IMPROVEMENT OF THE ORGANOLEPTIC PROPERTIES OF OAT FLOUR IN THE PREPARATION OF BREAD PRODUCTS BY ADDING AN APPROPRIATE PROPORTION

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Abstract. This article describes the results of the research conducted on optimizing the organoleptic characteristics of bread products made from corn flour. In this, scientifically based conclusions were made on determining the optimal proportions of bread making by mixing wheat flour with oat flour.
Keywords. Oatmeal, flour, volumetric mass, porosity, core, sourness, organoleptic indicators

Enter. Organoleptic evaluation is carried out to determine the compliance of the organoleptic quality indicators of products with the requirements of regulatory and technical documents. Organoleptic evaluation is carried out through the senses to determine the appearance, color, taste, smell, consistency, etc. A tasting commission consisting of at least five people is formed based on the selection of tasters, taking into account their individual sensitivity and ability to detect specific differences in color, taste, smell, and aroma. The organoleptic method evaluates the quality of bread using human senses: sight, smell, taste, touch, and hearing.

The following indicators of bread are determined by the organoleptic method: appearance, state of packaging, signs, shape, condition of the surface, color, taste, smell, firmness, broken appearance. The organoleptic method is characterized by the simplicity and speed of detection, but it has a subjective nature and can lead to biased evaluation.

Bread is usually made from wheat flour. But although it is effective to mix other components to make its composition more useful, organoleptic properties are not always optimal. By adding oat flour to wheat flour, it increases its useful properties. Oat flour is a valuable and useful product that can be consumed in a variety of ways. Our people usually prepare and eat bread and bakery products from it. Making bread from oat flour is also technologically complicated, and at the same time, the organoleptic indicators do not leave a positive impression.

The purpose and specific issues of the research. It is to develop optimal methods of making bread by mixing wheat flour with recycled sorghum grown in the Republic of Karakalpakstan.

Material and methods. In order to prepare high-quality, nutritious, environmentally friendly, dietary, and food safety-compliant daily consumer products from the finished product, wheat flour was mixed with 10, 15, 20, 25, 30% oat flour, and the organoleptic indicators of the finished product were analyzed.

Table 1

Bread products scoring scale

Indicators	Significance coefficient	Evaluation on a 5-point system	Evaluation on a 100-point system
Shaped	2	1-5	2-10
Surface color	1,5	1-5	1,5-7,5
Surface	2,5	1-5	2,5-12,5
Core condition	5	1-5	5-25
Porosity	3	1-5	3-15
Fragrance	3	1-5	3-15
The taste	3	1-5	3-15
Total	20		20-100

In addition, the organoleptic method cannot fully determine the chemical composition of bread and the presence or absence of harmful substances. In the process of tasting, the senses determine not only the taste, but also the appearance, smell, color, and consistency of the product.

When evaluating the organoleptic quality of bread, each indicator is usually evaluated in a 5-point system and is converted into a total 100-point system depending on the importance levels of the indicators (see Table 1). In this case, bread rated above 70 points is considered suitable for consumption

RESEARCH RESULT AND DISCUSSION

The organoleptic indicators of the finished product were analyzed by mixing wheat flour with different amounts of oat flour in different proportions. An expert commission consisting of 7 people was formed to carry out the experiment. The obtained results were summarized and the evaluations of the samples were summarized. Each indicator was converted into a 100-point system.

7 indicators of organoleptic evaluation were assessed at 5 levels based on established criteria. On the basis of these criteria, the level of importance of indicators evaluated in a 5-point system varied (see Table 4.21). First, the organoleptic evaluation of bread made from 1st grade wheat flour was determined. Evaluation of 7 indicators of bread was carried out in a 5-point system. In this case, the average rating given to the shape of the bread was 4.3 points.

Table 2

Organoleptic indicators of bread prepared by adding white oat flour to wheat flour in different proportions (2022-2023 year)

Varieties	The amount of oatmeal added	Indicators							Overall grade, points
		Shaped	Surface color	Surface	The condition of the core	Porosity	Fragrance	The taste	
		Significance coefficient							
		2	**1,5**	**2,5**	**5**	**3**	**3**	**3**	**20**
Wheat flour (control)		4,3±0,05	4,2±0,05	4,2±0,05	4,2±0,05	4,1±0,05	4,2±0,05	4,3±0,05	84,20
Uzbekistan 5	10 %	4,3±0,05	4,2±0,05	4,2±0,05	4,2±0,05	4,1±0,05	4,2±0,05	4,3±0,05	85,04
	15 %	4,4±0,05	4,3±0,05	4,3±0,05	4,3±0,05	4,2±0,05	4,3±0,05	4,4±0,05	85,89
	20 %	4,4±0,05	4,3±0,05	4,3±0,05	4,3±0,05	4,2±0,05	4,3±0,05	4,4±0,05	86,75
	25 %	4,5±0,05	4,4±0,05	4,4±0,05	4,4±0,05	4,3±0,05	4,4±0,05	4, ±0,05	88,05
	30 %	4,3±0,05	4,2±0,05	4,2±0,05	4,2±0,05	4,1±0,05	4,2±0,05	4,3±0,05	83,65
Daulet	10 %	4,4±0,05	4,3±0,05	4,3±0,05	4,3±0,05	4,2±0,05	4,3±0,05	4,4±0,05	85,50
	15 %	4,4±0,05	4,3±0,05	4,3±0,05	4,3±0,05	4,2±0,05	4,3±0,05	4,4±0,05	86,82
	20 %	4,5±0,05	4,4±0,05	4,4±0,05	4,4±0,05	4,3±0,05	4,4±0,05	4,5±0,05	88,12
	25 %	4,6±0,05	4,5±0,05	4,5±0,05	4,5±0,05	4,4±0,05	4,5±0,05	4,6±0,05	89,45
	30 %	4,4±0,05	4,2±0,05	4,3±0,05	4,2±0,05	4,1±0,05	4,2±0,05	4,3±0,05	84,97
Rich oats	10 %	4,4±0,05	4,3±0,05	4,3±0,05	4,3±0,05	4,2±0,05	4,3±0,05	4,4±0,05	86,31
	15 %	4,5±0,05	4,4±0,05	4,4±0,05	4,4±0,05	4,3±0,05	4,4±0,05	4,5±0,05	88,46
	20 %	4,6±0,05	4,5±0,05	4,5±0,05	4,5±0,05	4,4±0,05	4,5±0,05	4,6±0,05	90,67
	25 %	4,8±0,05	4,7±0,05	4,7±0,05	4,7±0,05	4,5±0,05	4,7±0,05	4,8±0,05	93,30
	30 %	4,5±0,05	4,4±0,05	4,4±0,05	4,4±0,05	4,3±0,05	4,4±0,05	4,5±0,05	88,64

4.2 points were given to the color of the surface, 4.2 points to the surface, 4.2 points to the condition of the core, 4.1 points to the porosity of the bread, 4.2 points to the aroma and 4.3 points to the taste. Calculations were made according to the coefficient of importance of each indicator, and when converted to a 100-point system, the total price of bread was 84.2 points. This sample was designated as a control.

In the same way, when bread was prepared by adding 10% oat flour to wheat flour, the organoleptic score was 85.0 points for the Uzbekistan-5 variety, 85.5 points for

the Daulet variety, and 86.3 points for the addition of rich oat variety flour (see Figure 1).

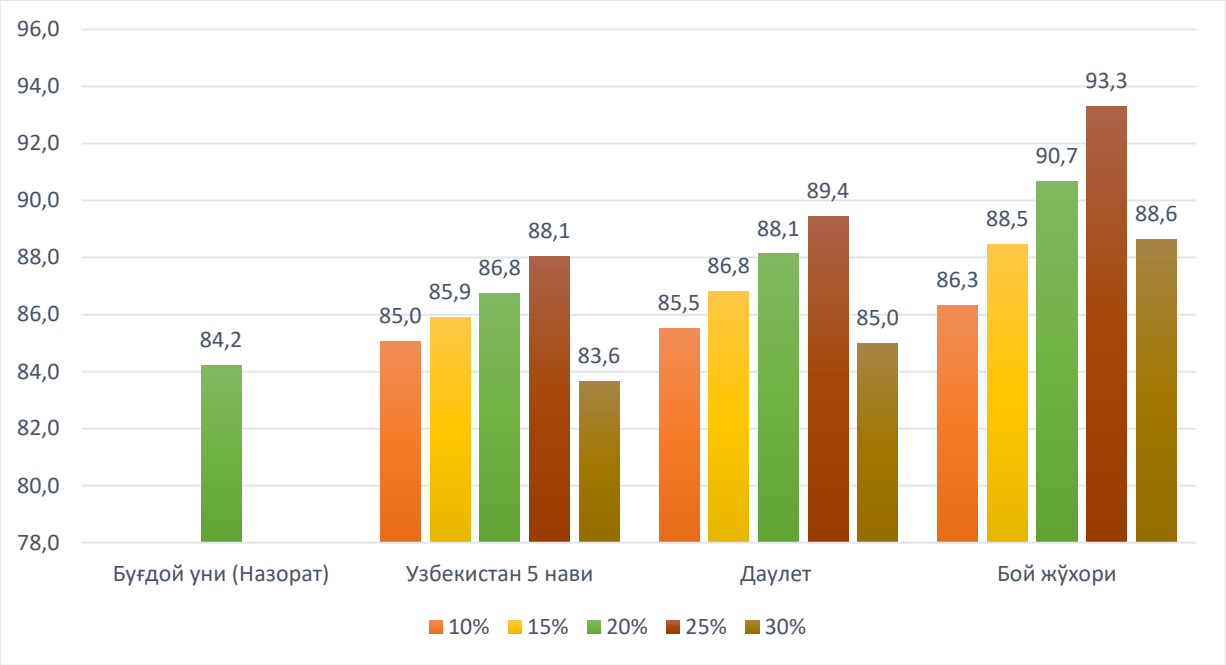

Figure 1. Organoleptic evaluation of bread prepared by adding oat flour to wheat flour in different proportions

The organoleptic value of bread prepared by adding oat flour to wheat flour increased until the ratio increased to 25%. When 30% oat flour was added, the organoleptic evaluation began to decrease again. For example, when 25% was added, the organoleptic value of bread made from the rich corn variety was estimated up to 93.3 points, while when 30% was added, the organoleptic value of the bread dropped sharply to 88.64 points. It follows that when bread is prepared by adding up to 25% of wheat flour to wheat flour, the best quality product is prepared.

In conclusion, it was observed that all parameters improved when wheat flour was added to oat flour to make bread. It was determined that the optimal ratio of the concentration of only cornmeal is 25%.

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