

TECHNOLOGY OF PASTA WITH THE APPLICATION OF FLOUR OF DOMESTIC VARIETIES OF TRITICALE AND ION-OZONED WATER

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Abstract

One of the effective ways to expand the range of pasta is to increase their nutritional and biological value, giving them therapeutic and preventive properties due to the increase of protein, dietary fiber, vitamins, macro- and microelements in pasta. Aim of the research was to study the effect of ion-ozonated water and the addition of triticale flour mixed with wheat on the quality of pasta.

The objects of study were wheat flour from the variety "Almaly", triticale flour from the variety "Taza Elite" and ion-ozonated water. The influence of individual factors - the volume of triticale flour additive - V^{opt} , current frequency - n^{opt} , and ion-ozonated water concentration - $C_{i/o}^{opt}$ on the change in the rheological properties of pasta dough, the properties of pasta, as well as the physicochemical properties and amino acid composition of pasta were studied. The quality of pasta is determined according to GOST 31491-2012; 14849-89. Amino acid composition of pasta was studied by capillary electrophoresis (M-0438-2009). The technological properties of the flour and the properties of the dough are evaluated according to the conditional rheological indices controlled by the instruments: Farinograph-E; Amilograph-E; Alveograph (AlveOlink). The strength of pasta is determined by the limiting load force using the device "Structurometer ST-2". Mathematical models were compiled and optimal modes were determined.

It has been proven that the effect of triticale flour "Taza Elite" mixed with flour from "Almaly" wheat and ion-ozonated water used for kneading dough improves the dough stability compared to the control by 5.8 minutes in terms of rheological property, increases the protein content by 1.9% and the amount of amino acid composition of 2.74% compared with the control of the finished product.

The obtained data of quality control products, representing a promising direction in the development of pasta.

Key words: Pasta, Ion-ozonated water, Triticale, Full-factor experiment, Amino acid composition, Rheological properties.