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## INNOVATIVE MODEL OF MEAT PRODUCTS WITH THE USE OF MUSHROOM RAW MATERIALS PRODUCED INDUSTRIALLY

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Interest in mushrooms is due to special flavouring properties of fruit bodies and a unique complex of biological substances, especially proteins. Depending on the type of mushroom, the content of nitrogenous substances ranges from 15.31 to 60.3% (in recalculation to dry substance), which is more than in meat, eggs, peas, and rye. The nutritional value of protein mushrooms is considered with the optimal quantitative ratio of amino acids, as their combination satisfied the needs of the human body at best. They contain more than 20 amino acids, including all the essential ones. In addition, champignons contain an urea (up to 13%), which given carbohydrates can be synthesized into amino acids.

The purpose of our work was to summarize a data of the protein quantitative content and evaluate a balanced amino acid composition of the fresh industrial production mushrooms (mushrooms, oyster mushrooms, shiitake), as well as their use in the development of new meat products formulations. Content of protein in mushrooms and meat products were determined using the method of Keldal. The calculation of the balance of amino acid composition of mushroom protein was carried out according to the methodology suggested by academician N.N. Lupatov. The following was estimated: an utilitarian coefficient of the amino acid composition of protein, reflecting the balance of essential amino acids with respect to the chosen standard; comparable redundancy rate, which characterizes the total weight of non-utilized amino acids in a quantity that is equivalent to their potential utilization in 100 grams of protein-standard. Comparative characteristics of balanced amino acid composition of proteins mushrooms according to the standard of FAO show that the limiting amino acid for the majority of mushrooms is tryptophan, and for certain mushrooms - isoleucine, methionine and cystine. Mushroom protein contains a significant amount of lysine, phenylalanine, tyrosine, valine.

We have developed a technology of boiled sausages and meat loaves with mushroom raw materials. Mushrooms were processed preliminary at t = 100 C, for 20 minutes, cooled at t=0 to 5 degrees or frozen at t = -18 degrees C. Before adding to a minced meat mushrooms crushed up to 0.5 - 1 mm to increase the contact area of the particles and the formation of solid adhesion layer between muscle proteins and mushroom raw materials. Organoleptic evaluation results of minced meat pattern suggested that a mushroom raw materials adding, at the stage of mixing, in the following quantities of mushrooms - 25%, oyster mushrooms - 35% and shiitake - 30% is appropriate for the formulation development.

**KEY WORDS:** meat product, mushrooms, amino acids

## INNOVATIVE TECHNOLOGY OF CONDENSED MILK CANS

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Financial instability, lack of high-quality raw milk and its cost, increase of competition with the imported products, and tendencies to improvement of balanced daily diet of people – are the main factors influencing development of canned milk industry in Ukraine. These factors stimulate producers to direct their activities towards the development of innovative, cost-effective, energy-saving technologies with the intensification of technological processes and production of new types of condensed milk products with a balanced composition, higher biological value with desired organoleptic and physic-chemical properties.

Since the chemical composition of condensed canned milk with sugar does not meet the modern requirements of nutrition, namely daily needs in the use of vitamins, minerals and nutrients, it is proposed to use as filler for canned milk plant material. Plant origin supplements can reduce the deficit of daily diet in vitamins, minerals and other nutrients.

Fruit syrups are recommended from wide range of fillers for use thanks to their organoleptic, physical and chemical characteristics.

The analysis of trends in the food products market has shown that due to unhealthy diet, which leads to the development of several diseases (cardiovascular, obesity, tachycardia, and hypertension), there exists the need for health-care, dietary, healthy and functional products. Analysis of Ukrainian nutrition shows lack of nutriciology due to inadequate consumption of vitamins, minerals, and overload of carbohydrates.

Taking into account current priorities of food industry direction nutrition the technologies of condensed canned milk with sugar and fruit and berry syrups and technology of canned milk with sweeteners (fructose and crystalline fructose syrups) were developed by department of the technology of milk and dairy products. It was found out that adding syrups contributes to the formation of better consistency comparing with traditional products, generates stronger taste and smell of the product. It was established that introduction of the fruit syrups in milk cans allows to receive product with a higher content of biologically active substances.

**KEY WORDS:** condensed milk cans, fillers, sweeteners.