

оскільки він пов'язаний із крупністю, також залежать від скловидності. Під час зберігання показник знаходився в межах 25–28 %, незалежно від температурного режиму. Після трьох місяців зберігання скловидність зерна за обох режимів зберігання на рівні 28 %, після дев'яти і наприкінці зберігання – на 2 % нижча за зберігання в нерегульованому температурному режимі, порівняно зі зберіганням в умовах 5–10 °С. Вміст білка під час зберігання не суттєво відрізнявся від вихідного – 11,8 % – показника до зберігання, незалежно від режиму зберігання.

Отже, вологість зерна пшениці м'якої озимої сорту Світило залежить від умов і тривалості зберігання. В регульованих температурних умовах показник на 1,0–2,4 % вищий, ніж у складському приміщенні. Зберігання в нерегульованому середовищі забезпечує незначне коливання показника впродовж 12 місяців (11,8–13,8 %) і залежить в більшій мірі від погодно-кліматичних умов. Показник натурності вищий за зберігання в нерегульованому температурному режимі, а скловидність і вміст білка не залежать від режиму зберігання.

USE OF RAW MATERIALS FOR DEVELOPMENT OF MEAT SEMI-FINISHED PRODUCTS

O. A. CHERNYUSHOK, *PhD of Technical Sciences*

I. Yu. SHEVCHENKO, *applicant for higher education*

National University of Food Technology

The market of semi-finished products of Ukraine, despite all the crisis representatives important, and it's no accident. Analyzed the market of semi-finished products of Ukraine, it follows that the Ukrainian consumer has increasingly made a choice in favor frozen semi-finished products that allow you to change the time cooking.

As meat products are in high demand among the majority of the population, the problem of increasing their biological value and resource conservation is becoming increasingly important and timely.

During the analysis of scientific and technical domestic and foreign literature, however, it is clear that the trend of creating food products of combined composition was clearly defined. The development of this type of products allows you to enrich traditional products with essential nutrients, and therefore provide a high level of balance in amino acid and vitamin composition, expand the range and increase the body's resistance to harmful environmental factors.

Based on the above, the improvement of the technology of combined food products, namely, meat semi-finished products with biologically active components of raw milk, is promising in expanding the range and increasing the nutritional and biological value of new types of meat products. Therefore, the purpose of the research,

the results of which are covered, is a theoretical and experimental justification of the feasibility of using whey powder enriched with Mg and Mn, as part of meat semi-finished products.

One of the most valuable components of milk is whey proteins, the content of which in whey reaches 0.5... 1.5%. The main ones are β -lactoglobulin (7... 12% of the total amount of milk proteins), lactalbumin (2...5%), serum albumin, immunoglobulins and components of the proteoso-peptone fraction. In addition, the serum contains lactoferrin, enzymes and other components. Whey proteins (albumins and globulins) have valuable biological properties, they contain the optimal set of vital amino acids, and in terms of nutritional physiology, approach the amino acid scale of the "ideal" protein, ie protein in which the ratio of amino acids meets the needs of the body .

The amino acid composition of milk proteins is most similar to the composition of human muscle tissue, and in terms of essential amino acids and branched-chain amino acids (valine, leucine, isoleucine), they predominate over most proteins of animal and plant origin. Of particular value are biologically active low molecular weight microfractions of milk proteins – glycomacropetides, which make up 20% of milk proteins. They minimize the risk of viral infections, promote better digestion and absorption of protein and calcium, participate in the synthesis of vital enzymes and hormones, help develop normal intestinal microflora. In addition, whey proteins significantly reduce blood cholesterol levels

In dry whey enriched with Mg and Mn is present in a small amount of fat (0.05... 0.4%), but its value is that it is dispersed into balls with a diameter of less than 2 mm . Whey powder enriched with Mg and Mn has a high content of mineral salts, macro- and microelements. The main macronutrients of whey are calcium, phosphorus, magnesium, potassium, sodium, chlorine and sulfur (found in proteins). The composition of whey proteins contains the following trace elements: iron, copper, zinc, manganese, aluminum, selenium, iodine and others.

The technological advantages of whey protein products are the ability to use them as a partial replacement for meat protein, fat and other ingredients traditionally used to improve the properties of the emulsion, as well as to: emulsify fat-containing components; reduce the risks of broth and fat inflows during heat treatment; reveal meat proteins; reduce production costs; to improve the taste characteristics of finished products; reduce losses during heat treatment; increase the elasticity and improve the consistency of finished products during cooking and storage.

To achieve this goal, the following tasks were solved: studying the possibility of using whey powder enriched with Mg and Mn in the technology of semi-finished products; calculation of the optimal amount of serum application; study of organoleptic, physicochemical parameters of the developed semi-finished products.

The subject of the study was selected meat semi-finished products in a dough shell, made by traditional technology. Dry whey enriched with Mg and Mn was used as a filler. In the developed formulations, dry whey in the amount of 0.62% by weight of minced meat was added.

Scientific research shows that in terms of sensory parameters, experimental samples are not inferior to traditional products, and in some respects even better. Semi-finished products with the addition of whey had a more pleasant taste and smell, due to the introduction of dairy components in their composition.

Physico-chemical parameters of the products met the requirements of current regulations.

Therefore, based on the above, we can conclude that the results of the research confirm the possibility of creating full-fledged semi-finished products in the dough shell, with the rational use of whey powder enriched with Mg and Mn.

In the future, to improve the technological process of production of semi-finished products, using dry whey enriched with Mg and Mn, the microbiological characteristics of the product will be studied.