THE USE OF TAGATOSE AND MALTITOL FOR THE MANUFACTURE OF MASTICATORY CARAMEL FOR SPECIAL PURPOSES

A. Dorokhovych, O. Bogok, L. Mazur

The authors consider worldwide studies aimed at finding alternative to white crystalline sugar in foods for people with diabetes. Among a number of mono- and disaccharides, monosaccharides a significant advantage belongs to tagatose, which has low glycemic index (GI = 3.0%), low calorie 6.28 kJ (1.5 kcal / g) and prebiotic properties. In Ukraine, such innovative food product has never been used in the manufacture of confectionery products. At National University of Food Technologies for the first time, the investigations on using tagatose for the manufacture of different groups of confectionery products were carried out. The use of tagatose in the manufacture of chewing caramel has at least three advantages: it is low-caloric structure-forming agent, creates prebiotic effect and improves taste. Owing to similarity of the physicochemical (viscosity of water solutions, hygroscopic property, water-retaining power, etc.) and organoleptic (sweetness, taste) properties of tagatose with the properties of saccharose, it is a convenient sugar analogue in the technology of confectionery products.

The feasibility of using tagatose with anti-crystallizer polyol maltitol was established, and to prevent staling as water-retaining materials, glycerin should be used. By using mathematical 4-factorial, experiment method was established, the optimal ratio of raw ingredients tagatose, maltitol, gelatin, glycerin 70: 30: 8.0: 2.0, which is the basis of candy recipes "Magic of taste". The authors developed well-maintained chewing effect for 6 months by means of this method. By means of DRON UM-1 diffractometer it was established that during 6 months of storage, substantial crystalline structure of caramel increases. Calculations of energy value, glycemic showed that caramel "Magic of taste" deserves the label "Product with reduced calorie", "Product with the reduced glycemic", Chewing caramel "Magic of taste" has dietetic functionality and can be consumed by all groups, including people with diabetes. At the XVI tasting "Sweet triumph 2015" competition chewing candy "Magic of taste" received the diploma "Triumph of innovation."

Keywords: masticatory caramel, monosaccharide tagatose, polyol maltitol, glycerin.