

PSYSSICOCHEMICAL CHARACTERISTICS OF FUNCTIONAL BISCUITS AND *IN VIVO* DETERMINATION OF GLUCOSE IN BLOOD AFTER CONSUMPTION OF FUNCTIONAL BISCUITS

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Abstract

Biscuits are confectionery products, which are mostly made from flour, fats and sugar. Various types of biscuits are commercially available, but today, people want to be healthy and functional biscuits have to be introduced.

In order to determine physicochemical properties of functional biscuits, three types of biscuits with fructose have been made: basic biscuits (control) and biscuits in which Acacia gum (Fibregum™) and inulin were added. Production of biscuits includes several steps of production: measuring raw materials, mixing powder raw materials, adding water and oil, mixing, resting dough to rise (refrigerator, 15 min.), rolling out, shaping, baking (150 °C, 7-10 min.), cooling and packing. Following parameters have been analyzed: mass of biscuits (Mettler Toledo AB204-S analytical balance), length and thickness of biscuits (Powerfix calliper), moisture (ISO 6540), ash (ISO 5984:2002), proteins (Method of Lowry), fats (AACC Method 30-25), reducing sugars (AACC Method 80-68), fructans (spectrophotometric) и dietary fiber (AACC Method 32-21.01). Also, we have *done in vivo* research to measure the influence of biscuits over the level of glucose in the blood in healthy people, people with type 1 diabetes and type 2 for a time of 30, 60, 90 and 120 min. after consumption of the biscuits. Glycaemia was measured with a strip glucometer.

As a result of the experiments we found that the addition of inulin and Fibregum to the recipe of the biscuits is increasing: moisture content, proteins, fats, reducing sugars, total sugars and fructans after inversion, as well as the total nutrition fibers. We have determined that after consumption of all three types of biscuits, the level of glucose in the blood increases, relative to the initial (on an empty stomach). The best results for all groups of people have been obtained through consumption of the biscuits with Fibregum.

From the results, it can be concluded that produced biscuits have characteristics of functional food. Adding Acacia gum and inulin in biscuits contributed to change in values of the analyzed parameters, whereupon increasing the content of dietary fiber should be pointed out.

Key words: *Functional biscuits, Inulin, Fibregum™, Level of glucose, Blood.*