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## THE FACTORS OF PRODUCTION OF HIGH-QUALITY GRAIN PRODUCTS FROM GRAIN

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### ABSTRACT

Knowledge of the laws of events in the grain heap allows you to take the necessary science-based measures to ensure the quantity and quality of grain.

The complexity of organizing the storage of kata batches of grain and grain products is due to their physiological and physicochemical properties. Grain is a living organism in which various life processes take place; the intensity of these processes depends on external environmental conditions. If the external environment has a positive effect on the metabolism of grain cells, it will inevitably lead to a decrease in quantity, deteriorating the quality of grain.

### KEYWORDS

Grain storage, physical, chemical and biological factors, grain and grain products, consumers, rodents, flour and cereals, mechanical destruction, seed properties.

## INTRODUCTION

Many difficulties in the storage of grain products are because they have all the "consumers" other than humans, ie microorganisms and pests.

As a result, the quality of the product decreases as a result of exposure to microorganisms and pests. If grain storage is not organized as required, rodents (rats, mice) and birds will destroy and contaminate the grain [1-3].

In addition, special cases during storage of flour and cereals change their consumer properties. Finally, the quantity and quality of all grain products can change due to their physical properties. The process of grain storage is the final stage in the production of grain and includes the characteristics of the grain and the object of grain storage, as well as physical, chemical and biological factors that affect the condition of the grain. Knowledge of the laws of events in the grain heap allows you to take the necessary science-based measures to ensure the quantity and quality of grain [4-7].

## THE MAIN PART

The complexity of organizing the storage of large batches of grain and grain products is due to their physiological and physicochemical properties. Grain is a living organism in which various life processes take place; the intensity of these processes depends on

external environmental conditions. If the external environment has a positive effect on the metabolism of grain cells, it will inevitably lead to a decrease in quantity, deteriorating the quality of grain. Many difficulties in the storage of grain products are due to the fact that they have all the "consumers" other than humans, ie microorganisms and pests [7-10].

As a result, the quality of the product decreases as a result of exposure to microorganisms and pests. If grain storage is not organized as required, rodents (rats, mice) and birds will destroy and contaminate the grain. In addition, special cases during storage of flour and cereals change their consumer properties. Finally, the quantity and quality of all grain products can change due to their physical properties. Thus, it is necessary to protect the stored products from nature and possible destruction, their biotic environmental factors, as well as to create conditions that resist the rapid metabolism in grain cells. This problem can be solved only by preparing the product for storage and creating certain storage conditions.

All this can be done by preparing storage facilities equipped with the necessary tools and equipment, taking into account the properties of grain products.

The following issues are put forward on the storage of grain products in the interests of the national economy and consumers.

1. Storage of grain products without destruction or with minimal loss of mass.
2. Storage of grain products without deterioration.
3. Improving the quality of grain products in storage.
4. Reduction of labour costs in the storage of grain products.

During storage, some quantitative and qualitative losses are inevitable, while others are the result of improper storage. Inevitable mechanical destruction is grain dust, which does not take into account the fact that it removes grain and grain products from one place occurs when moving to a second location. Loss of dry matter during grain respiration during storage is the only biological order of destruction.

A properly organized storage process allows prevents the loss of mass due to the scattering of grain products, consumption by birds, rodents and pests, spontaneous heating and the development of microorganisms.

Damage due to deterioration of product quality can cause significant damage. Loss of freshness of grain during storage (change in colour, smell and taste) leads to deterioration of the quality of cereals, flour and bread, and sometimes makes them unfit for consumption.

Another reason for the decline in the quality of grain products is their excessive long-term storage. Any product has certain long-term durability, even when

stored in optimal conditions. The purchasing power of a product that is intended to be stored for a certain period of time and then becomes obsolete will be lost. Many batches of flour and cereals lose their quality in the second or third year of storage. In two or four years, there will be a decrease in seed properties. Cereals and legumes intended for the production of food and compound feeds are more durable in the long run. However, over time (after 7-15 years) they usually experience a decrease in technological and food-grade properties. And so, obsolescence leads to the inevitability of the need for the timely sale of stored grain products and seeds until the periodic exchange and significant deterioration of quality. Preservation of quality without deterioration is a prerequisite.

Various technological measures are used to improve the quality of grain products during storage, ie to ensure good storage and durability.

It is known that in many cases it is possible to improve the quality of flour by creating a certain storage mode. However, in agriculture, as well as in grain receiving and processing enterprises, the processing of grain for seed, food and compound feed is of great importance. Systematic improvement of product quality is one of the important requirements of a market economy.

Without well-organized and timely cleaning, it is impossible to ensure reliable storage of grain varieties and even their effective use in the national economy.

To clean the grain from impurities requires a large fleet of machines and mechanisms with different productivity, attached to the technological path.

Grain dryers of different models and productivity are used in grain receiving enterprises for drying grain mass during storage. Due to the fact that the harvest season in our country coincides with the hot and dry season, the moisture content of the grain is about 8-9%. Therefore, in most cases, there is no need to use a dryer.

Ventilation of grain and grain products is necessary to create a favourable temperature regime for storage. This is done using a system of transport mechanisms and grain cleaning machines or special active ventilation equipment. Chilled air can be used as a cooling agent, either naturally or using refrigeration equipment.

## CONCLUSION

In order to achieve quality storage of grain in a timely manner, it is necessary to protect it from insects, canals, as well as rodents and birds belonging to the group of pests. This measure is done through the use of various chemicals.

Ensuring the timely and quality implementation of the above measures will ensure the next stage, namely grain processing and obtaining quality products from it.

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