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ANALYSIS OF MECHANICAL COMPOSITION OF DIFFERENT VARIETIES OF GRAPES GROWN IN FERGANA AND ANDIZHAN REGIONS IN THE PROCESS OF STORAGE

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ABSTRACT:

In this article, today one of the most important fruits for our country,not only in the domestic market but also in the export direction, the results of determining the mechanical composition of different varieties of grapes at the beginning and after 4 months of storage, change over time and comparison with each other in the process of harvesting grapes grown in Fergana and Andijan regions of the Republic, their collection from vineyards and storage in modern refrigerated warehouses are showed.

KEYWORDS: Grape varieties, mechanical composition, hardness, equipment, storage, shelf life, processes, quality indicators.

INTRODUCTION:

In recent years, great attention has been paid to the storage, processing and delivery of high quality agricultural products, especially fruits and vegetables. Growing and quality storage of fruits and vegetables will allow the country to increase not only the domestic market but also its export potential. If we look at the export of agricultural products today, the role of fruit and vegetable growing and viticulture is significant.

In order to increase the share of the above indicators and the development of viticulture, the President of the Republic of Uzbekistan Sh.M.Mirziyoev has adopted a number of resolutions and decrees in this area. In particular, the Resolution of the President of the Republic of Uzbekistan dated March 14, 2019 No PP-4239 "On measures to develop agricultural cooperation in the field of fruit and vegetables". According to these decrees and resolutions, the Council of Farmers, Dehkan Farms and Landowners has identified measures to introduce new mechanisms for the development of clusters and cooperation in the cultivation, processing and export of fruits, vegetables and grapes [1,2,5].

METHODS AND MATERIALS OF THE RESEARCH:

That is why today it is important for us to deliver fruits, vegetables and grapes grown by farmers, ranchers and households to consumers without destroying them.

However, according to experts, today there is a significant waste of agricultural products grown in the country without reaching consumers. If we analyze these data in the structure of the sectors, it is noted that fruits, vegetables and grapes are wasted 30-35% of the grown crop [2, 3, 5, 8].

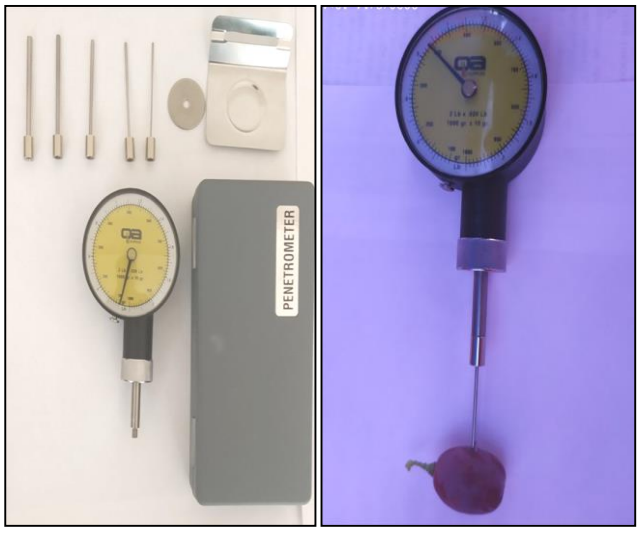
This, in turn, imposes great responsibilities on specialists in the field.

Our scientific research is aimed at studying the technology of storage of grape varieties in modern refrigerated warehouses,

which are rapidly developing in the country today and have a very high export potential.

Research work was carried out in Oltiarik and Bulakbashi districts of Fergana and Andijan regions of the Republic, specializing in viticulture. It is known that one of the main ways to deliver grape food varieties to consumers is to supply freshly picked grapes. One of the main disadvantages of freshly cut delivery is explained by the impossibility of long storage of wet fruits. Therefore, delivering them to consumers by storing them for a certain period of time not only allows them to maintain their quality, but also to generate additional revenue.

Our people have a long history of storing freshly cut grapes, but these technologies are mainly focused on temporary storage, i.e., storage of land full, cool rooms and roofs of houses. However, today the lack of these technologies has become noticeable due to the high area of vineyards and high yields, increasing consumer demand for high quality products. Today, world experts emphasize the urgency of developing modern refrigerated storage facilities and increasing production capacity in the field of addressing these shortcomings.



A-grape hardness measuring device B-grape hardness measurement Figure 1. Processes for determining the mechanical composition of grape varieties using instruments

RESULTS AND DISCUSSIONS

Based on the above. The objects of research were selected equipment for studying the mechanical composition of various food varieties, modern refrigerated warehouses and grape varieties with high preservation of grapes.

The experiments were carried out in vineyards and modern refrigerated warehouses where grape varieties are grown. In addition, the research was carried out in two stages, initially the grapes were harvested by hand according to the specified requirements and placed in refrigerated warehouses.

In the second stage, the data were compared with the mechanical composition, which was re-checked after release from the refrigerated warehouses after a certain period of time.

During the study, the quality indicator required for the grape storage process was analyzed by studying the mechanical composition (Table 1).

According to the analysis of the results of scientific research on the mechanical composition of grapes in the process of storage of food varieties in Fergana and Andijan regions, the following were identified.

Table 1. The results of the analysis of the mechanical composition of different varieties of grapes grown in Fergana and Andijan regions in the process of storage

Region	Grape varieties	Mechanical composition of grapes	
		Hardness of grape seed (gr/mm²)	
		To storage	After storage
Fergana	Khusaini	233	205
	Pobeda (мерс)	303,3	301
	Kelin barmoq	253.3	218
Andijan	Ketmonsop	253	210
	Nimrang	323	312
	Andijon qora	270	254
	Rizamat ota	300	270

Note. Scientific research experiments Date of storage of grapes in Fergana region - 10.09.2019, date of refrigeration - 03.12.2019, date of storage of grapes in Andijan region - 12.09.19, date of refrigeration - 05.12.2019.

As can be seen from the table above, such varieties of grape as, Khusaini, Pobeda (mers), Kelinbarmak, Ketmonsop, Nimrang, Andijan qora, Rizamat ota, were selected and their skin hardness was determined using a penetrometer, before and after storage in warehouses; The hardness of the skin of Khusaini variety in Altiyarik district is 233 g / mm^2 before storage, the condition after storage is 205 g / mm^2, the hardness of the skin of Pobeda (Mers) is 303.3 g / mm^2 before storage and the condition after storage is 301 g / mm^2. The hardness of the variety before storage was 253.3 gr / mm^2, the condition after storage was 218 gr / mm^2, which shows that the hardness of the variety before storage was relatively low, and the hardness of the skin of Pobeda (Mers) among the selected varieties as a result of our research.

Varieties such as Ketmonsop, Nimrang, Andijan Kara, Rizamat ota were selected from Dolanali Bagbon farm in Bulakbashi district of Andijan region and their skin hardness was determined using a penetrometer.

Ketmonsop variety has a hardness of 253 g / mm^2 before storage and 210 g / mm^2 after storage.

Andijan qora variety skin hardness pre-storage condition 270 gr / mm^2 post-storage condition 254gr / mm^2

Peel hardness of Rizamat ota variety Pre-storage condition 300 gr / mm^2 Post-storage condition 270gr / mm^2

The hardness of the skin of the Nimrang variety is 323 g / mm2 before storage and 312 g / mm2 after storage. As can be seen, the hardness was found to be relatively low before storage, and we found that the skin hardness of the Nimrang variety in the selected varieties was suitable for long-term storage.

In addition, post-process analysis of samples from both regional sections to modern refrigerated storage facilities revealed changes in the mechanical composition of all types of all grape varieties.

CONCLUSION:

Khusaini, Mers, Damskiy varieties of grapes were selected in Oltiariq district of Fergana region, Ketmonsop, Nimrang, Andijan black and Rizamat oto varieties were selected in Bulakbashi district of Andijan region and their mechanical composition was studied before and after storage processes in the warehouses. Studies have shown that during the storage of grape varieties for a certain period of time, the hardness of the grape grain softens, the initial weight decreases significantly, and the weight of the grape grain decreases significantly.

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