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Methodological Basis of Food Production for Special Purposes.

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ABSTRACT

In this article, was founding the choice of meat and vegetable raw for the production' chopped semi-high biological value. By way of functional ingredients was using oat' products and chokeberry. Designed formulation and chopped semi-production technology. Studied the food' and biological value and set the shelf life of the product.

Keywords: chopped semi-finished products, natural functional food supplements.

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INTRODUCTION

In young people not completed the formation of several physiological systems, primarily neurohumoral, so they are very sensitive to disturbance balanced diets. A role played by the changing nature of the power of students who came to the big cities from the countryside, where food rations contain a much greater quantity of plant products. The increase in content in the diet of sausage products of high quality flour leads to a sharp weakening of the intestinal motility and the emergence of constipation. In connection with the violation of the diet during the study, many students develop diseases of the digestive system, called "Young disease", as well as hypertension, neurosis and others [1, 2].

For normal functioning of the body requires a balanced dietary intake of its main components, namely: protein, fat, carbohydrates, vitamins, trace elements. It is important to match the caloric intake of the organism in energy costs depending on the individual characteristics - such as height, weight, age and the degree of physical and emotional stress.

Meat and fish should be mandatory components of the power supply as a major source of high-grade animal protein, essential amino acids and trace elements [3, 7].

The diet to be used dietary supplements. This is due to the fact that, unfortunately, the "ordinary" foods do not provide us with the necessary amount of vitamins, minerals and other nutrients [4].

Scientists see great promise in the creation and production of a new group of specialized products. One of the current trends on the creation of functional meat-based products is the use of vegetable raw materials - the source of a number of nutrients, such as vitamins, minerals, dietary fiber, antioxidants that are beneficial for the activation of physiological processes in the human body.

MATERIALS AND METHODS

As the plant material suitable for the creation of chopped semi-finished products are used for special purposes oat bran and chokeberry. Before you make minced semifinished, oat bran is necessary to grind to a state of flour. Pretreatment oat flour consists in mixing it with water in a ratio of 1: 3 at a temperature of 20 ° C and aged for 10-15 minutes.

To ensure the stability of the components during storage and make the product functional properties, enriched minced semifinished natural antioxidant, which were added to the minced meat in the form of flour from chokeberry (Aronia).

The choice of raw materials justified the high content of antioxidants - bioflavonoids called proantonianidami, the effect of which is 50 times stronger than the effect of ascorbic acid and tocopherol. In fruits chokeberry vitamin P 2 times larger than black currants, and 20 times more than oranges and apples. And the content of iodine in the berries is 4 times higher than strawberries, gooseberries and raspberries.

As the meat raw materials most suitable for the introduction of the chopped semi-finished products to supply the students selected poultry meat as a dietary raw materials, as by reducing the fat in the product eliminates the excess cholesterol. Poultry meat - a rich source of protein and amino acids, and low in calories.

To improve the nutritional and biological value and provide the desired structure of semi-finished meat and vegetable use pearl barley.

The process of swelling of pearl barley was tested for the ability to bind moisture and the rate of moisture absorption. The process of water absorption of pearl barley was accompanied by a significant increase in its volume. Upon contact with water groats for 1 hour, the mass fraction of bound moisture was 39.4% of the total bound water, 1.5 hours - 65.2%. Subsequent exposure cereals (2 hours) swelling increased to 86.1% of the total bound water and, after 2.5 hours - 100% [5].

In conducting research quality chopped semi-used set of common, standard and modified methods of research, including physical-chemical, biochemical, microbiological.

Mass fraction of moisture, protein, fat, carbohydrates and salt determined in a chemical analyzer, meat and meat products "FoodScan" according to the instructions for use [6].

Tasting score chopped semi-conducted on a 5-point scale.

Microbiological parameters established according to generally accepted methods of microbiological studies of meat and meat products,

The vitamin content is determined by liquid chromatography LCMS-10EV, and mineral composition - the universal analyzer Spectroscan Max GV.

Functional properties of chopped semi studied on laboratory animals.

RESULTS AND DISCUSSION

Based on the results of the theoretical and laboratory researches was developing the technology of chopped semi-finished "Student". Prescription composition of which is shown in Table 1.

Technology of production of semi-finished meat containing "Student" includes the steps of: receiving, storage and preparation of the animal and vegetable raw materials; defrost poultry carcasses at a temperature of 18 ... 22 ° C; Metallomagnetic treatment oatmeal and flour from chokeberry; Hydration oat bran; Soaking pearl barley; washing and cleaning of onions; preparation of ingredients (eggs, salt, spices, water); boning and grinding poultry carcasses, pearl barley; preparation of flour from chokeberry; preparation of stuffing; molding of semi-finished and breaded breading; cooling and freezing at -25 ... -35 ° C; packaging, labeling, storage and sale.

Physical and chemical indicators of chopped semi-shown in the table 2.

Spend tasting score meat containing semi-finished on a 5-point scale assessment, the results of which are reflected in profilogram in the figure 1.

Table 1: Prescription composition of chopped semi-finished "Student"

Name	"Student"
Poultry white or red	49,00
Pearl barley soaked	15,00
Oat flour is hydrated	18,00
Bulb onions	6,00
Drinking water	4,70
Breadcrumbs	4,00
Eggs and egg products	2,00
Table salt	1,00
Flour of chokeberry	0,25
Pepper black or white powde	0,05
Total	100,00

Table 2: Physical and chemical properties of chopped semi-finished products "Student", 100 g

Indicators	Value
Moisture content,%, not more	69,7
Mass fraction of protein,%, not less	20,3
Fat content at least%	4,4
Mass fraction of carbohydrates,% not less	4,1
Mass fraction of salt, not less than%	1,5
Energy value, kcal	137,2

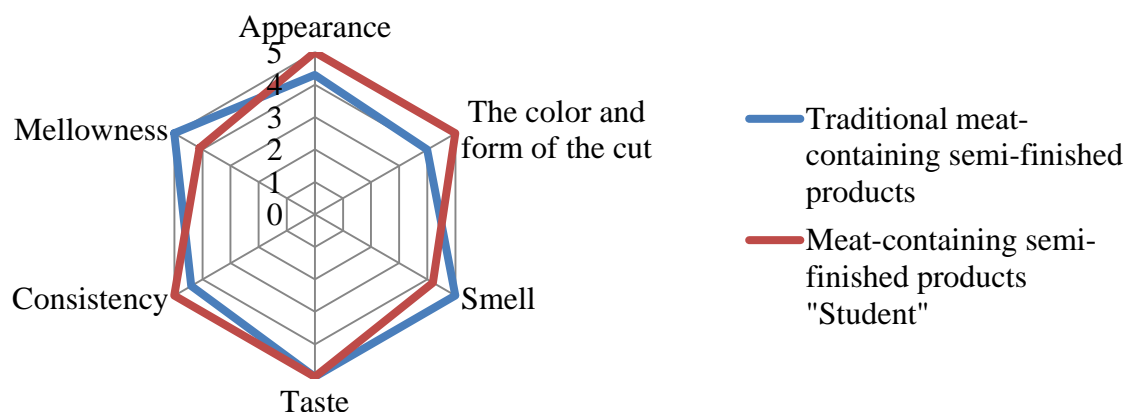


Figure 1: Profigram sensory analysis

Functional properties of meat containing semi studied on laboratory animals. The effect of the introduction of the diet of experimental animals on samples of chopped semi-hematologic picture and determined Changes in the growth-weights. To determine the cytolytic activity of substances introduced into the semi-finished product, it is studied the activity of marker enzymes serum blood: aspartate aminotransferase and alanine. These figures are within the permissible limits. Thus, the meat component is not introduced into the semi-finished product does not have a toxic effect on the body and do not lead to increased cytolysis that would indicate their toxicity.

The approbation of the technological workshop for the production of meat products on the basis of the Stavropol State Agrarian University and established the possibility of the implementation of the technology in terms of public catering in schools.

CONCLUSION

On the basis of studied literature and conducted experiments justified the choice of meat and vegetable raw material for the production of semi-finished minced. Prefabricated includes the whole complex of essential amino acids, a high content of water-soluble vitamins and minerals. Upon entry in the meat-based plant components, the product is enriched in dietary fiber. As supplements recommended to use chokeberry in the amount of 0.2% to impart functional properties and extend shelf life.

The results were presented at national and international competitions and exhibitions, which are marked with diplomas and certificates in various denominations.

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