THE RESEARCH OF GROWTH AND TOXIN FORMATION
OF BOTULISM BACILLI IN BOILED SAUSAGES CONTAINING
COLOR AGENT FROM BLOOD

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The effects of different concentrations of sodium nitrite, color agent, and their combinations on the reproduction of the botulism causative agent in mincemeat and products of its toxin in storage conditions of the finished product are investigated.

The object of the study is sausage mincemeat of «Stolovaya» variety with addition of various concentrations of sodium nitrite and its combinations with the coloring agent and sodium sorbate. Sausage mincemeat with different concentrations of the ingredients was inoculated with spores of C. botulinum at the rate of $10^3$ microbial bodies per 1 g. During researches the conditions of development of C. botulinum in boiled sausages were simulated. Control sample is sausage mincemeat without studied additives, which was inoculated with spores of C. botulinum, and subjected to heat treatment similar to the test samples.

It is shown that sodium nitrites have anti-botulinus activity in dependence on their concentration in the recipe of boiled sausages and storage conditions of finished products. The decreasing of sodium nitrates content to 1,5 g and its use in combination with 2% of the coloring agent does not make worse the microbiological indices of quality of boiled sausages regarding to growth and toxin formation of C. botulinum. At the same time in the sausage mincemeat with traditional concentrations of sodium nitrite (7,5–5,0 g) and in the sausage mincemeat which is recommended by us (1,5 g) in combination with the coloring agent (2%), reliable suppression of toxin formation of C. botulinum is only ensured by compliance with sanitary and hygienic requirements for storage (storage at low positive temperatures).

Key words: boiled sausage, botulism bacillus, toxin formation, coloring agent, sodium nitrite, sausage mincemeat, finished product, sorbate, storage conditions.