

**Vera DROBOT, Anastasiia SHEVCHENKO, Yuliia BONDARENKO**

Nastyusha8@ukr.net

National University of Food Technologies, Kyiv

**UKRAINE**

### **ENRICHING OF BREAD FOR PATIENTS WITH DIABETES BY MINERAL SUBSTANCES**

The World scientific community confessed that the modern food ration doesn't provide our organism by a sufficient amount of mineral substances, those results in development of diseases, particularly diabetes mellitus. It induces to enrich especially bread, as the everyday use product, by these substances. The use of organic salts is more effective than inorganic, as in such form they are in the organism.

The aim of our researches was to determinate the influence of Zn, Mg, Ca, Fe citrates on the technological process and quality of bread for diabetics in that sugar is replaced by fructose. These substances are important for them, because zinc assiststosynthesizeinsulin, magnesiumisincludedinenzymes, calcium activates transporting of nutrients, iron stimulates hematogenesis.

In our researches we used citrates got by nanotechnology. These salts were brought in dough in an amount that satisfies 50% of day's necessity on condition of the use 277g of bread per day.

It's set that the presence of citrates intensifies a spirit and lactate fermentation as a result of enzymes' activation of microorganisms and flour. It's confirmed by the increase of sugars' accumulation and digestion in the process of the dough's ripening. There is an influence on the flour's protein complex. On the amount of gluten citrates don't almost influence, however its resiliency diminishes and tensility increases because of activating the flour's proteolytic enzymes. A volume and porosity of bread increase.

Thus, citratesoftheinvestigatedmetals are expedient to use for enriching diabetic bakegoods by mineral substances.

**KEY WORDS:** *citrates of metals, diabetes, bread*