



PROCEDURE FOR CHECKING AND USING PHYSICAL-CHEMICAL QUALITY INDICATORS OF WHEAT GRAIN VARIETIES

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Аннотация: В данной статье физико-химические свойства зерна пшеницы используются для решения основных задач мукомольного производства, непосредственное влияние геометрических размеров зерна пшеницы на количество эндосперма, геометрические размеры зерна в моделирование процесса сепарации, выбор технологических режимов шлифования, полирования и его основное практическое значение в повышении эффективности работы другого оборудования, его обрабатывающего.

Ключевые слова: пшеница, зерно, физико-химические, свойство, сорт, геометрический, размер, количество, технологичность, эффективность.

Annotation

In this state, the physical and chemical properties of wheat grains are used for the solution of the basic task of flour production, the direct influence of the geometrical dimensions of wheat grains on the amount of endosperm, the geometrical dimensions of the grains and the modeling of the process of separation, the selection of technological modes of grinding, polishing, and its basic practical significance. efficiency of work of other equipment, ego processing.

Keywords: pshenitsa, grain, physical-chemical, property, sort, geometric, size, quantity, technology, efficiency.

Introduction

Physico-chemical properties of wheat grain are of great practical importance in solving the main tasks in flour milling. Also, the geometric dimensions of the wheat grain have a direct effect on the amount of endosperm and are important in calculating the yield of flour. The geometric dimensions of the grain are of main practical importance in modeling the separation process, choosing the technological modes of grinding, polishing, and increasing the efficiency of other equipment processing it.

The scheme presented below describes the effect of physico-chemical properties of wheat grain on its technological properties and technological processes. Figure 1





below presents a block diagram of indicators that make up the physical and chemical properties of wheat grain.

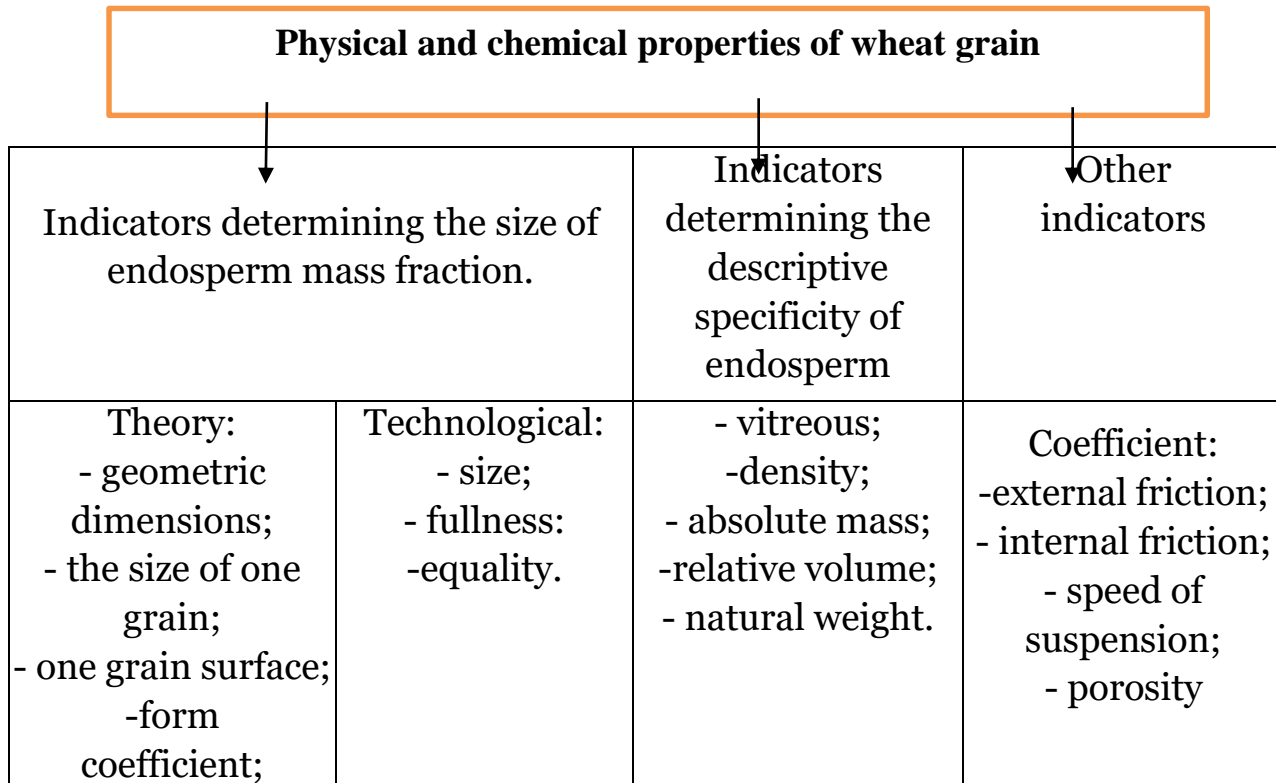


Figure 1. Block diagram of indicators that make up the physical and chemical properties of wheat grain

Based on the above conclusions, the physico-chemical parameters of local wheat varieties "Elita" and "Tram" grown in Fergana region for the research experiment were determined in the production laboratory of "Ferganalon products" JSC in accordance with GOST 13586.3-83.

It is known from the literature that in the process of obtaining high-quality flour products from the milling process, physico-chemical parameters: transparency, mass fraction of endosperm, mass of 1000 grains have an effect. According to the rules of organization and management of technological processes in mills, the mass of 1,000 grains, the technological index compared to the natural weight, is significant. As a rule, with an increase in the weight of 1000 grains, its technological properties are optimized, that is, the grain size increases significantly.

In the rules of organization and management of technological processes in mills, it is assumed that the output of graded flour will increase by 0.05% and the output of bran by 0.05%, due to the decrease of the weight of wheat grain from 775 g/l for each gram.



The vitreousness of wheat grain determines its flour-making properties during milling. First of all, the size of the intermediate product formed during grinding of glassy grains is from 1.15 to 0.16 mm, which increases the yield of fine flour. An increase in the output of intermediate products of these sizes ensures an increase in the output and quality of the finished product.

Therefore, taking into account the importance of the physico-chemical quality indicators of grains in the production of flour from local wheat grains, the yield and quality of the product were studied. For this reason, pamol batches are made according to the physico-chemical quality indicator. The physico-chemical quality indicators of "Elita" and "Tram" varieties grown in Fergana region in the dissertation work are presented in Table 2.

Table 2. Determined physico-chemical properties of wheat grain varieties indicators

No	Wheat variety	transparency %	Natural weight g /l	Moisture %	Mass fraction of endosperm %	1000 grain mass gr	Laughter %	Amount of gluten	Grain volume, V (mm ³) (mm ³)	Grain surface area F (mm ³)
1	Elite	50	757	12,2	89,9	41.2	1,77	25	4,3	59,41
2	Tram	51	754	12,3	87,1	45.0	1,76	25	3,60	61,41

From the results of the experiment given in Table 2, it can be seen that the relationship between the transparency and the weight of the species is not suitable. The insignificant effect of humidity on this disproportion was studied.

The quality indicators of "Transparency", "Mass percentage of endosperm", "Ashness" and "Gluten content" of "Elita" and "Tram" local wheat grains taken for the experiment are observed. These quality indicators directly affect the yield and quality of flour. The impact of the distribution of the load on the surface of the grinding shaft provided for in the dissertation work was studied in relation to the above-mentioned quality indicators. In particular, the dependence of transparency on friction and natural slope angle on humidity is explained as follows:

- When comparing the physical and chemical quality indicators of grains, the differences between two varieties in percentages, their interdependence is clearly demonstrated.



Initially, their transparency is 1% higher than "Tram" variety, Natura weight is 3% higher than "Elite" variety, Moisture and 1000 grain weight is 2% higher than "Elite" variety, Endosperm content is 1% higher and Gluten content 1.2% "Tram" variety was found to be high. The percentage differences of the main physico-chemical quality indicators presented in the table were analyzed in order to study the influence of the natural slope angle change. During the analysis, it was found that the transparency of the grains is 6.1%, and the main factor affecting the change of their natural slope and friction angles depending on humidity is the transparency.

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