

POLYFACTORAL PROTECTION OF SMOKED SAUSAGES

Rogov I.A., Kuznetsova L.S., Snezko A.G., Rozantsev E.G.

Polymer Laboratory, Moscow State University of Applied Biotechnology, Russia

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Microbiological resistance and safety of foodstuffs assamblage are based on the combination of few preserving factors.

The agents with particular antimicrobial activity are usually used for sausages' protection against microbial spoilage.

Some products of mouldes' metabolism are toxic substances, and other products are the feeding medium for pathogenic bacteria. The antimicrobial agents with polyfunctional properties are preferably applied for quality' stabilization of sausage products.

For protection of sausages surface against moulds can be provided by different antiseptics, chemical preservatives, phytocides, organic acids and other compositions of chemical substances. But the influence of such agents to quality of sausages' lipids is practically absented in scientific literature.

In this paper the results of lipids' quality characteristics for smoked sausages produced by application of new domestic (Russian) antimicrobial agent named «ALLUZIN» are shown.

This agent is the balanced combination of Na-salt of dehydroacetic acid and special food additives. The toxicity of «ALLUZIN» was tested in inphuzoria. The genotoxicity and cytotoxicity were studied with bacteria in the SOS-Chromotest in the microbiological analyzer «BIOSCREEN».

At the first comparison «ALLUZIN» with sorbic acids and its salts was run by their capacity for prevention of moulds growth on Saburo medium with applications method. The results shown at the table 1 support that agent «ALLUZIN» at lower concentrations is more effective than potassium sorbate for protection against the most dangerous microorganisms on meat plants - mould and yeast.

At the second the investigation of lipid compound and their quality characteristics of under casting layer of smoked sausages, treated by agent «ALLUZIN», in comparison with control samples from sausage produced into casting, steep in «Delvacide» solution. The castings are art protein.

The lipids extraction was executived by the Folch method. The prepared extract was tested for evaluation of acid and peroxidic numbers and for metilization by gas-liquid chromatography («Intersmat») with phase Silar-10C on chromosorb W/A 120 mesh.

Table 1
Properties of different antimicrobial agents

Studied solution, concentrations, %	The zone of conidia inhibition, mm	Solution' pH
Control - WATER	Solid moulds growth (inhibition zone is absent)	7,0
Potassium sorbate , 10 %	5 - 8	5,0
Solution of «ALLUZIN» 1,25	8 - 10	6,0
2,50	13 - 15	5,5

The mass-spectrometric identification has been carried out by «FINNIGAN 3200». It was shown that lipids from undercasting layer of smoked sausages produced with «ALLUZIN» application have lower acid and peroxidic number than control samples with «Delvacide» (Tab.2).

At the Table 3 the lipids compounds of experimental and control sausage samples are shown. It was shown that the use of «ALLUZIN» favours the preservation of un-saturated fat acid in undercasting layer of sausage. The presence of any oxyacids at experimental and control samples did not detected by detail chromato-mass-spectroscopy.

Thus the treatment of castings by antimicrobial agent «ALLUZIN» make available the effective surface protection of smoked sausages against the affection of non-wanted microflora and «ALLUZIN»' use preservatives the lipid quality of meat products.

It was interesting that agent «ALLUZIN» has been modified the sausage castings. For example, after «ALLUZIN» treatment the physico-mechanical properties of castings are increased, the diffusion is promoted. The treatment conditions for different protein and viscose-armed castings domestic and import production were development.

LITERATURE

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Quality of sausage' fats

Table 2

Sausage' name	Peroxidic number, O ₂ /kg	Acid number, mg KOH / g
«Osobennaya»		
control	5,07	11,10
experiment	1,23	7,59
«Pikantnaya»		
control	13,23	5,76
experiment	4,99	5,70

Composition of fat acids for control and experimental sausages' samples

Table 3

Fat acids C:	Control	Experiment	Fat acids C:	Control	Experiment
10:0	0,10	0,14	20:0	0,10	0,14
12:0	0,08	0,07	20:1	0,79	0,74
14:0	1,67	1,93	20:2	0,35	0,37
14:1	0,18	0,22	20:3	0,08	0,07
Σ 15:0	0,43	0,39	20:4	0,60	0,66
16:0	22,92	22,44	20:5	0,02	0,02
16:1	4,18	4,40	22:0	0,01	0,01
Σ 17:0	0,46	0,45	24:0	0,01	0,01
17:1	0,20	0,30			
18:0	10,75	9,85			
18:1	45,48	46,00	Degree of un-saturativity	0,7784	0,7930
18:2 ω 6	11,20	11,42			
18:3 ω 3	0,39	0,37	Iod number	65,342	66,516