

розжарювання потужністю 100 Вт. В дослідженнях шляхом індивідуального зважування поросят визначали наступні показники: жива вага поросят при народженні, їх абсолютний приріст, середньодобові прирости живої ваги по періодам, збереженість тварин у віці 21, 35 і 105 днів.

Використання опромінювача ІЧУФ-1 з дозою 500 Вт інфрачервоного світла з доповненням ультрафіолетового опромінення потужністю 15 Вт дозволило підвищити середню живу вагу молодняка свиней у свинарнику-маточнику в умовах дочірнього підприємства «Маліцький Агро» на 1,2 кг (4,4 %; $P \leq 0,001$), абсолютний приріст живої ваги за період дорощування у тварин збільшився 1,1 кг, середньодобовий приріст – на 4,4 % ($P \leq 0,001$) і збереженість тварин – на 4,2 %. Таким чином, виявлено ознаки хорошого добробуту свиней – свободу забезпечення достатнього приросту, відповідних умов, санітарно-технічних засобів, які можна використовувати в умовах післявоєнного відновлення. Так як, нині тваринницькі підприємства в Україні наполегливо працюють, щоб забезпечити продовольчу безпеку та добробут своїх мешканців навіть у ці важкі часи.

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Abstract. Considers the influence of infrared radiation on the productivity of piglets. The use of the emitter IChUF-1 with a dose of 500 W infrared light with the addition of UV radiation power: 15 W will allow to increase the average live weight, the absolute increase of live weight during the rearing period, the average growth of young pigs.

Keywords: hygiene, well-being, piglets, heating, lamps.

UDC 613.2:641.053.2

SCIENTIFIC BASICS TO DEVELOP FUNCTIONAL MEAT PÂTÉS

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Abstract. Functional meat products are intended to preserve valuable substances in the raw materials and to compensate for the lack of certain macronutrients and micronutrients. Flaxseed, rice, maize and sunflower flours are introduced to ensure the necessary balance of the fatty acid composition of functional meat products. Studies of rice and flaxseed flours showed significant advantages of the latter for ensuring the

functional properties of the pâtés. It is proven to be rational to fulfill the replacement of meat raw materials by 15 % of flaxseed flour in the formulation of functional meat products. A promising direction for creating functional pate products is combination of maize and flaxseed flours, this increasing the protein content in the mixture due to flaxseed flour, and enriching the mixture with polysaccharides due to maize flour.

Keywords: functional food products, nutrients, meat products, flaxseed flour, rice flour, amino acid composition.

Functional foods contain functional ingredients their addition being beneficial to the health of consumers, namely probiotic bacteria, prebiotics, dietary fiber, synbiotics, antioxidants, polyunsaturated (ω -3) fatty acids, plant sterols, biologically active peptides, minerals and vitamins [1, 2]. This suggests that dietary and lifestyle modification is a practical strategy to reduce the incidence of chronic diseases [2, 3]. New ingredients should be present in the formulations in such quantities that have a positive impact on the health of consumers [4, 5]. The functional meat products are to combine and optimize their composition in order to achieve proper nutritional and biological value, preserve the most important components of raw materials, and compensate for the absence of a number of macro- and microelements by including them in formulations of functional ingredients. Often the functional properties of meat products are achieved by changing the content of lipids and fatty acids or adding fiber, vegetable proteins, monounsaturated or polyunsaturated fatty acids, vitamins, calcium, phytomaterials, etc. [5]. These components can significantly affect human health, but the qualitative and quantitative composition of these substances must be correctly selected [6]. The development of functional meat products is also taking into account the deficiency of certain substances in the diet of specific consumer groups [7].

To achieve good results in the balance of the fatty acid composition of functional meat products, the use of vegetable raw materials in their recipes, primarily vegetable oils, as well as flour, makes it possible. As part of the research, an assessment was made of the nutritional, physical, chemical and technological properties of different types of flour used in the composition of functional pate products intended for feeding children of preschool and school age (Tab. 1).

Table 1. Physical, chemical and technological parameters of flour samples

Parameter	Flaxseed flour	Rice flour	Maize flour	Sunflower flour	Flour mix *
Water, %	6.93	9.80	7.85	5.69	8.57
Protein, %	26.11	6.50	7.27	31.97	19.15
Fat, %	14.62	2.17	2.38	9.89	8.19
Ash, %	5.86	81.02	0.26	6.83	3.12
Carbohydrates, %	46.48	0.51	82.24	45.62	61.0
Swelling, cm ³ /g	12.2	3.6	0.54	1.0	7.4
Hydration level	1:6	1:7	1:6	1:3	1:7
Water retaining capacity, %	622.5	575	220.0	300.0	220.0
Fat retaining capacity, %	192.5	245	137.0	170.0	132.5

*) mix of maize and flaxseed oils in the ratio of 1:1

The research of amino acid composition of flour samples showed that the content of essential amino acids is higher in flaxseed flour. In particular, there is an advantage in the quantitative content of amino acids such as arginine, isoleucine, phenylalanine and lysine. In terms of the importance of ensuring the functional properties of the finished product, the most valuable amino acid is lysine, since this substance contributes to brain function, which is very important for children of primary school age. To formulate a pâté intended for preschool and school children, the priority issues were the chemical composition, bioavailability, proportions of components, processing method etc. In particular, vegetable oils were used in the composition, which have a pronounced antioxidant effect. They also effectively inhibit the growth of tumors, inactivate toxic substances and bacteria, and have anti-inflammatory and immunoprotective traits [8]. The fat component of the daily diet should provide no more than 30 % of the energy required, including in equal amounts separate fractions of fatty acids, that is, saturated fatty acids : polyunsaturated fatty acids: monounsaturated fatty acids = 1 : 1 : 1. Such a composition of «ideal» fat is the basis for the development of norms for the physiological needs [9]. To improve the content and lipid profile of meat pâtés, their formulation was changed, which reduced the total content of fat, cholesterol and improved the lipid profile by replacing part of the animal fat with more healthy lipids, the characteristics of which are more in line with scientific dietary recommendations [10].

Thus, the use of meat in the composition of pâtés for preschool and school children is necessary, since the meat contains the biologically active substances that determine its functional properties: complete animal protein, bioactive peptides, minerals, vitamins, fatty acids, and for the enrichment of pâtés with fatty acids it is advisable to use vegetable oils, as well as corn and sunflower flour for enriching pâtés with vegetable protein and carbohydrates.

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Анотація. Функціональні м'ясні продукти призначені для збереження в сировині цінних речовин, заповнення нестачі деяких макроелементів та мікроелементів. Лляне, рисове, кукурудзяне та соняшникове борошно залучається для забезпечення необхідного балансу жирнокислотного складу функціональних м'ясних продуктів. Дослідження рисового та лляного борошна показали значні переваги останнього для забезпечення функціональних властивостей паштетів. Доведено доцільність заміни м'ясної сировини на 15% лляного борошна у рецептурі функціональних м'ясних продуктів. Перспективним напрямом створення функціональних паштетів є комбінування кукурудзяного та лляного борошна, що дозволяє збільшити вміст білка в суміші за рахунок лляного борошна та збагачувати суміш полісахаридами за рахунок кукурудзяного борошна.

Ключові слова: функціональні харчові продукти, нутрієнти, м'ясні продукти, лляне борошно, рисове борошно, амінокислотний склад.

UDC 621.327

RESEARCH OF ULTRAVIOLET RADIATION AS A DISINFECTANT OF AGRICULTURAL PREMISES

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Abstract. Ultraviolet radiation was studied as a disinfectant for agricultural premises, with the determination of the limits of the bactericidal effect of ultraviolet radiation on harmful microorganisms.

Keywords: fumigation, ultraviolet, irradiator, decontamination.

Disinfection of agricultural premises is an urgent issue today, which is due to the use of outdated and dangerous for workers fumigation treatment methods. The optimal method of disinfection for industrial premises is the use of combined methods of lighting with the use of ultraviolet emitters.

Determination of the optimal and modern method of decontamination of agricultural premises.

Of all the existing methods of decontamination of premises, in the process of finding an alternative to existing methods (chemical) and with preservation of efficiency, it is rational to pay attention to decontamination with the help of ultraviolet radiation. The method is used to remove pathogenic microorganisms from the internal environment. Ultraviolet disinfection is often used in combination with other methods,