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88

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11. Impact of dried apple pomace on the quality of gluten-free bread

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Introduction. Gluten-free bread is unbalanced in the content of macro- and micronutrients, which must be taken into account when developing new recipes for gluten-free products and following a gluten-free diet. In order to enrich the chemical composition of gluten-free bakery products, different cereals and flours, fruit and vegetable powders (dried pomace) are used.

Apple processing products can be the promising raw material that can increase the nutritional value of gluten-free bakery products. In the formulations of foreign-made products and mixtures for baking, apple dietary fiber is used, which is also used as a dietary food supplement. However, the dosage and manufacturer of such fibers are not specified.

Materials and methods. We were faced with the task of researching apple fiber powders on the market and comparing their impact on the quality of gluten-free products. The work investigated bread made from starch with the addition of rice flour, guar gum and xanthan, dried apple pomace of Ukrainian production and "Blonnik Jablokowy" of Polish production. Determined the characteristics of the properties of raw materials. In order to establish the effect of additives on the quality indicators of bread, we carried out test laboratory baked goods and assessed the quality of bread according to generally accepted methods.

Results. Physicochemical indicators of the studied raw materials differed insignificantly, in particular, the humidity was 4.8-8.5%, the acidity was 3.2-4 degrees. However, the size of the particles of pomace and the intensity of their color significantly exceeded those for samples of apple fibers. When carrying out test laboratory baking, the investigated raw materials under study were added in an amount of 2-8% to the starch mass. It was found that supplements have a significant effect on the acidity of the dough, which is due to the high content of organic acids in them and the effect on the intensity of the fermentation process. It was found that apple pomace significantly darkens the crumb of products, due to the high content of melanoidins formed during the drying of the pomace. "Blonnik Jablokowy", in comparison with apple pomace, have a light cream color, so the darkening of the crumb is less intense. In samples with the addition of pomace and apple fibers, the specific volume decreases, the porosity of the bread deteriorates significantly, and a pronounced smell of dried apples appears. In our opinion, this is due to an increase in the water absorption capacity of the dough with additives.

Conclusions. It is advisable to use apple processing products in gluten-free bread technology, but their dosage depends on dispersion, acidity and color. By-products from apples contribute to an increase in the taste of products and their nutritional value due to an increase in the content of dietary fiber.

References

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