

CONFECTIONERY TECHNOLOGY FOR PATIENTS WITH DIABETES AND CELIAC DISEASE

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According to the World Association of Gastroenterology, currently 1% of the world population are suffering from celiac disease. Celiac disease is a chronic, systematic disease characterized by mucosa damage of the small intestine by gluten, which is a component of the wheat, rye and oats gluten complex. Celiac disease is often accompanied by diabetes.

At the National University of Food Technologies it is conducted the research aimed at the development of pastry (cakes, muffins, biscuits) for patients with diabetes and celiac disease. As a sugar substitute there were used polyols of a new generation (isomalt, maltitol, lactitol, erytritol) and their mixtures with fructose. As a gluten-free flour rice, corn, buckwheat, soy flour were used. The effect of sugar substitutes on the structural and mechanical characteristics of the test masses of cakes, muffins, biscuits made on celiac and gluten-free flour was examined. The mechanism of heat treatment and the optimal parameters of cakes, muffins, biscuits baking on a gluten-free flour and sugar substitutes was determined.

The sorption properties of baking (cakes, muffins, biscuits) made on sweeteners such as isomalt, maltitol, lactitol, erytritol on gluten and gluten-free flour were determined. Developed innovative technologies of confectionery for celiac disease and diabetes are suggested to consider as a big technology system, which is divided into subsystems (kneading, baking, storage). The optimal parameters for each subsystem and recipe were determined. The food, the biological and the energy value and also glycemic were identified in the new pastry products. According to the developed mathematical model the assessment of the new types of flour products quality was calculated. It was done on the versatility indicator of three levels of properties which indicate the percentage availability of chemicals from the daily needs of the human diet. New technologies are developed and approved by the regulatory documents.