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THE USE OF NANOTECHNOLOGY FOR SURFACE PROTECTION OF MEAT PRODUCTS

Sergey Ivanov [1], Igor Strashynskyi[1],

Vasil Pasichnyi [1], Valentin Olishevskyi[1], Andrii Marynin[1], Valeriy Zakharevich[1]

National University of Food Technologies, 68, Vladimir str., Kyiv[1], pasww1@ukr.net

Fundamental basis of nanotechnologies are new, previously unknown properties of the materials arising from the transition to the nanoscale particle size. The nanometer scale properties specificity and the new physical phenomena resulting are caused by the dimensions characteristic in the nanoobjects structural elements (they are in the range 10^{-9}-10^{-7} m), then we can consider nanostructures regarded as a special state phase. By working with such small sizes manifest quantum effects and intermolecular interactions.

An integral part of the paradigm of a healthy diet is to ensure safety for the user of the food, because today food is one of the main sources in chemical and biological nature exposure hazardous substances of. These contaminants can appear in it during production, storage and sales, as well as come from the environment (according to the literature, about 90 % of food poisoning caused by biological factors).

The nanotechnology using is the packaging materials manufacture of food products. Package based on nanotechnology are divided into active and effective. Active nanopacking – is packaging, which has constant properties (e.g., plastic, blocking the penetration of carbon dioxide, oxygen and / or pathogens).

Efficient nanopacking reacts to changes in the environment – the emergence of a pathogen, food deterioration. For example, a package with immunoactive indicator changes colour during the violation of temperature storage products.

Advanced are antibacterial and antifungal surface package coated with silver-, zinc- or magnesium nanoparticles, a lightweight and durable heat-resistant film with silicate nanoparticles coated with modifiable permeability and others.

One solution of the problem of protecting meat from defeat by various microorganisms is a way of packaging as protective coatings from aqueous polymer dispersions directly on the surface of the product.

Such protection is regulated by the mass transfer processes, reduces the weight loss of the finished product, improves the sensibility, as well as ensuring that the technology of packaging and storage is a modern and rational. A characteristic aqueous polymers dispersions feature is the possibility it's applying to the surface of any shape.

KEY WORDS : nanotechnology, packaging, meat products

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