15. Food fortification for the correction of vitamin D deficiency

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Introduction. Human health depends significantly on the quality and structure of nutrition, so the food industry comes to the aid of medicine. The development of the production of fortified products is an urgent challenge today, because these products are able to have a prophylactic effect on the human body.

Materials and methods. Food fortification have been viewed theoretically.

Results. Vitamin D deficiency is one of the global medical and social problems of humanity, which according to the World Health Organization has the character of a non-infectious-metabolic pandemic of the XXI century. Since vitamin D is an integral regulator of the transcriptional activity of genes that control 3-5% of the human genome, its significant role in the functioning of the human body is multifaceted. Vitamin D deficiency causes not only pathologies of the bone system, but also the development of obesity, diabetes, hypertension, inflammation, autoimmune and oncological pathologies, reproductive health disorders. Overcoming hypovitaminosis D is relevant both for the whole world and for Ukraine in particular, since the normal level of vitamin D in blood plasma is registered only in 4,6%, insufficiency – in 13,6%, deficiency – in 81,8% of the country's residents.

Food fortification is the practice of purposefully increasing the content of vitamins and trace elements in food to improve the nutritional qualities of food and have a positive effect on people's health, and, as a result, reduce the state's health care costs and improve the overall efficiency of the economy. Development of technologies of fortified food products for mass consumption and their introduction into production with the aim of helping to solve the modern scientific and practical problems of public health protection caused by deficiency and insufficiency of vitamin D.

Main objectives of scientific investigations are the following: justify the dosage and the method of adding the selected fortifiers to the composition of the products; develop recipes and scientifically substantiate the technologies of fortified products for mass consumption for the purpose of prevention and correction of vitamin D deficiency; develop projects of regulatory documentation for new types of fortified food products; organize epidemiological studies to study the prevalence of deficiency and insufficiency of vitamin D in the population of Ukraine; organize clinical studies to study the effectiveness and safety of fortification of food products for the purpose of prevention and correction of vitamin D deficiency; to establish the social significance of innovative fortified food products based on their physiological effectiveness in clinical conditions; improve the existing and develop new algorithms for the correction of vitamin D deficiency and vitamin D deficiency, which take into account the initial level of vitamin D in the body, the reaction to the applied prevention/treatment with the possibility of their dynamic correction; increasing the quality and volume of educational and informational work; o carrying out scientific and methodical activities.

Expanding the range of fortified food products, the consumption of which by the population will allow to adjust the status of vitamin D in the most physiological way. Establishing the effectiveness and safety of using fortified food products to correct the level of vitamin D3 for the population, maintaining a stable average daily intake of vitamin D without the risk of its overdose.

Conclusions. Fortified products of the food industry can fully ensure the prevention of foodborne diseases, the amount of nutrients adequate to the body's needs, high efficiency and complete safety.