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3. PROCESSING OF CHICKEN STOMACHS USING ULTRASONICS

In addition to carcasses, poultry processing produces offal, including stomachs whose yield for land poultry ranges from 2.4 to 2.7%. The muscular stomach, which is rich in nutrients and contains about 20% protein, 4% carbohydrates and 2.8% fat. In addition, it also contains a variety of trace elements such as

sodium, phosphorus, potassium, iron and others, and is a valuable protein raw material of animal origin.

Materials and methods. The vital function of chicken stomachs, which are the digestive organ birds, are mainly responsible for grinding the feed mass. The greater the physical load, the greater the strength of the stomach muscles. As a result, chicken stomachs are hard and impossible to chew, which is negatively perceived by most consumers. Given the nutritional value of chicken stomachs, they are usually consumed after thermal processing.

Results and discussion. One of the existing approaches that most effectively addresses the issues of intensification of technological processes in food production is the use of new types of energy and its highly efficient supply to the interacting substances. This type of energy is high intensity ultrasonic vibrations (ultrasonic vibrations), which allow to intensify the processes of chemical, microbiological and food technologies.

Research of domestic and foreign scientists devoted to the use of based on the properties and specificity of ultrasonic vibrations (USC) on biological objects, it has been proven that the basis of ultrasonic processing of meat is the energy effect of ultrasound on the cellular structure of meat, which causes a violation of the integrity of both muscle fibers and connective tissue elements.

Sauce is one of the most common and typical methods of cooking chicken gizzards, which can improve their texture by softening it, giving them a rich flavor and removing a specific odor. The traditional way of using sauce has a problem, as it is difficult for the sauce to penetrate the dense muscle consistency of chicken gizzards. Proper tenderizing of chicken gizzards at an early stage of processing in the sauce can improve the tenderness of chicken gizzards, save energy and reduce the aging time, thus improving product quality. This is facilitated by the use of physical tenderization of meat raw materials, in particular the use of ultrasound, due to its efficient, safe and environmentally friendly advantages.

Ultrasound is accompanied by the effect of cavitation when it propagates in a liquid medium. The cavitation effect is the main cause of physicochemical changes in muscle. Studies have shown that the microjets and microturbulence created by ultrasonic cavitation disrupt the integrity of muscle fibers and connective tissue of chicken stomachs, which leads to a decrease in the degree of pyridine cross-linking in collagen, loosening it, thus improving the tenderness of chicken stomachs. Compared to the traditional tenderization technology, ultrasound can shorten the processing time, save energy and improve the quality of the finished products.

Conclusion. The environmentally friendly technological method of softening chicken gizzards by sonication is effective in improving the quality of meat products, including including the technology of which involves the use of sauces.

References

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