substances (8-10%), 3% sodium chloride and 7 mg nitrite / 100 g of product.

3.1.2. Smoked preparations from hot smoked and pasteurization

These preparations are classified in preparations of homogeneous structure and heterogeneous preparations.

From the group of hot-smoked and pasteurized preparations with homogeneous structure are included: parizer, Polish salami, crenvors, beer brews, etc.

These are obtained by cutting into fir cutter, soft bacon, additions, spices, water and ice flakes. The composition thus prepared is introduced into the membranes, the bars are subjected to salting, hot smoked and pasteurized (in the center of the product the temperature must reach 68-69°C). Due to homogenization at the cutter, the products are presented in the section as a pink, compact and uniform paste.

Meat preparations with a heterogeneous structure are obtained from bran, shredded grain, cubes of bacon and in some cases from slaughter by-products. The homogenized composition in the mixer is subjected to the same technological operations as the products of homogeneous structure.

Since the components are not finely chopped, the hot and pasteurized meat heterogeneous cuts have a mosaic appearance in the section due to the presence of bacon pieces or pieces of meat. The assortments are differentiated according to the type and quality of the meat from which they are obtained, according to their shape or dimensions as well as their nutritional and organoleptic characteristics.

3.1.3. Smoked preparations, pasteurization and cold smoked

These preparations are made from matured beef, chopped beef, pork, bacon and hot-frozen spices, pasteurization and cold smoking (drying). After a warm smoke for 20-80 minutes, the bars are boiled for 1.5 hours and then smoked for cold 12-24 hours.

The preparations must have a clean, non-stick surface with a continuous, undamaged, yellow-brick color to reddish-brown, without mold or slime. The presence of fused fat is not allowed. In the section it shows a well-bonded and adherent composition to the sheath; pink to red meat according to the assortment, white, uniformly distributed bacon. Consistency is semi-elastic, elastic. Smell and taste are pleasant, smoked and spiced product, characteristic of each assortment.

3.2. Dried preparations, dried and made

They are products with high nutritional value, to which they do not receive thermal treatments. The superior taste characteristics are obtained from the ripening processes the products are subjected to. Maturation contributes enzymes secreted by natural microflora or crops of useful microorganisms (bacteria, molds, yeasts) added. Raw sausages and sausages are classified according to their technological features in:

- sausage, cold smoked (Sibiu salami etc.);
- sausages and sausages obtained by cooking, cold smoking, drying and aging;

- raw, dried and matured salami obtained from sheep and beef not frozen and cold-frozen.

The manufacturing technology involves specific operations: refrigerated storage of the meat to reduce moisture, very careful cutting and completely removing blood, sow, flax and soft bile clumps, draining and charging the chopped meat, placing into the membranes by (for smoked products only), drying and maturing (which may take between 1 and 3 months depending on the assortment).

The main physico-chemical characteristics of raw and smoked or raw and dried salami are: 30-35% water content, 40-50% fat content and 15-18% protein content.

The keeping of raw, smoked and dried salami is done at a temperature of 10-14°C and relative humidity of 70-80%; Under these circumstances, a period of between 30 and 90 days may be maintained.

3.3. Preparations from smoked meat

The assortment consists of: bacon, pork legs, ribs, bark and smoked bones.

Smoked bacon and bacon are obtained by salting and ripening the shaped pieces between 14 and 21 days and cold smoking at temperatures between 30-45°C.

Pork legs, bones are salted, washed in brine, poured and smoked cold at 45°C for 10-12 hours.

CONCLUSIONS

1. Meat products are one of the most important food products because they contain main nutritional elements which are good for people's health and which assures their work capacity.
2. Cold cuts represent an important section of meat products and their quality is directly linked to the quality of the used meat, the meat percentage from the final product, but also to the quality and the number of the used ingredients.

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