

Research of the Influence of Different Methods of Bakery Properties of Flour According to the Results of Test Laboratory Baking

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Abstract: Checking the technological analysis of wheat grain grown in the fields of the Syrdarya region.

Keywords: wheat grain, flour, bread, baking production.

In the world, the grain processing industry is one of the most important sectors of the agro-industrial complex for providing the population with food. The policy of grain independence of the Republic of Uzbekistan is designed to solve problems of further increasing grain production volumes, as the basis for creating food and feed supplies state funds, as well as using it with maximum efficiency and expediency. Over the years of sovereignty in the Republic, significant success has been achieved in the modernization of food production, the introduction of resource-saving technologies based on deep processing of domestic raw materials exhaustion of resources and a decrease in the share of imported raw materials and food products. The range of bread products for mass production and special purposes has been significantly expanded.

The relevance of the study is also related to its compliance with priority areas of research in the field of studying the technological properties of wheat grain cultivated in various agrometeorological conditions, and determining the most effective methods for processing this grain.

Scientific research shows that in order to grow sustainable and high-quality grain from winter grains, it is important to take into account the specific weather, soil conditions, and water resources of each area and region

Environmental testing of wheat varieties, selection of the most suitable for the soil and climatic conditions of each region and their correct placement allows us to achieve high yields. The natural climate of the country ensures the quality of grain in general, the amount of protein and gluten in wheat grain. It should be noted that durum wheat varieties, unlike soft wheat, are less resistant to drought, high temperatures, yellow rust, brown rust and black ergot and do not lose grains during ripening.

In Uzbekistan, the minimum temperature for germination of winter wheat seeds is on average 6.00C. At higher temperatures, their germination accelerates. The correct setting of planting standards and timing has shown high economic efficiency due to increased yield and quality of the crop. When cultivating winter grains, with strict adherence to all agrotechnical requirements, the yield will be 60-70 centners per hectare and higher. Wheat sown in autumn yields 25.0-30.0% more than wheat sown in spring. In different regions, special attention is paid to the correct choice of timing for sowing wheat. Since the growing season of winter wheat is longer than that of other agricultural crops, choosing the most optimal sowing dates gives good results. Recently, scientifically based agronomic methods for growing various varieties of wheat have

been developed. It was found that plants planted too early or late suffered greatly from leaf rust and powdery mildew.

To obtain high-quality baked goods, it is necessary to effectively prepare grain for grinding, in the process of which significant difficulties arise due to the fact that Erno is a living organism and all processes occurring in it are subject to its biological system. In turn, the biological system of grain can be divided into several types: morphological, physico-chemical and biochemical. To explain the processes occurring in the grain during its preparation for grinding, its structure, basic chemical and biochemical properties are considered, and modern processing technologies are analyzed. The process of preparing grain for grinding. Based on the fact that the main raw material for the production of flour is wheat grain, the work investigated the technology of preparing it for grinding.

In a market economy and, accordingly, high competition, the production of products that meet the increased requirements of consumers is one of the priority tasks of bakery production. The baking properties of flour have a significant influence on the formation of bread quality.

The work used flour obtained from the grain of the studied varieties of wheat, grown on soils with varying degrees of salinity, and three grinding batches of grain. The comparison sample (control) was the quality indicators of bread made from wheat grain flour.

The research results are presented in tables 1

Table 1. The influence of wheat flour on bread quality indicators

Indicators	Values of quality indicators for bread made from wheat flour varieties		
	Chillaki	Tanya	Gromm
Humidity, %	42,4±0,1	42,5±0,1	42,1±0,2
Acidity, degrees	3,0±0,2	3,1±0,1	2,9±0,3
Porosity, %	75,5±0,5	74,0±1,0	72,0±0,5
Dimensional stability in relation to H:D	0,44	0,47	0,46
Volumetric yield of bread, cm ³ /100 g flour	448	447	442
Specific volume, cm ³ /100 g of bread	316	315	312
Organoleptic evaluation, score	86	85	88
Quality category	good	good	good

As follows from the data in Table 1, bread obtained from wheat flour grown by the turtle bug had fairly high quality indicators and was characterized on the quality category scale as “good”.

From the analysis of the research data it follows that the quantity and method of adding wheat flour had a certain impact on the progress of the technological process and the quality of the finished products.

The lifting force of the dough, which characterizes the activity of fermentation microflora, had better performance in the variants when adding flour to the dough and at the stage of yeast activation. The dough lifting force values were correlated with the rate of carbon dioxide accumulation in it as a result of the alcoholic fermentation reaction. When adding flour at the dough kneading stage, these indicators, namely lifting force and gas formation rate, had values lower than the control ones, by 2 minutes and 4.4%, respectively.

The value of the gas-holding capacity of flour in the variants with the addition of wheat flour at the stage of preparing the dough and dough was lower than the control value by an average of 3 cm³, which is explained by a decrease in the mass fraction of gluten in these semi-finished

products. At the same time, samples in which flour was added at the stage of yeast activation had a higher gas-holding capacity of the dough due to the additional gluten proteins of flour.

The increase in the volume of products is explained by an increase in gas-forming ability, and the change in crumb compressibility is explained by the effect of the flour lipid complex on the physical properties of gluten. The lipid complex of flour contains unsaturated fatty acids, which help strengthen gluten and, as a result, increase the dimensional stability of hearth products. The acidity of the flour is slightly higher than that of grade I wheat flour, which leads to a slight increase in the acidity of the bread. It should also be noted that the crumb of products with flour is lighter than the control sample, obviously this is due to the bleaching ability of organic acids.

Bread samples with flour added directly to the dough had lower indicators relative to all other samples. It should be noted that the values of the main informative indicators of bread quality in the variant under consideration were within the limits established by GOST for these types of products.

Experiments have shown that wheat flour has a positive effect on the main indicators of bread quality, which determine its consumer value. Adding flour is most advisable in the first stages of preparing wheat varieties of bread (in dough or activated yeast). The yield and technological indicators of wheat flour from wheat grain grown on soils with varying degrees of salinity, and various grinding batches from this grain were studied.

Methods for using the resulting batches of wheat flour from the grain of the studied wheat varieties with different technological quality indicators have been determined.

Changes have been made to the existing technological regulations for the production of varietal wheat flour from milling batches of grain with different technological quality indicators.

It has been established that the preparation of grinding mixtures in different versions, taking into account glassiness, allows you to adjust the properties of raw materials and obtain high-quality products from flour with a wide range of indicators that determine its baking properties.

Wheat flour obtained from grinding batches meets the requirements of current production standards in terms of quality indicators.

Developments in the direction of the research carried out ensure an expansion of the volume of effective processing of wheat grain grown in various agrometeorological conditions, which is a necessary measure, since there is not enough rainfed land in the republic for growing wheat.

The use of flour from grain grinding batches with various technological parameters allows us to obtain good quality bakery products that meet consumer requirements.

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