



INFLUENCE OF DIFFERENT INGREDIENTS UPON MEAT COLD CUTS QUALITY

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Abstract: This paper presents a research regarding the influence of different ingredients toward the quality of meat cold cuts. Apart from the influence of meat's quality and its preservation, the used ingredients can also contribute to the quality, if the laws about food composition which are in force are followed. The ingredients considered in this study are: sodium chloride, sugar (NaNO₂), ascorbic acid, sodium salts, polyphosphates, flavour enhancers, protein hydrolysates and protein derivatives. The gustative effect that these condiments produce is the reason why many producers use them in order to hide some fabrication deficiencies or those which appear after the alteration process. The main purpose of this study is to help people realize the danger that some ingredients from meat cold cuts can inflict upon consumers.

Keywords: cold cuts, quality, ingredients, risks

1. INTRODUCTION

Meat is one of the staple foods in human alimentation, thanks to its high nutritive value. From prehistoric to modern times, meat has been consumed in different ways: fresh, as dry raw meat or cooked.

Histologically, it is composed of the following tissues: epithelial tissue, neural tissue, blood tissue, connective tissue and muscle tissue.

Chemically, the composition is structured in the following way:

- Water 75%
- Dry matter 25%:



proteins 18%
lipids 3%
nitrogenous compounds - 1,5%
non-nitrogenous compounds - 1,2%
mineral substances 1,2%
trace minerals, vitamins - 0,1%

Fig.1 meat cut

Human evolution also brought new ways of consuming meat.

Cold cuts appeared a very long time ago, the oldest and most spread sausages being salami and dry sausages. In the beginning, the preparation methods were very simple, without adding many ingredients or spices, the products being as natural as possible. As time passed, the preparation methods started to get varied and modern; now they are produced on an industrial scale, faster and more efficient, with a lot of additional components for taste, flavour and aspect.[3]

Under the term of cold cuts, in the broad sense, stand meat products, made of ground meat, spiced and introduced in a casing which can be natural or synthetic; then they undergo a thermal processing after which they can be used in alimentation as such, without cooking them.

Types of cold cuts:

- Salami
 - Sausages
 - Ham
 - Vienna sausages
 - Bologna sausages
 - Specialties:
- { smoked bacon;
loin;
pastrami;
bacon;



Fig. 2. Cold cuts

2. MATERIAL AND METHOD

The expiration date of meat products is different in terms of the way in which each product mix is conserved (by salting, smoking, cold or thermal processing) or in terms of the used raw material, but also in terms of the auxiliary materials that can be used.

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.

The ancillary materials are the different condiments which can also be part of the composition.

Condiments are products with no nutritive value (or with low nutritive value), which are added in the composition of food products in order to provide them with different superior characteristics (taste, smell, flavour), having the role of stimulating gastric secretions, appetite and digestion.[5]

However, this gustatory effect should not be used in order to hide some deficiencies of the manufacturing or those which appears after the product expires.

The condiments are classified after their nature, origin and organoleptic characteristics in the following groups:

- Natural condiments: flowers, fruit, leaves, rhizomes, seeds, barks of some plants. They are used fresh or dried (some of them even frozen - e.g. parsley, dill, lovage, etc.) or they can be used as raw material in order for the condiments to be extracted;
- Acid condiments;
- Industrial condiments (mustard, sauces);
- Essential and oleoresin oils;
- Edible salt (table salt).

Classification of materials used in producing cold cuts:

- drinking water
- sodium chloride
- sugar, nitrite (NaNO_2)
- ascorbic acid and sodium salts
- polyphosphates
- flavouring compounds
- flavour enhancers
- protein hydrolysates
- protein derivatives



Fig.3 condiments used in cold cuts producing

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 brat, 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]

3. RESULTS AND DISCUSSION

3.1 Dangerous ingredients within cold cuts

Xanthan and guar, E-415 and E-412, are gellic agents which retain a lot of water, therefore the products weighs more. They are one of the most dangerous ingredient of cold cuts because they retain in the body the absorption of A, D, E, K vitamins and of minerals like calcium and magnesium, potassium and iron. For example, the foie gras contains these dangerous ingredients for the organism.

One of the most dangerous ingredients within cold cuts it is also the **dextrose**. This is s a substance with a very high glycemic index, and with fast absorbing sugars. Its use is prohibited in a diabetes diet, but also by consuming products that have this substance there's a high chance of getting diabetes. Prague ham has a high amount of dextrose in its composition.

Widely used for the majority of the cold cuts, **the collagen** is a kind of gelatin which has no nutritional properties. Also, people who suffer of hyperuricemia should avoid food products that contain this substance, otherwise they could suffer of gout attacks (the aggressive inflammation of the joints). This is also one of the most dangerous ingredients from cold cuts.[3]

The majority of the cold cuts contain **monosodium glutamate**, even the ham which is called "from the countryside". The substance makes them taste better, but it is addictive. It is prohibited for children and for pregnant women. Because it is one of the most dangerous ingredients there's a high risk of getting diseases like Alzheimer, Parkinson, asthma and heart rhythm modifications.

Bologna sausage is by far one of the most harmful products, especially for the kids. Moreover, it is prohibited for kids. The colouring agent from its composition, **carmine**, is carcinogen. The process of extracting the carmine from an insect is extremely harmful. It is used in order to give the red colour to the products, but it is also one of the most dangerous substances.

Sodium nitrite, or E 250, is used in order to give the cold cuts an appetizing pink colour. It is also one of the most dangerous ingredients from the cold cuts and it enhances the growth of cancer cells. It can trigger thyroid gland disorders, At the same time, it is prohibited for pregnant women, children and ill people. Sausages contain sodium nitrite.

Carrageenan, or E-407, contains co-carcinogen factors. It means that, when decomposed in the colon, it can transform in other substances which can lead to colon cancer and that is why it is one of the most dangerous ingredients. The carrageenan is used frequently in all of the cold cuts because it is a thickening and stabilizing agent.[2]

3.2 Criteria for cold cuts quality assessment

Aspect – freshness and smell. The aspect is not a very precise criterion because the majority of the cold cuts contain flavour enhancers, food additives, water and colouring agents, in order to make them look fresh. Therefore, all the products have to be carefully observed. If the product is sticky, then there is no way for it to be edible. We can also smell the cold cuts to see if they are fresh. A bad, unusual or weird smell should be a warning sign for everyone.

Cold cuts ingredients

A lot of the cold cuts contain a very small amount of meat. Out of the ingredients listed on the label, only one of them is meat, the rest consists of fat, skin, mechanically deboned meat, food additives, salt and water.

Therefore, it is highly recommended to choose those cold cuts which contain a big amount of meat, usually specified in percentage in the ingredient list or we can choose specialties like: pork loin, pork bellies and pork collar. It is good to avoid Vienna sausages, Bologna sausages and even foie gras, if the producers do not offer enough information on the label about the composition of the respective products.

Preferably, these types of cold cuts should be taken from big and well-known producers, because the Bologna sausages and the Vienna sausages are easily “forged” by anonymous producers, therefore, instead of meat, there can be found soy proteins, skin and other meat substitutes.

Colour

An important clue of less harmful cold cuts is the colour: as similar as they are with the colour of the meat from which they are made of, as better they are.

Therefore, it is recommended to buy Vienna sausages which have a colour similar to that of the chicken breast, not necessarily pinkish, even though it catches the eye.

Cold cuts which are strongly coloured have to be avoided, especially if their colour have nothing in common with that of the meat which they are made of.

Condiments

Even though we are tempted to choose cold cuts with a complex taste, given by different mixtures, also adding condiments, there is also a danger behind them: they hide the taste of the meat and therefore, it cannot be fresh.

For example, the garlic, easily hides the unpleasant smell of the meat and the same thing can happen when it comes to other condiments. They act like a camouflage for the quality of the milk and they distract the attention for what should really be observed.

Cold cuts humidity

If we notice a lot of water in the cold cuts, in the vacuum bag or on the paper in which they are packed, then we should not ignore such a thing before buying them.

Cold cuts are injected and if the quantity of this injections is high, it is easily seen in the moment in which the water is leaking. A big quantity of water cannot be accepted in a product of high quality.

4. 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.
3. The national and European laws restrict the number of these ingredients in order to prevent people from getting sick.
4. For each used ingredient there are specialized studies which analyse their influence on the health of the consumers, therefore the cold cuts producers should take into account the legislative indications, and the review bodies (DSVSA, ANPC) should verify if these laws are really followed.

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