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

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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 (I).
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 oxyalcylated fatty alcohols with even numberes 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, therby 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)	7×10^6
Beef in blocks, treated with meat refresher	9×10^4
Pork in blocks (control)	4×10^5
Pork in blocks treated with meat refresher	9×10^3

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