METHODS FOR DETERMINING GRAIN QUALITY AND PURITY INDICATORS

Sultanova Gulbahor Abdidzhalolovna
Scientific researcher

Abdusattorova Mohlaroyim Mahamatqosim qizi
Student of Tashkent State Agrarian University

Saydullayeva Madina Elyor qizi
Student of Tashkent State Agrarian University

Abstract: In this article discusses about methods for determining grain quality and purity indicators and their types. How do importance of grain quality and purity indicators

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Determination of grain quality is divided into two groups: organoleptic and laboratory methods.

Organoleptic methods include assessing grain quality using the senses. This method measures parameters that cannot be determined by other methods (for example, grain color, odor, taste).

Laboratory methods include the determination of grain quality using instruments. Such qualitative indicators (moisture, contamination, damage to grain by pests, quality and quantity of wet gluten) are expressed quantitatively.

Determination of indicators of purity. The color, aroma and taste of the grain are indicators of its purity. These values may vary, so only one of them can be categorized as defective, and the grain can be returned to the receiving address. This is due to the fact that limiting the required number of indicators has a negative effect on the formation and development of grain at the plant, as well as on harvesting, sales, transportation and storage of grain. Sampling and sampling for color, odor and taste is
based on DAST. I called. Color is the main and mandatory indicator when assessing the quality of grain in all agricultural products. The type, variety and uniformity of the grain are determined depending on the color. The common grain of any plant has a unique color and sometimes luster. Color describes not only the natural properties of the grain, but also its purity, as well as, to a certain extent, technological properties and nutritional benefits. Therefore, color, along with other characteristics, is the basis of grain grades.

Change in grain color (darkening, dark spots, gray or green color, etc.). In many cases, as a result of the activity of microorganisms, insect damage (fleas and turtles) occurs due to improper use of grain processing methods (non-compliance with the drying procedure). Color can change during ripening and as a result of unfavorable weather conditions during harvest. For example, cold grain is white and has a reticulated surface, while hot grain loses its luster and has a wrinkled surface. Grains that sharply change color (rotten, moldy, charcoal) usually refer to foreign or mixed fractions of grains.

The grain color is determined by comparing the respective types of standards or samples. For most plants, color and reflection should be measured in daylight in dark glass, paper or black cloth.

Fresh grains have a unique aroma. A foreign smell indicates a deterioration in the quality of the grain. Extraneous odors in grain can arise for two reasons: as a result of absorption (sorption) from the environment of various substances - vapors and gases; or as a result of decomposition of organic

The smell of warehouses is caused by prolonged poor ventilation of grain and sorption due to anaerobic respiration of intermediate grain products. This smell disappears slightly after airing, but affects the nutritional quality of the grain.

When mold is applied and develops, odors develop in wet grain at temperatures that favor the growth of microorganisms (molds). These odors are greatly reduced when the grain is passed through the grain cleaning machines. But it will not completely
disappear. When used and covered with mold, the smell is strong and is transferred to processed products.

The malt smell arises from the rooting of the grain during storage. In addition, spontaneous heating of the grain produces a malt-like odor. It has been found that grain with a malt smell contains a large amount of amino compounds and slightly oxidizing substances.

The rotten smell is caused by the decomposition of carcasses and debris by pests in the warehouse. Rotten odors also appear in spontaneously heated grains. Grains with malt, mustard and other odors are considered defective and will not be accepted at the collection point.

The smell is healthy and is felt in the crushed grain. To detect odors, approximately 100 g of grain (healthy or crushed) is inhaled into the palm of the pre-mixed medium, and the senses are used to detect the presence of foreign odors on the grain.

To enhance the smell, the grains are poured into a glass, poured with hot water (temperature 60–70 ° C) and covered with a glass. After 2-3 minutes, the water is drained and the smell of heated grain is felt. For the same purpose, the grain can be steamed for 2-3 minutes. The grain is heated on a grate over boiling water, then a clean sheet of paper is sprayed with water and a smell is detected. Heating the grain and evaporation of moisture in it causes the adsorption of odorous substances.

Taste. Healthy grains have a unique flavor similar to that of this crop, and are often sweet or slightly sweet.

A change in the taste of grain is often accompanied by the falling of a lump (baskets) or part of bitter plants and sivers (bitter taste of wormwood) into the nest, germination of grain (sweet taste) and the development of microorganisms (unpleasant putrid taste, sourness, etc.).
The taste is determined by the freshly ground grain. To do this, about 100 g of grain is separated from the average sample, cleaned of impurities, ground in a laboratory mill and chewed 2 g. Rinse your mouth thoroughly before and after each test. Determination of grain taste is carried out when it is not possible to accurately determine the degree of grain purity by other organoleptic parameters.

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