

USE OF COMPOSITIONS OF OXYACIDS AND MONOESTERS OF SUCCINIC ACID IN REFRESHERS OF MEAT

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Keywords: meat, refresher, oxyacid, monoester, succinic acid

In the world practice the situations are not rare when the meat raw materials having increased counts of microorganisms, specific unpleasant smell and a number of other defects are used in the manufacture of meat products. This is a consequence of violation of hygiene requirements during raising of animals, conditions of their processing and production of final products. In the course of putrefactive spoilage a decomposition of proteins takes place followed by the formation of primary and secondary hydrolysis products, influencing the food value of meat. The accumulation of phenol, cresole, indole, mercaptan changes the flavour of meat. Lipid fraction of meat can also be strongly affected by this process. The fats undergo hydrolytic splitting and oxidation. The products of hydrolytic splitting can sharply catalyze the oxidation processes. It is the processes of hydrolytic oxidation that have an essential influence on organoleptical characteristics (flavour, colour, odour, consistency) of the final meat products (1). The objective of the present investigations is the development of means slowing down negative effects of the process of hydrolysis and oxidation of meat raw materials. In the world practice for this purpose diverse compositions of sodium and potassium salts of different oxyacids are used as well as of the acetic acid, colloid silicic acid, etc. We have developed an aqueous composition consisting of the mixture of oxysuccinic acids, monoesters of succinic acid and oxyacylated fatty alcohols with even numbers of carbon atoms, lactic and citric acids. Lactic and citric acid when coming in the meat raw materials, have a preservative effect (2). Monoesters of succinic acid and oxyethylated fatty alcohols are used in manufacture of compositions of food additives used in the production of meat smoked products (3). The mixture of oxysuccinic acids taken in combination with the above-mentioned monoesters can significantly slow down the accumulation of secondary products of hydrolysis, thereby helping to remove the unpleasant smell of meat products and to preserve the brighter colour after thermal treatment. The offered composition is used in the amounts of 70-100 g per 100 kg of the raw materials. It can be easily introduced into whole muscle products. The results of the investigations carried out are presented in Tables 1 and 2. The investigations carried out allowed to find that the offered composition is able to slow down the putrefactive and oxidative processes in meat, helping to obtain the final products of good quality.

References

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Table 1. Total microbial count in block beef and pork prior to and after treatment with meat refresher

Product	cfu/g
Beef in blocks (control)	7 x 10 ⁶
Beef in blocks, treated with meat refresher	9 x 10 ⁴
Pork in blocks (control)	4 x 10 ⁵
Pork in blocks treated with meat refresher	9 x 10 ³

Table 2. Sensory evaluation of sardelles manufactured with meat refresher

Samples	Sensory evaluation according to 9-point scale					
	Colour		Flavour		Aroma	
	During manufacture	After 48 hours	During manufacture	After 48 hours	During manufacture	After 48 hours
Sausages prepared traditionally	6.8	6.4	6.7	6.3	6.4	5.9
Sausages prepared from raw materials treated with meat refresher	7.0	6.7	7.0	6.7	7.1	6.6

NOTES

MORPHOLOGICAL ASPECTS OF FORMING QUALITY INDICES OF MEAT AND MEAT PRODUCTS

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Keywords: meat products quality, forming quality indices, index

Objective

The objective of the work was to study the character and degree of change of the forming quality indices of meat products during processing, what is the influence of technological methods of meat processing on the forming quality indices of meat products.

Results and their discussion

As a result of long-term scientific investigations, differentiation of muscular tissue microstructural changes, underlying positive and negative effects on forming quality indices of meat and meat products was carried out, means influencing the above-mentioned changes were determined. Among positive structural changes are first of all weakening of myofibrillar structure (Fig. 1), which increases permeability, accessibility of their structures to the effect of endogenous and exogenously used enzymes, as well as of curing agents, introduced into meat.

Retention of the integrity of myofibrils is basic for maintaining the technological process of meat processing. To negative structural changes, which are characterized by retention of myofibrillar structure of myofibrils, due to the decrease of post-mortem rigidity of meat (Fig. 2), which is determined by retention of myofibrillar structure, the negative influence of this factor on the forming quality indices of meat products is determined.

Formation of supercontracture is one of the most important factors in the forming quality indices of meat products. It should be noted that supercontracture is not a result of partial rupture of myofibrillar structure, but a result of destruction of myofibrillar structure. Investigation has shown that formation of supercontracture is connected with full or partial rupture of myofibrillar structure. Formation of contraction knots and bands in muscular tissue is a result of changes in myofibrillar structure, which are characterized by retention of myofibrillar structure.

aggregation of its structure. In this case it is necessary to consider that moisture unbound in these areas is not subjected to any significant changes through the damaged sarcolemma, and the structure of the compact protein complex is not subjected to any significant changes during a long-term storage (1-3 days).

Investigations have shown that rupture of myofibrillar structure is connected with full or partial rupture of myofibrillar structure. It has been determined that the degree of myofibrillar structure rupture is connected with the degree of myofibrillar structure rupture. The degree of myofibrillar structure rupture is connected with the degree of myofibrillar structure rupture.

muscle structure, in the exposed areas, particularly expressed in the areas of myofibrillar structure rupture, mainly in the exposed areas. Among negative effects on the forming quality indices of meat products are supercontracture and contraction knots and bands in muscular tissue. Another morphological factor, which is connected with the forming quality indices of meat products, is the degree of myofibrillar structure rupture.

Here it is necessary to underline that the degree of myofibrillar structure rupture is connected with the degree of myofibrillar structure rupture. The degree of myofibrillar structure rupture is connected with the degree of myofibrillar structure rupture. The degree of myofibrillar structure rupture is connected with the degree of myofibrillar structure rupture.

The next factor negatively influencing the forming quality indices of meat products is the degree of myofibrillar structure rupture. The degree of myofibrillar structure rupture is connected with the degree of myofibrillar structure rupture. The degree of myofibrillar structure rupture is connected with the degree of myofibrillar structure rupture.

The methods presented in the work make it possible to study the forming quality indices of meat products during processing. The methods presented in the work make it possible to study the forming quality indices of meat products during processing. The methods presented in the work make it possible to study the forming quality indices of meat products during processing.