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ANALYSIS OF THE CONDITIONS FOR THE LOADING HEIGHT OF WATERMELONS AND MELONS INTO WAGONS

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The globalization of the world economy and the processes associated with this phenomenon have significantly influenced the overall structure of the world markets for rail transportation and freight forwarding, including those requiring special delivery and storage conditions.

To reduce losses during loading and unloading operations at warehouses, it is recommended to maximize the possibility of packing perishable goods. Table 10 shows the recommended types of placement for perishable goods.

Table 1
Placement of perishable goods in wagons

Cargo	Stacking method	Stacking height, m
Box pallets with melons	1st and 2nd methods	No less than 2 stacks
Melon crates	1st and 2nd methods	1.8 -2.0
Watermelons	The floor and walls are covered with a 10 cm layer of dry straw	1.3
Pumpkins	The same	1.6

An important condition for ensuring the safe transportation of perishable goods is the correct choice of isothermal rolling stock (rolling stock having regulated temperature). The loading weight of melons and gourds is 0.200 t/m³.

The best storage conditions for watermelons are considered a stable temperature of 2-3° and relative humidity of 60-80%. Experiments on the winter storage of watermelons, carried out by Vitvitskiy E.E [1] with 13 varieties of watermelons, showed that of the Volgavarieties, Popovka and Astrakhan striped are the most suitable for storage, preserved after 1.5 months by 94%, and after 3 months by 64%.

As can be seen, late varieties, characterized by slow saccharification, belong to well-stored varieties. According to the data obtained by Gorev, A. E [2], one of the reasons,

contributing to the long-term storage of fruits is the high content of pectin, which in dissolved form is able to retain large amounts of water and thus maintain the fruit turgidity.

The best of the currently zoned varieties for storage are Volga varieties Melitopol 143, Bykovsky 23, Central Asian varieties Khait-kara, Kuzybay, Zimny 344, late Transcaucasian varieties, etc. Watermelons can be stored in disinfected dry vegetable stores and in warm sheds on racks, in barns, in the attics rooms protected from cold, etc. in no more than three layers, separated by soft bedding of straw or chaff. At room temperature, watermelons can be stored for a short period of two weeks. At the same time, there is an increased consumption of sugars for respiration and the fruits soon become tasteless. Before transportation or storage, the fruits of watermelons are subjected to "effusion", for which their heaps in the field are covered with tops of root vegetables or straw for a day or more. Due to the resulting slight dehydration of the rind, they had better stand transportation and storage. Exposure to direct sunlight on picked fruits contributes to their rapid over-ripening [3].

Before laying for storage, the fruits are inspected; they should not be slightly frozen. In the storage room, watermelons are placed on soft, dried bedding on the shelves or in the same boxes in which they were transported. Watermelons should not be stored in the same room as vegetables or potatoes. The storehouses must be separate, dry and well ventilated, similar to storehouses for fruit. It is advisable to pollinate the stored fruits with 2% lime. The storehouse should be equipped with ordinary and minimum thermometers and a hygrometer.

It is necessary to analyze the change in the content of various types of sugars separately. The analysis is conducted on 20 fruits at the same time, without mixing them, by comparing the analysis data for each fruit. Fruits intended for analysis should be typical; up to 200-250 fruits should be selected and set aside at the time of laying and the same number should be taken to control weight changes. The last batch of watermelons is not analyzed, but only weighed at the time of the analysis, each fruit separately.

If the fruits were picked unripe, then in the first days of storage, the sugar content in them may slightly increase, but in general, during storage, a gradual decrease in the sugar content of watermelons is observed as a result of the consumption of sugars for respiration. According to the data obtained by Z. I. Koreishi [4], the amount of fructose and sucrose decreases, the amount of glucose remains unchanged for almost the entire period of storage [5, 6].

Thus, the criterion for evaluating the elements of the applied technology for growing watermelon is economic efficiency, when the income from the additionally obtained products exceeds the additional costs. An assessment of the economic indices of the use of various types of fertilizers reflects the positive effect of these elements of technology on the increase in yield, with the highest index in the Hakaphos option (treatment of plants), 41.4-69.6% more compared to other studied types and methods of using fertilizers.

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