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## THE EFFECT OF PRELIMINARY PROCESSING ON THE PRESERVATION PROPERTIES OF GRAPES ON IT IN STORAGE

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### ABSTRACT

*In this article, interesting information about the stages of effective organization of the processing process after the harvest, which is widely used in world practice, is presented. In particular, the stages of the formation of the "cold chain" system, which is widely used in the storage and delivery of agricultural products to consumers, are covered.*

**KEYWORDS:** *Harvesting, First Processing, Storage, Warehouse, Packaging, Cooling, First Cooling, "Cold Chain" System.*

### INTRODUCTION

At present, the number of the world's population increases year by year. This is one of the most important factors that increase the importance of food supply and safety. One of the sectors that serve to solve this issue is the storage of products. In Uzbekistan, too, this sphere developed significantly in the last years. Although the export potential of quality products to foreign countries is sufficient, it is taking full advantage of the opportunities.

In this regard, the use of modern and promising practices in their activities by representatives of this sphere is an important requirement of the present time. Joriy the introduction of widely used experiences in the world in the organization of work in the premises is one of the most correct solutions to the issue. One of these experiments is the rooting of the "cold chain" system in storage.

**Styles and materials.** In many developed countries of refrigeration plants, xonhanes perform the function of cooling the product and sending it to the export in the Cold state, that is, the starting point of the cold chain system. This system can be used in almost all products. We shed light on this system on the example of grape storage.

**Results of the study.** In order to fully understand the essence of the export of grapes on the cold chain system, it is necessary to have a complete idea of the following stages:

**Stage I.** Organize the harvest time correctly and on time. In this case, special attention is paid to the fact that the product is harvested in the cool part of the day. Harvest harvesting time is best to be carried out from 6-00 to 9-00 in the morning. At this time the day is sufficiently light, at the same time it will be cool. As a result, cooling becomes tasteless and effective due to the low grape temperature. The product is sorted by the time of laying on the dishes (the diseased, damaged and damaged ones are removed). The product is packed in a series of containers, it is not allowed to fall overlapping. Because, superimposed product can deliver mechanical shale to one. Mechanically damaged products are considered unsuitable for storage.

**Stage II.** The process of conveying the grapes harvested in the field to the cooling chamber for packaging. Collected grapes are delivered to the refrigerator in special trucks. The load-bearing part of a special truck should be closed, at the same time be able to provide good ventilation. The loaded product will need to be delivered to the cooling unit within a short period of time. For this reason, it is desirable that the cooling reservoirs are built in places close to the field areas.

**Stage III.** Sorting process. This process begins with the acceptance of grapes, the quality and the placement on the imported territory and continues until the packaging. Grapes from the field are fully browsed. Damaged and size are cut off parts that are not in demand. Then the cut off part is sent to drying or processing. And the qualifying part is sent to the packaging stage.

**Stage IV.** Packaging process. Peeled grapes are packed in containers of different sizes according to the customer's demand. In this regard, it should be noted that now grapes are packed mainly in plastic containers of 500 g, and then shipped for export is the most observed in the world practice.

Peeled grapes are placed in jars and glued to them with labels. Then put in special boxes (crates), the boxes are laid out on wooden diapers.

As already mentioned above, in order to increase the storage capacity of the product, the use of special sulfur papers is widely introduced. For its part, it also exports large quantities of these plates to Uzbekistan and currently leaves good impressions among those operating in the cold storage system of our country.

**Stage V.** Initial cooling. Boxes with grape packaging are placed on wooden diapers. As a rule, 120 boxes are placed on each wooden base. The average capacity of the boxes is 5,5 kg. Boxes

with wooden floors are sent to the cooling chamber. In these chambers, the product temperature is lowered to  $0+4^{\circ}\text{C}$  for 6 hours.



**Picture1. The process of preliminary cooling the product in boxes with wooden floors**

**Stage VI.** Cold storage jaryoni. After the initial cooling, the product is transferred to cold chambers and stored until it is sent to the specified address.



**Picture2. Cold storage camera of the product from the initial cooling**

**Stage VII.** Shipment of the product to the address in cold condition. The purpose of carrying out this process is to ensure that the grapes are completely cooled, and then placed in special cooling containers. the biochemical processes in this land grape composition are maximally slowed down. It is transported at low temperature and delivered to the buyer in good quality condition. In a word, the so-called "cold chain" of logistics is formed.

as a result, the product is stored until the temperature set in the refrigerator compartment reaches the desired temperature. The original essence of the term "cold chain" is also an expression from this.

**Summary, suggestions and recommendations.** At the end of 2020, 21.1 million tons (11.1 percent more than last year) of which 11.3 million tons (11.3 percent more than the phase) of vegetables, 2.1 million tons (10,4 percent more) of melons, 3,0 million tons (9,7 percent more) of potatoes, 3,0 million tons (10,8 percent more) of fruits and 1,7 million tons (9,9 percent more) of grape products grown.<sup>1</sup>.

In order to keep these products in good quality, all stages in the process are required to be carried out correctly, qualitatively and efficiently. From this point of view, the following conclusions can be drawn:

- It is necessary to improve the process of post – harvest processing of agricultural products;
- Packaging of agricultural products should be supported as the most important factor in the process.
- In the process of preparing agricultural products for storage, they are obliged to control the correct implementation of each action;

## CONCLUSION

As a result of the research carried out, the following specific conclusions were drawn:

1. Late-maturing varieties of grapes are stored more often than others;
2. The low air temperature during the grape ripening process directly affects its preservation. The most optimal period of time is from 6-00 to 8-30 in the morning.
3. Before storing the harvested crop is strictly sorted and the packaging of the seed. This is a contributing factor to its conservation.
4. Before storing the product, its initial cooling guarantees that the process will be of good quality.

It is without a doubt that the formation of the "cold chain" system, taking into account the fact that the Prevention of wastage of fruits and vegetables grown in our country abroad has a very high effective export potential, will certainly give its positive effect.

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**INTERNET SITES:**

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2. [www.GlobalGAP.com](http://www.GlobalGAP.com).