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Food Science for Well-being
23-26 May 2016, Kyiv, Ukraine



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The congress addressed the following topics:

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- **Food Expertise and Safety**
- **Food Technologies**

ENERGY SYSTEMS FOR FOOD CHAIN

- **Energy Efficiency**
- **Machine Building for Food Chain**
- **Intelligent Control Systems**

NATURAL BIOACTIVE COMPOUNDS, FUNCTIONAL AND NATURAL FOOD PRODUCTS, PACKING, STORING AND PROCESSING

- **Natural Bioactive Compounds, Functional and Local Food Products**
- **Packaging, Storing and Processing**
- **Food Processing**

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CHARACTERISTICS OF PROTEIN PREPARATIONS

The intake the healthy and essential food components is crucial for a modern man, and among them proteins occupy a very important place. It is meat industry that provides the population with food, which is the main source of protein nutrition. Taking into account the scarcity of high-quality meat for processing and low purchasing power of the population, manufacturing meat products with high nutritional and biological value requires the expansion and improvement of the raw material resource base. With this purpose in view, non-traditional types of raw meat for processing — offal, blood, collagen-containing raw materials, as well as plant and animal protein preparations that improve the functional properties of raw materials, organoleptic characteristics of finished products — are used in production. However, not all preparations are characterized by balanced amino acid composition and, respectively, high biological value. One of the ways to solve this problem is to create solutions and produce powder mixtures of food additives with higher functional, technological, structural and mechanical properties and balanced composition. The aim is to study the amino acid composition of protein preparations and justify the choice of their rational amount to make a balanced food composition.

Isolated soy products have a high protein content, a relatively well-balanced ratio of essential amino acids (deficient in sulfur containing amino acids — methionine and cysteine, at the same time soy proteins contain a large amount of lysine and leucine), are characterized by stable functional and technological properties, are easily digested in the body, their biological value is not inferior to beef and exceed many well-known protein-containing sources.

Amino acid composition of animal protein preparations varies greatly depending on the morphological composition of starting raw material. For example, proteins from porcine dermis are characterized by unbalanced content of essential amino acids and therefore have low biological value. In this case, complete high-protein preparations (milk proteins, blood proteins, etc.) are used to improve these characteristics.

Whey powder acts as an emulsifier in meat emulsions, has a high biological value, is easily digestible, contains a high amount of cysteine, methionine and tryptophan, and thereby facilitates compensation of the lack of these amino acids in the composition of other protein preparations. On the base of the information obtained from literature resources, we found that integrated use of soy isolate, milk protein, which have high emulsifying and water-binding capacity, with pork rind or other types of low functional collagen raw material makes it possible to significantly improve properties of meat emulsions. It also allows to enrich the amino acid composition of the protein component, expand the technological possibility of using by-protein raw materials, ensure high economic efficiency of the enterprise.

KEY WORDS: *protein preparations, soy proteins, proteins from porcine dermis, whey powder, amino acid composition, biological value*

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UKRAINE

DEVELOPMENT OF MEAT PRODUCTS FORTIFIED WITH IRON

Iron — the most important trace element, which is involved in blood formation, respiration, redox reactions and immunological processes. Daily need for iron is 10 to 30 milligrams. Iron deficiency in the body leads to muscle weakness, shortness of breath, reduced concentration, drowsiness, irritability. Also, brittle nails, split hair, dry skin, wrinkles indicate a shortage of this important trace element. In recent years in Ukraine there is a tendency to increase in the prevalence of iron deficiency anemia (IDA), especially in children.

The aim was to obtain meat products fortified with iron.

When iron enrichment of meat used the blood of slaughtered animals and products of its processing by-products, including the liver and spleen. The advantage of this type of material is that the iron in them is biologically available form and is widely used in regulating oxidative processes occurring in the body.

Integral, stabilized blood that defibrynuye were added in the production of cooked meat paste.

Early preparation stabilized blood pidsolyly, giving it 2.5% of salt and nitrite 0.005%. Sodium nitrite was injected in an aqueous solution and then blood was kept 13 hours at temperatures above 40C. Stabilized 8.5% solution of sodium tripolyphosphate. For blood coagulation prokyp'yatyly 40-60 minutes, stirring occasionally stirring it.

Based on experimental data set optimal amount of blood necessary to add 3% of the total weight of the paste.

The finished product contains 7 mg of iron per 100g of paste, which is about 45% of the daily allowance.

KEY WORDS: *meat, iron, meat paste*