

MODELLING OF CRAFT PATE RECIPE WITH ADDITION OF HEMP PROCESSING PRODUCTS

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It is known that meat products play an important role in human nutrition. Currently, multi-component meat products with a rich chemical composition are in great demand. Multicomponent meat products have increased nutritional and biological value, balanced amino acid and mineral composition.

Pate – a food product made from minced meat, fat, offal with the addition of salt, spices, subjected to heat treatment or fermentation until fully cooked and then for consumption. In the production of pates uses UT raw meat, which is a rich source of animal protein, lipids, contains small amounts of vitamins and minerals.

Analysis of the food consumption market shows that in modern society sausages have become one of the most popular products. However, these products do not meet the characteristics of physiology and biochemical processes of the human body due to the increased amount of salt, fat, spices, as well as the presence of flavoring and technological food additives that are not safe for health. Ease of consumption, high organoleptic characteristics contribute to the fact that pate is quite popular among consumers, with the greatest demand for boiled sausage.

The use of plant ballast components (fiber) is very popular. After all, plants contain a large number of necessary biologically active substances.

Powder meal of cannabis, which is included into the paste, normalize the work of gastrointestinal tract, improves metabolic processes in the body and helps reduce sugar in the blood. In it indicates a large content of easily digestible protein – 35 grams per 100 grams of powder. However, the main criterion for selection was the content of polyunsaturated fatty acids (PUFA) omega-3 and omega-6, which is not synthesized in the body of man. Besides that, it contains vitamins group B and microelements: potassium, magnesium, zinc. Hemp cake contains dietary fiber, which helps cleanse the body of toxins, is low in calories.

The results of the tasting evaluation showed that the addition of hemp cake powder in the amount of 1% has almost no effect on the organoleptic characteristics of the product. Samples with the addition of hemp cake powder in the amount of 5 and 7% have an improved appearance and color. The powder gives elasticity and the product acquires a pleasant fresh aroma. Pâtés have a uniform color and the correct shape. However, increasing the mass fraction of hemp cake by more than 10 % leads to a deterioration in consistency, in particular pate loses its juiciness.

The introduction of additional components in the polydisperse minced meat system, in particular fiber affects the stability of the minced meat system. Adding hemp cake powder helps to stabilize the minced meat system. Hemp cake powder was added for 1%, 5%, and 7% according to the experimental sample 1, 2, 3. Studies of model minced meat systems showed that the addition of hemp cake for 5% has the most favorable effect on organoleptic and functional-technological properties of pate. There is increased yield, increased water and fat holding capacity (tabl. 1).

Table 1 – Functional and technological properties of pate

Sample	The yield of the finished product, %	Water holding capacity, %	Fat holding capacity, %	Humidity, %	Active acidity
Control	75.5	70.6	72.0	70.9	6.2
Sample 1	76.7	72.3	72.2	72.1	6.3
Sample 2	78.9	73.9	72.7	72.9	6.3
Sample 3	78.8	73.7	72.6	72.7	6.2

Developed meat pies with the addition of hemp cake is a plastic-viscous product, which is characterized by a plastic viscosity. The consistency of the finished pate directly depends on the moisture content, fat, degree of grinding. The plastic viscosity values given in tabl. 2 were obtained for each sample.

Table 2 – The value of the rheological parameters of the pate

Indicator	Control	Sample number		
		1	2	3
Plastic viscosity, Pa×sec	0.8	0.04	0.035	0.037

Samples №1 and №2 have approximately the same plastic viscosity. The differences in the modulus of elasticity of different samples of pate can be explained by the different content of the additive of hemp cake powder. The quantitative indicator of the degree of viscosity in all samples shows the rate of destruction of the structure, the lowest value in the sample №3 indicates that the destruction of the structure of this sample occurs to a lesser extent, and the highest – in the sample №1.

Thus, experimental studies confirm the possibility of producing meat pate with the addition of hemp cake powder as a functional additive. The influence of different interest powder made meal of cannabis on the organoleptic, functional technological and rheological properties developed pates. The optimal doses for the use of hemp cake powders in the formulation have been established. This component composition will not only regulate the functional and technological characteristics of minced meat systems such as pate, but also enrich them by adding ballast substances – hemp cake powder.