

Technology of rye bread with topinambur powder

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Rye bread with saccharified scalded flour stable high demand due to peculiar taste properties, prolonged shelf life, high digestibility of rye nutrients. Because of features of biochemical compound of rye flour brewed bread is not recommended for consumption of people with violation of carbohydrates metabolism.

For increasing of content of physiological and functional components the way of production of bread with adding of topinambur powder and oilseeds and nuts meal has been proposed. It was installed that adding of topinambur powder decreases gasholding ability and increases gasforming ability of dough from rye flour. Bread gets a specific taste, more wet crumb, decreased porosity, bigger content of sugar and acidity. Thus, task of regulation of quality of bread through of choosing of optimal dosage of topinambur and technology of dough making has been installed.

For proving of optimal regimes of producing joint influence of topinambur quantity (X_1) from 2 till 6 %, quantity of flour in brewing (X_2) from 5 till 15 %, quantity of flour in leaven (X_3) from 10 till 20 % has been investigated. Volume of bread from 100 g of flour with fact moisture has been chosen as optimal criteria (Y_1), index of elastic deformation of crumb (Y_2) as criteria of preserving of freshness of bread, content of sugar (Y_3) and acidity of bread (Y_4).

The experimental and statistical Box-Wilson method has been used for installing of optimal dosage of raw materials and technological parameters of bread making. Multifactor experiment has been implemented by D-optimal plan. For processing of experimental data correlating –regressive analysis has been used. As a result regression characterizing dependence Y_1, Y_2, Y_3, Y_4 have been obtained. Regression have adequate coefficients that were checked by Fisher criteria. Obtained mathematical models encourage to vary outgoing factors for obtaining bread of planned quality. In particular, quantity of topinambur powder – 6 %, quantity of flour at the brewing – 5 % and in leaven – 20 % in case of dough moisture 49 %.

Installed optimal parameters have become a base for making regulations for technology of brewed rye bread of increased nutritional value.

KEY WORDS

cupcake, cake with pumpkin seeds, dietary fiber, pastry

Indicate type of presentation: Oral Poster