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INCREASING ZINC CONTENT IN CAKE PRODUCTS

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Modern life of people is influenced by unfavorable environmental situation and increased stress. In this regard, scientists emphasize the need to provide the diet with biologically active components that can protect the human body from the effects of negative factors. Taking into account the current difficult situation caused by the COVID-19 pandemic, the search for potential protective and therapeutic antiviral strategies is of particular and urgent interest [1].

It is widely known [2] that for more than 50 years, zinc deficiency has negatively affected the human immune system. According to the National Dietary Survey of Adults, human zinc intake is less than 70% of the recommended daily dose [2]. Therefore, the development of new food technologies enriched with this component is relevant. Recently, the attention of scientists is drawn to the need to increase the nutritional value of flour confectionery, as they are consumed by 55% of the population [3].

In view of the above, we are researching the possibility of increasing the nutritional value of flour confectionery by introducing non-traditional vegetable raw materials. In particular, the technology of cake products with the introduction of pumpkin seeds and buckwheat flour with partial replacement of wheat flour and butter has been developed [4-5]. Our research showed that unconventional raw materials contain a much higher amount of zinc (Fig. 1).

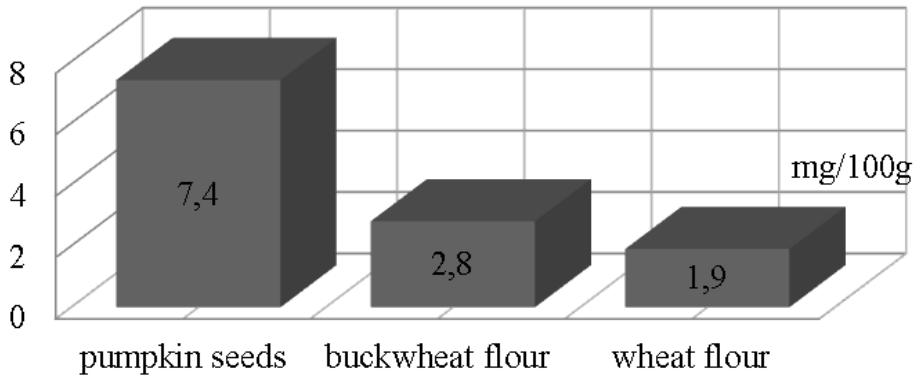

Fig. 1 **Zinc content mg per 100 g of raw material**

Thus, compared to wheat flour, pumpkin seeds have 3.9 times more, and buckwheat flour - 1.5 times. In addition, it should be noted that pumpkin seeds and

buckwheat flour have a higher protein content with the best amino acid content [4-5]. It is known that the combined consumption of zinc with proteins promotes its better absorption [6].

Thus, the introduction of new cake products of pumpkin seeds and buckwheat flour to replace traditional raw materials will increase zinc in combination with other biologically active components. Consumption of new flour confectionery products will have a positive effect on strengthening human immunity, which is especially important in today's complex environmental conditions.

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INFORMATION TECHNOLOGY FOR CALCULATING MATHEMATICAL MODELS OF DYNAMICS OF TWO POPULATIONS

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No organism can live in complete isolation from others, but, existing in one ecological niche, individuals often compete. The competition is due to limited resources such as food, space, water and so on. In some cases, one species may destroy the other for protection purposes rather than for use as a food source. The peculiar manifestations of interspecific interactions are illustrated by predator-prey and host-parasite systems, when one species serves as food for another.

The problem of population growth has begun to attract worldwide attention since Malthus proposed the "grim theory" in 1798. It notes that humanity can only survive