

RESEARCH OF WHEAT BREAD STANDARDS

Azimova Sanavar Tuglukovna, Phd doctoral student, Department of Food Safety and Quality, Almaty Technological University, Republic of Kazakhstan, Almaty

Itbalakova Akbota B., Master of Science, Almaty Technological University, Republic of Kazakhstan, Almaty E-mail: akbotasha_1990@mail.ru

Itbalakov Yerlan B., Master of Science, Almaty Technological University, Republic of Kazakhstan, Almaty

Annotation. In this article, grain trade around the world, taking into account its quality, buyers and sellers of grain with purchased batches will consider certain grain standards established in the relevant official documents in order to determine the actual quality of grain during trading

operations. When conducting trade operations, it is necessary to take into account the specifics of existing standards, as well as the main technologically significant quality indicators and methods for determining them both in the seller's countries and in the grain buyer's countries. Grain of different types of wheat is classified according to different characteristics and quality standards, as well as evaluation systems adopted in a particular country.

Keywords: wheat, grain, quality, method

БИДАЙ НАНЫНЫҢ СТАНДАРТТАРЫН ЗЕРТТЕУ

Азимова Санавар Туглуковна, PhD докторанты, Азық-түлік бірлестіктері және жаңа сапаты кафедрасы, Алматы технологиялық университеті, Қазақстан Республикасы, Алматы қ.

Итбалақова Акбота Б., т.ғ. магистри, Алматы технологиялық университеті, Қазақстан Республикасы, Алматы қ., E-mail: akbotasha_1990@mail.ru

Итбалақов Ерлан Б., т.ғ. магистри, Алматы технологиялық университеті, Қазақстан Республикасы, Алматы қ.

Аңдатпа. Бұл мақалада бүкіл әлемде астық саудасы оның сапасын ескере отырып, сауда операциялары кезінде астықтың нақты сапасын анықтау үшін сатып алынған партиялармен астықты сатып алушылар мен сатушылар тиісті ресми құжаттарда белгіленген белгілі бір астық стандарттарын қарастырады. Сауда операцияларын жүргізу кезінде қолданыстағы стандарттардың ерекшелігін, сондай-ақ негізгі технологиялық маңызды сапа көрсеткіштерін және оларды сатушы елдерінде де, астық сатып алушы елдерде де анықтау әдістерін ескеру қажет. Әр түрлі бидайдың астығы әр түрлі сипаттамалары мен сапа стандарттары, сондай - ақ белгілі бір елде қабылданған бағалау жүйелері бойынша жіктеледі.

Кілт сөздер: бидай, астық, сапа, әдіс

БУУДАЙ НАНЫНЫН СТАНДАРТТАРЫН ИЗИЛДӨӨ

Азимова Санавар Туглуковна, PhD докторант, Азық-түлік коопсуздугу жана сапаты кафедрасы, Алматы технологиялық университеті, Қазақстан Республикасы, Алматы

Итбалақова Акбота Б., илимдин магистри, Алматы технологиялық университеті, Қазақстан Республикасы, Алматы Электрондук почта: akbotasha_1990@mail.ru

Итбалақов Эрлан Б., илимдин магистри, Алматы технологиялық университеті, Қазақстан Республикасы, Алматы

Аннотация. Бұл мақалада дан эгиндеринин соодасы, анын сапатын жана анын конкреттүү стандарттарын эске алуу менен, соода операцияларында дан эгиндеринин чыныгы сапатын аныктоо үчүн партиялар менен сатылып алынган дан сатып алуучулар жана сатуучулар тарабынан тиешелүү расмий документтерде белгиленген. Соода операцияларын жүргүзүүдө, эгин саткан өлкөлөрдө дагы, сатып алуучу өлкөлөрдө дагы, колдонулуп жаткан стандарттардын өзгөчөлүктөрүн, ошондой эле сапаттын негизги технологиялык маанилүү көрсөткүчтөрүн жана аларды аныктоонун ыкмаларын эске алуу керек. Буудайдын ар кандай түрлөрү ар кандай мүнөздөмөлөргө жана сапат стандарттарына, ошондой эле ар бир өлкөдө кабыл алынган грейдердик тутумдарга ылайык классификацияланат.

Ачкыч сөздөр: буудай, дан, сапат, ыкма

ИССЛЕДОВАНИЕ СТАНДАРТОВ ПШЕНИЧНОГО ХЛЕБА

Азимова Санавар Тузлуковна, докторант Phd, кафедра безопасности и качества пищевых продуктов, Алматинский технологический университет, Республика Казахстан, г. Алматы

Итбалақова Акбота Б., магистр т.н., Алматинский технологический университет, Республика Казахстан, г. Алматы E-mail: akbotasha_1990@mail.ru

Итбалақов Ерлан Б., магистр т.н., Алматинский технологический университет, Республика Казахстан, г. Алматы

Аннотация. В данной статье рассматриваются торговля зерна с учетом его качества и его определенные стандарты, установленные в соответствующих официальных документах покупателями и продавцами зерна, закупленными партиями для определения фактического качества зерна при торговых операциях. При проведении торговых операций необходимо учитывать специфику действующих стандартов, а также основные технологические важные показатели качества и методы их определения, как в странах-продавцах, так и в странах-покупателях зерна. Различные виды зерна пшеницы классифицируется по различным характеристикам и стандартам качества, а также системам оценки, принятым в той или иной стране.

Ключевые слова: пшеница, зерно, качество, метод

Wheat is the main food of 148 countries worldwide and occupies a special place in the economy of many countries.

As a food product, wheat has many valuable properties. Wheat grain is a very fertile and powerful food, it is not difficult to store it, it is easy to transport it from one place to another, and it can be processed and obtained a wide variety of products.

Wheat products are also widely used in industry. For example, starch, alcohol, oil, and gluten are obtained from wheat grains. Paper cardboard, art objects and other objects are made from wheat straw. In all crop rotation systems, wheat is a sanitary crop.

In agriculture, the classification of wheat differs in its biology. The first sign that The Shape of the ear and stem, the shape and chemical composition of the grain are important is the systematization of varieties may differ. There are no studies on this issue yet. Today, the most common types of wheat in wheat cultivation areas are the following two types.

Wheat soft or plain (*Triticum aestivum*) is the most common type of wheat, also known to all of us as bread. As a rule, this species is characterized by high protein content and high protein content. The endosperm of the grain is hard or soft.

Soft wheat has a soft endosperm, starch grains are good when rinsed. Used for making baguettes, biscuits and cookies [1]

Wheat refers to real bread, rye, barley, oats (millet – like bread, rice, sorghum, corn). It has the largest number of varieties of all cereals. Along with the generally known local varieties, there are many local varieties.

The above corresponds to the division by hardness, which is aimed at the quality of English (soft) and Polish (hard) wheat. The first are kostromka, sandomirka, Girka, kuyavskaya and other boneless, from the guards – samarka, saxonka, belokoloska, krasnokoloska and other autumn, as well as summer varieties. HARD-Summer and sharp: ganovka, beloturka, krasnoturka, kubanka, chernokoloska and others. Therefore, it is necessary to carry out snow removal works in winter. Winter wheat is most often grown in the southern regions. Well – known varieties of winter wheat: “Zhetysu”, “Karlygash”, “Komsomol –1”, “Mironov-808”, “progress”, “glass-24”. Spring wheat takes the first place in terms of acreage, yield, and grain quality. It is mainly grown in the northern, North-Eastern, and central regions of Kazakhstan, where its seeds ripen at a temperature of 12 – 14°C. During the period of rooting and rooting, it needs a lot of water and wants soil fertility. It grows especially well on red-brown, fertile, loamy soils, virgin land. The amount and timing of sowing seeds depends on the weather and soil of each region. The most common varieties of spring

wheat in Kazakhstan include early-maturing varieties “Kazakhstan-15”, “Kazakhstan-19”, “Kazakhstan-25”, “Karabalyk-90”, “lutescens – 32”, “Saratov-29”, etc. [1]

To obtain a rich harvest of spring and winter wheat, it is advisable to sow their seeds after crop rotation in arid regions with low moisture content, or in a pure milkweed (para). When using this method, one year of wheat is sown, the next year-one or perennial grass. In the steppe arid regions of Kazakhstan, the best results are obtained by loosening the soil intended for sowing wheat. When processing with this method, the ground is plowed deep or shallow, taking into account what grass was sown earlier, what weeds grew. In areas with irrigated gray soil in the South, winter wheat is plowed in the sown areas. Stopping snow in winter is effective. The type and amount of fertilizers to be sown in the fields depends on the sown crop and soil fertility. In irrigated areas in the south of Kazakhstan, before sowing winter wheat, nitrogen fertilizers are applied to the soil and treated. 29 varieties of wheat are zoned in Kazakhstan.

This is evidence of the great importance of winter wheat for the national economy, the need to provide its people with high-quality food.

There are 5 classes in terms of food suitability. Sometimes soft wheat is divided into 6 classes (higher), and hard wheat is divided into 5 groups. Only the first 4 classes are suitable for use in food. The wheat class can be determined by the minimum parameters for evaluating the quality of varietal grain. To do this, manufacturers study several indicators.

Wheat classes can be set according to these parameters:

- appearance;
- gluten content;
- smell;
- color;
- "the truth.

There are several standards by which food wheat is evaluated: the quantity and quality of grain value, as well as the protein (protein) content. If at the last sign we consider the possibility of using raw materials for the preparation of products, then the wheat content will be higher by 3-5%.

However, it is important to have gluten in the baker's activity. Below is a table for dividing wheat by classes under this sign.

Table 1. Wheat classes

№	Classes	Description
1	High and 1 variety	This is called strong wheat. The list includes only plants that meet the requirements of the highest class for all the above indicators. The main use is to improve the quality of the lower groups.
2	Third grade	Contains at least 23% glue. Bread is used for baking without improvements, but not better than other classes.
3	Fourth grade	Weak wheat that needs strong improvement.
4	Fifth grade	Forage wheat-used only as animal feed.

The main purpose of winter wheat is to provide people with bread and bakery products. The value of wheat bread is determined by the acceptable chemical composition of the grain. Among cereals, wheat grains are rich in proteins. The content of soft wheat in their grain is on average 13-15%, depending on the variety and growing conditions [1,2]

High-quality bread and bakery products are obtained from flour of strong wheat varieties belonging to the soft wheat type. According to the classification according to the state standard, wheat grain belonging to the first and second classes contains at least 36, 32 and 28% of the value of raw grain of the first group and at least 755 G / L, glass - at least 60%, and the baking strength of flour is 280 or more alveograph (O. A.) units.

Bread made from strong wheat flour is not only a food source, but also a kind of catalyst that improves the digestive process and increases the absorption of other foods.

Strong wheat refers to the improvement of weak wheat. Strong wheat flour (25-30%) weak wheat flour improves its baking properties, thanks to which the bread is baked with high volume, porosity and quality.

In production, a group of valuable wheat belonging to the 3rd class in terms of classification quality is also quite common. their grain contains from 23% to 28% raw grain of the second group, and the strength of flour is less than 280 (to 200). until). Bread of good quality is baked from flour, but it can not improve weak wheat flour [3]

Wheat with a grain content of less than 23% (up to 18%) is of the 4th grade and of poor quality in terms of baking indicators. it should be attributed to weak wheat. Varieties of wheat of the 5th class with a raw grain value of less than 18% are grown for animal feed.

In conclusion, it is important to pay attention to labeling in the production of bakery products. For " Group A ", "Class 1" or " wheat of solid grade", for Italian and other foreign goods — "status", "semolina di grano duro". The cheapest pasta is always soft wheat varieties. Marking: "Group B "(soft flour with high glass)," Group B "(soft wheat)," Class 1 "or" Class 2 " (top and first grade flour).

For example, in the South United States, 5 wheat varieties are used for food. In the lutefisk and Krendel belt of the Midwest of the United States, you can buy food grade alkalis in a grocery store. In other places, it can be ordered for home delivery.

The distinctive features are as follows:

straw-soft thin-walled, hollow for its entire length, thick-walled and filled with a porous mass everywhere or near the earlobe;

colossus-in short and wide soft varieties, the English large-flowered Colossus is thick and wide, the Polish is more like a reed with elongated films, the grain sits tightly and requires a lot of effort during molting;

Osti-in soft varieties, they are practically absent or do not exceed the length of the ear, in hard wheat they can cover the size of the ear by 2-3 times;

grain-in Polish wheat, long, resembling Rye seeds, yellow-amber, in English they are short, medium and low-ribbed, white or red in color, as well as differ in nutritional value for protein analysis.

Among the most important cereals, winter wheat ranks first in Ukraine in terms of acreage and is the main food crop.

All over the world, grain trade is carried out taking into account its quality. As a rule, during trade operations, it is possible to see the purchased batches to determine the exact quality of grain, so buyers and sellers of grain are forced to follow certain quality standards established in the relevant official documents, and these are grain standards. However, when conducting trade operations, it is necessary to take into account the specifics of existing standards, as well as the main technologically significant quality indicators and methods for determining them, both in the countries of the seller and in the countries of the buyer of grain. There is no unified commodity classification of wheat around the world. The exception is some international standards for certain indicators of Wheat Quality and methods of their determination, which are used in some regions of the world. In different countries, commercial wheat grain is classified according to different characteristics with different indicators and quality standards, as well as by its assessment systems adopted in a particular country [3]

Wheat is divided by the standard into types depending on the biological and Botanical characteristics of wheat, and subspecies depending on the color and shape of the glass.

There are six types of wheat:

- 1-soft summer red;
- 2-hard writing;
- 3-soft summer Belozet;
- 4-soft autumn red;

- 5-soft winter Belozer;
- 6-severe autumn.

The most important types are 1 and 4, which have high baking properties, and are also used for making pasta. The basic norms of wheat are established according to the following quality indicators: natural, humidity, weed and grain additives, pest infestations. Limited quality standards for wheat grain are set based on quality indicators for hard and soft wheat, which are prepared and delivered. If wheat grain meets basic quality standards, then this indicates good quality and the possibility of its use for processing. If the prepared grain does not meet at least one of the basic norms, then it is necessary to determine whether the grain meets the restrictive norms. Wheat is divided into classes according to the standard. For example, hard wheat is divided into five classes, and soft wheat is divided into five classes and higher. The separation of wheat depends on the typical composition, color and smell, mass fraction and quality of grain, glass-like shape, nature, and number of sprouted grains. For soft wheat, it also takes into account the "number of falls" that belong to the weed mixture, difficult-to-separate mixtures (oats, Tatar buckwheat).

For hard wheat-wheat grains of other types, including white wheat, rye and barley, which are classified as a grain mixture. Wheat that does not meet one of the requirements of this class is transferred to a lower class. The chemical composition and biochemical properties of wheat flour determine the baking properties of wheat grain. The quality of wheat bread will depend on the amount of protein and the quality of the glue [3,4]

High-quality products are obtained from high-quality grain, and the revenue from it will also be higher. Therefore, the standard occupies an important place in the national economy. Thus, all sectors of the national economy are connected to each other. That is why the quality of grain at the state level is strictly checked. It is checked by the same document standard to all institutions.

The word standard comes from the English word "standard"-norm, measure. The standard is developed using the latest achievements of national economy and science. It is approved by the highest government bodies.

Standard ST RK 1046-2008 " Wheat. Technical specifications " provide for the requirements for the quality of wheat grain, all conditions for its storage and processing, concepts.

St RK 1046-2008 " Wheat. Technical specifications " Tgitisum aestivum L. "I'm sorry," I said. types of wheat grain, general technical requirements, as well as mandatory requirements for the quality of wheat.

Soft wheat has high bakery properties, hard bread has low baking properties and is therefore used to produce pasta. Depending on the strength of the flour, soft wheat is divided into three groups. The first group. From strong soft wheat, flour is obtained, which forms a very good quality dough, which is stored during baking. Bread comes out in large volumes with good porosity. Strong wheat can significantly improve the quality of weak wheat. When making a mixture of strong and weak flour, strong flour is usually 25-35%. Strong soft wheat should be glass-like, the grain should be natural, as well as have a lot of protein and glue, and the quality of the glue should be high. The second group. Medium strength soft wheat. For this purpose, bread has good baking properties, but weak wheat can not be an improver. The third group. Weak soft wheat. This group is characterized by low baking properties of wheat. The quality of bread is poor: small volume, coarse porosity. Bread crumbles strongly. Weak flour can contain very little protein and glue. If the amount of protein and protein is normal, their quality is low. Weak soft wheat can be successfully used in confectionery production for the preparation of cakes and cookies. If a small piece of dough is placed in the water of a water pipe, then after removing the starch and pieces of grain bark from it, it remains like rubber, a heavy mass is glue. There are standard methods for determining the quantity and quality of grain value. (GOST 13586.1-68 "grain. Methods for determining the amount and quality of grain significance in wheat")[3,4].

43 methods include determining the number of raw grain values of wheat, the quality of raw grain values, and the number of dry grain values. Crushed grain in the amount of 25 g is poured into a porcelain bowl (14 ML) with water. Knead the dough in the form of a ball and leave it under the lid for 20 minutes, then wash the glue very carefully, and then intensively. When compressing wax,

the flowing water ends when it becomes transparent. The glue compresses and measures. Thus, it determines the amount of raw protein. An indicator of the quality of gluten is its elasticity properties. To do this, glue weighing 4 g separates the front of the boil, wraps it in a ball and puts it in a bowl of water for 15 minutes to swell. Then analyzes the quality of grain significance in IDK-1m or idk-2. Depending on the performance of the tool, the adhesive belongs to the established quality group. Each class of wheat has its own technological properties. Such grain can be used to produce any finished product: flour, cereals, etc. wheat of all classes, except the fifth class, can be used for food purposes; the fifth-only for non – food purposes. According to the standard, the condition of the grain by humidity can be dry, moderately dry, wet or raw, and by contamination – clean, moderately clean or weed-free. The presence of toxic elements, mycotoxins and pesticides in food or feed grain in the wheat grain standard should not exceed the standards established by medical and biological requirements and sanitary and hygienic documents. Thus, this standard specifies the principles of commodity classification of wheat, as well as its quality indicators. However, as the analysis of flour and baking properties of wheat develops, there is a possibility of a new classification of wheat, which more accurately expresses its technological properties.

Quality and nutritional value of bread, ways to increase it. Nutritional value of bread – this concept characterizes the level of supply of basic food substances and energy, a product given to the physiological needs of a person. The nutritional value of bread is determined by its energy value. Therefore, the chemical composition of bread proteins, fats, carbohydrates, B vitamins, and minerals in bread affect the characteristics of the nutritional value of bread. Organoleptic parameters of bread quality: appearance, taste and smell, composition of breadcrumbs must meet the established requirements. Defects in breadcrumbs include its shortness, stickiness, incorrect rise of bread, the presence of empty voids between them. Taste and smell defects occur for various reasons. The taste of bread made of hard-to-open dough is salt-free. The color ranges from light yellow to Brown. Physical and chemical indicators. When evaluating these indicators, it determines the moisture content of the bread, the acidity, the rise of the bread, the mass fraction of fat and sugar. Humidity. Bread humidity according to the standard: 38-48% in wheat bread, 46-51% in rye bread, 45-50% in Rye and wheat bread. Increased humidity reduces the digestibility, taste and shelf life of bread. Bread made from flour of the highest grade will have a low humidity. Acidity. The acidity of wheat flour should be no more than 2.5-7%, rye flour-12%, rye and wheat bread-7-11%. Sourness affects the taste of bread and bakery products. Safety indicators. Toxic elements, mycotoxins, pesticides, radionuclides must comply with the MTB norm. Bread with foreign mineral impurities, moldy, wrinkled, etc. defects are not allowed for sale[4].

Black bread has its own specificity. The taste is sour, the smell is good. Black bread gives a person who works black a lot of strength. People who are used to this love it even more than wheat bread. From it, red malt is obtained, can be used as a mixture of animal feed and mixed feeds.

Rye is often sown in autumn and grows quickly in early spring. Therefore, it is very suitable for early reaping and use as a lawn mower. Straw is used for feeding livestock, for laying under livestock, for making paper.

One of the most unfavorable properties of rye, lying in a pile in the fall or falling under the rain on the threshing floor, is rapid germination. Therefore, it is also considered that the maturation period after pruning is very short or not. Secondly, if it rains a lot when it does not return, it will lie down, and it will germinate inside the earlobe.

About 50% of the total volume of rye is sown in our country. They are located in the northern and central areas. One of the good qualities of rye is that it grows quickly, so it suffocates weeds without growing them in early spring. Therefore, it is also called a field cleaner[4].

It could be said that the grain of rye is longer than the grain of wheat, and the internal structure is the same. The outer structure is 4.0 - 9.8 mm long, 1.4 - 3.4 mm horizontal, and 1.0 - 3.4 mm thick. Due to the fact that this size is different, it is divided into thin long, thin short, flat long and flat short. This division is important for grain sorting.

The color of rye is often greenish - gray, yellow, brown or purple. These colors will depend on the colors of the bark and aleuron layer and the thickness of the bark. The aleuron layer of the

green grain contains chlorophyll, anthocyanin blue and Scarlet pigments, and the Flakes contain yellow caratinoids. Their colors also vary depending on their thickness. Despite this, the endosperm of the green grain is large and glassy.

The endosperm of rye is 73 - 77, the aleyron layer is 11-12, the fruit is 3.5-3.7, the flakes are 6.9-13.0 percent and vary depending on the grain completeness.

It occupies an average of 12.0% protein in chemical composition. Unlike wheat protein, it dissolves well in water. Although the gluten is not washed, it is present in the dough. Rye contains 56-63% starch. the main production operations are: grinding of wheat and rye, sorting of crushed products by size, sorting of crushed products by strength.

Grinding. One of the most important operations in flour production. They are divided into simple and sorted grinding. In simple grinding, it tries to grind all the products to the desired size. In the favorites, the details of the property are solid. This will allow you to further divide the material parts by size.

In the production of flour milling, simple grinding is used in the production of oboile flour, in which the endosperm is crushed with the same size in the shell. In the production of varietal flour, selective flour milling is carried out, where it tries to grind the endosperm, preserving its shells in a large state. Further sifting to distinguish these components. The resulting fractional product contains less shells. Thus, the technology of production of grade flour is formed.

In grinding, various methods are used: forging, forging and rubbing, cutting, clamping, clamping and moving, etc[5,6].

In the production of oboe flour, you can use any method of grinding, as well as effectively grinding the endosperm and Shell.

For processing varietal flour, it is necessary to preserve its shell as much as possible when grinding the endosperm of the grain. Such methods are grinding by pressing. Then an impressive shaft is obtained by using a machine tool.

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