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Determination of Dry Matter Content of Eggplant Raw Materials

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Abstract: in the experiments in this article, the amount of dry matter in the raw materials of varieties and hybrids of eggplant, 4.9% in the variety of Aurora, 4.7% in the variety Surkhan Gozali, 5.2% in Anet F1, 5% in the hybrid Zamin G'1 .0%, 5.1% of Pantera G'1 hybrid and 4.8% of Barcelona G'1 hybrid were found in our experiments.

Keywords: eggplant, sun, raw material heat, temperature, wind, building speed, water evaporation, dried product, humidity.

Introduction. The mode of storage, drying and processing of food products is the basis for improving product quality, reducing losses and waste, and reducing the cost of finished products. It is known that it is not possible to sell all food products, including vegetables, at the same time. Therefore, today much attention is paid to their complex processing and drying. This not only protects the products from spoilage, but also allows obtaining new nutritional and tasty products [3].

One of the important areas of our research is the production of environmentally friendly, high-quality dried products that meet standard requirements [6, 7, 8]. Depending on the processing method, such products are divided into dried (chips and powders) and canned (in hermetically sealed containers). One of the methods of processing the eggplant harvest is simple sun drying. Drying in the sun ensures the production of ecologically clean dried products with the maximum use of natural factors - sun, wind, relative humidity of the air. Sunlight drying enables the production of ready-to-eat products for use as food for a short or long time, depending on the type of product [9].

Scientific research method. During field experiments, phenological observations, biometric measurements were carried out. Monitoring and calculation were carried out in accordance with generally accepted requirements. Experiments were carried out in 4 repetitions. The net weight of dried vegetables, the shape and size of particles, grinding volume, defects in appearance, the ratio of components, organoleptic indicators and methods for determining drying were determined according to the international standard Gost 13340.1-77.

The research was carried out in 2023-2024 at the experimental field for drying fruits and vegetables of the Information Advisory Center of Tashkent State Agrarian University.

The purpose of the study. It consists in determining the amount of dry matter in raw eggplant.

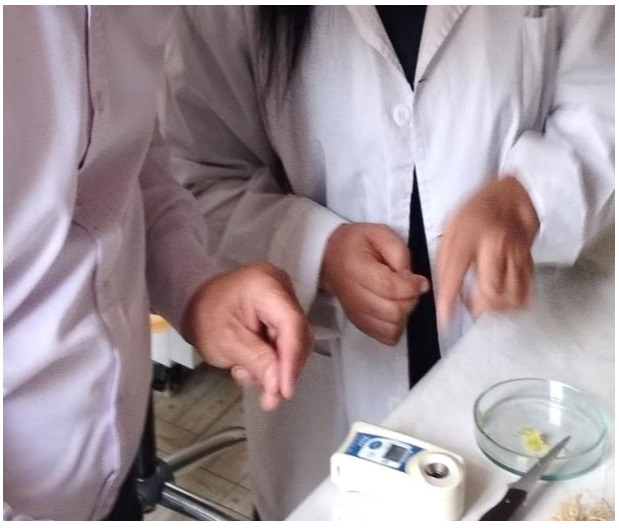
Research object. Zamin G1 hybrid, Pantera G1 hybrid, Barcelona G1 hybrid were selected as eggplant.

Research result. During our experiments, the amount of dry matter in raw materials of eggplant varieties and hybrids was analyzed. This experiment was carried out in laboratory conditions using a refractometer device. In this experiment, it was found that the amount of dry matter in the raw materials of eggplant varieties and hybrids was different.

It is known from scientific sources that the results of the analysis obtained from the samples can be more accurate due to the partial cessation of the movement of free water in the raw materials after the freshly harvested eggplant raw materials have been in a rest period for 24-26 hours. . Samples of varieties and hybrids of eggplant studied in our experiments were selected. The obtained samples were crushed in a kitchen tool (grinding machine) and the liquid extracted from the raw materials was collected in a sterilized petri dish.

The liquid obtained from the samples was thoroughly mixed in a petri dish, and then a drop of liquid was placed on the glass working part of the refractometer. Before placing the liquid in the refractometer, it is necessary to press the enter key to lower the symbol showing the result to 0 degrees. After that, liquid is poured in such a way that it completely covers the glass part of the refractometer. After the liquid completely covers the top of the glass, the size of the amount of dry matter in the raw material is displayed on the electronic indicator.

In the course of the conducted research, there were no significant differences in the amount of protective substances in the raw materials of the varieties and hybrids of the studied eggplant. the initial numbers obtained in the experiment are systematized according to variation series. Systematization - dividing each number obtained from the experiment into groups, and the group of numbers depends on the size of the total numbers obtained for the account book and observation in the experiment (Pic.1).



In Pic. 1, samples of eggplant varieties and hybrids are taken from raw materials

The process of analyzing the content of dry matter.

In the experiment, the number of observations was divided into 6 groups of 20-40. In order to save time and not to search for numbers in the entire selection, the sign belonging to each group was written down by groups at once, that is, using certain methods.

One of the important requirements is to identify errors made during scientific research and experimental results. Therefore, in several experiments, great attention was paid to the reliability of the experiment and the accuracy of the results. Levels of experimental error were checked according to methodological requirements. Various errors encountered in the experiment were divided into several types according to their characteristics. As we know from scientific sources, systematic and random errors are mainly observed in conducting experiments.

Regular errors, such as those caused by technical errors in instruments and measurement errors due to the inaccuracy of the scientific method, mean that the data differ from the true value by some constant standard for all types of experiments observed. Therefore, when focusing on the accuracy of the results and ensuring their accuracy, it is possible to reduce the error by introducing separate corrections, calculated coefficients, etc.

In addition, there are random errors in the determination of the results of the experiments, which are observed to reduce or increase the data obtained from the results of the experiment as a result of the measurement of the same form. Therefore, in order to minimize the error rate in our experiments, sufficient samples were taken and examined in order to determine the amount of dry matter in the raw materials. It was observed during our experiments that the amount of dry matter in the raw materials of different varieties and hybrids of eggplant was different.

In these experiments, the amount of dry matter in the raw materials of eggplant varieties and hybrids was 4.9% in the Aurora variety, 4.7% in the Surkhan Gozali variety, 5.2% in Anet F1, and 5.0% in the Zamin G'1 hybrid. , Pantera G'1 hybrid had 5.1 and Barcelona G'1 hybrid had 4.8% of dry matter.

Conclusion. In determining the amount of dry matter in eggplant raw materials, sufficient samples were taken and examined. It was observed during our experiments that the amount of dry matter in the raw materials of different varieties and hybrids of eggplant was different.

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