ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 09,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

UDC: **635.646:631.563.2**

DETERMINATION OF THE AMOUNT OF DRY MATTER IN THE RAW SWEET POTATO (SWEET POTATO)

Nortojiyev Bobosher Sheraliyevich
Associate Professor, Tashkent State Agrarian University
Usmonova Bumayram Mirsodiqovna (PhD)
Independent Researcher, Tashkent State Agrarian University

maryamusvanova939@gmail.com

Abstract: In this article, the experiments found that dry substances contained in the raw materials of the Batat (shirirn potato)ing variety and hybrids are migratory indicators, 4.9% in the Toyloki variety of batat (sweet potato), Spartak 4.7%, 5.2% in the yaponsky fioletovy variety, 5.0% in the Sochakinur variety, and 4.8% in the burgundy 5.1 treasure variety.Annotation: in this article, the experiments found that dry substances contained in the raw materials of the Batat (shirirn potato)ing variety and hybrids are migratory indicators, 4.9% in the Toyloki variety of batat (sweet potato), Spartak 4.7%, 5.2% in the yaponsky fioletovy variety, 5.0% in the Sochakinur variety, and 4.8% in the burgundy 5.1 treasure variety.
Keywords; batat (sweet potato), offtob, raw materials heat, harorat, wind, build speed, water evaporation, dried products, moisture,

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

One of the important areas of our research is the production of environmentally friendly, high-quality, dried products that meet the standard requirements [6, 7, 8]. Depending on the processing method, such products are divided into dried (chips and powders) and canned (hermetically sealed containers). One of the methods of processing the Batat crop is drying in the sun in a simple wayOne of the important areas of our research is the production of environmentally friendly, high-quality, dried products that meet the standard requirements [6, 7, 8]. Depending on the processing method, such products are divided into dried (chips and powders) and canned (hermetically sealed containers). One of the methods of processing the Batat crop is drying in the sun in a simple way. Drying in the sun provides for the production of environmentally friendly dried products using the maximum of natural factors - the relative humidity of the sun, wind, Air. Drying in sunlight allows the production of finished products for use as food for a long or short period of time, varying depending on the type of product [9].

The method of scientific research. When conducting field experiments, phenological observations, biometric measurements, and observations were carried out in the research. The observation and calculation work was carried out in accordance with generally accepted requirements. The experiments were carried out on 4 reversals.scientific research. When conducting field experiments, phenological observations, biometric measurements, and observations were carried out in the research. The observation and calculation work was carried

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 09,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

out in accordance with generally accepted requirements. The experiments were carried out on 4 reversals. the net weight of dried vegetables, the shape and size of the particles, the size of the grinding, defects in appearance, the ratio of components, organoleptic parameters and methods for determining drying are determined according to the interstate standard GOST 13340.1-77.

The study was conducted in 2024-2025 at the experimental site of the information and consulting center of the Tashkent State Agrarian University, designed for drying fruits and vegetables.

The purpose of the study is to determine the amount of dry matter in the raw sweet potato (sweet potato).

Sweet potato varieties were selected as the object of the studyToylok, Spartacus, Japanese purple, Ochakinur, Burgundy, Treasurer.

Research result during our experiments, the dry matter content in the raw materials of sweet potato varieties and hybrids was analyzed. In the laboratory, this experiment was carried out using a refractometer device. In this experiment, it was also found that the dry matter content in the raw materials of sweet potato varieties and hybridsit varied.

Experiments have shown that freshly harvested raw sweet potato (sweet potato) after a period of rest for 24-26 hours can give a more accurate analysis result obtained from samples, which can lead to a partial cessation of the movement of free water in the raw material. In our experiments, specimens of the studied varieties and hybrids of sweet potato (sweet potato)ing were isolated.Experiments have shown that freshly harvested raw sweet potatoes after a period of rest for 24-26 hours can give a more accurate analysis result obtained from samples, which can lead to a partial cessation of the movement of free water in the raw material. In our experiments, specimens of the studied varieties and hybrids of sweet potato (sweet potato)ing were isolated. The obtained samples were crushed in a kitchen tool (grater) and collected in a sterilized Petri dish with liquid extracted from the raw material.

The liquid 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, press Enter and decrease the mark indicating the result to 0 degrees. The liquid is then pumped into the mirror part of the refractometer until it is completely closed.The liquid 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, press Enter and decrease the mark indicating the result to 0 degrees. The liquid is then pumped into the mirror part of the refractometer until it is completely closed. After the liquid completely covers the mirror surface, a measure of the amount of dry matter in the raw material is displayed in the part of the electronic indicator.

In the course of the conducted studies, there was no significant discrepancy in the quantitative indicators of dry matter in the raw materials of the studied varieties of sweet potato (sweet potato)ing. The first numbers obtained in the experiment are systematized according to the variation series. Systematization is the grouping of each number obtained from an experiment into groups of numbers, depending on the magnitude of the total numbers obtained in the experiment for the ledger and observation (Fig.1).

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 09,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

Figure 1. Sampling of sweet potato varieties as raw material and analysis of their dry matter content

In the experiment, the number of observations ranged from 20 to 40 and was divided into 6 groups. To avoid missing the attribute values belonging to each group throughout the entire sample and to save time, the recorded values were immediately written according to the groups, i.e., this was done using specific methods.

Identifying errors made during the scientific research and in the experimental results is considered one of the essential requirements. Therefore, in several experiments, great attention was paid to ensuring the reliability of the experiment and the accuracy of the obtained results. The levels of experimental errors were verified according to methodological requirements. Various types of errors encountered in the experiment were classified into several categories based on their characteristics. According to scientific sources, systematic and random errors are primarily observed during experiments.

Systematic errors, for example, occur when measuring instruments make technical mistakes or when the scientific research method used is not sufficiently accurate, causing the data obtained to deviate from the true value by a nearly constant amount for all types of experiments. Therefore, when focusing on the accuracy of results and ensuring their precision, it is possible to reduce errors by introducing specific corrections, calculating coefficients, and applying similar methods.

In addition, random errors are also present in determining experimental results. These occur during measurements of the same type and may lead to either underestimation or overestimation of the experimental data. Therefore, to minimize the error coefficient in our experiments, sufficient samples were taken and examined according to the method to determine

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 09,2025
Journal: https://www.academicpublishers.org/journals/index.php/ijai

the dry matter content in the raw materials. During the experiments, it was observed that the dry matter content in the raw materials of different varieties and hybrids of sweet potato varied.

In these experiments, the dry matter content indicators in the raw materials of sweet potato (Ipomoea batatas) varieties and hybrids were recorded as follows: Toyloqi – 4.9%, Spartak – 4.7%, Japanese Purple – 5.2%, Sochakinoor – 5.0%, Burgundy – 5.1%, and Khazina – 4.8%.

Conclusion

In determining the dry matter content of sweet potato (Ipomoea batatas) raw materials, sufficient samples were collected and tested according to the method. It was observed during the experiments that the dry matter content indicators varied among the raw materials of different varieties and hybrids of sweet potato.

REFERENCES:

1. Гордеев А.В. Решение проблем продоволственной безопасности. Мир агробизнеса. 2008;(1):4-6.
2. Иванова В.М. Рост селскохозяйственного производства, как фактор развития пишевой промишленности и продоволственного ринка. Пишевая промишленност. 2016;(2):8-11.
3. Мачулкина В.А. Безотходная технология переработки овошебахчевой продуксии. Картофел и овоши. 2017;(7):22-23.
4. Гераскина Н.В. Селекция баклажана для юга России. Картофел и овоши. 2016;(7):33-34.
5. Кигашпаева О.П., Авдеев А.Й. Новие сорта баклажана для консервированиЙ. Картофел и овоши. 2016;(7):35-36.
6. Медико-биологические требования и санитарние норми продоволственного сиря и пишевих продуктов. М.: Издателство стандартов, 1990. С.94-100. 7. Гигиенические требования безопасности и пишевой сенности пишевих продуктов М., 2002.
7. Ахмедов Ш.К., Нортожийев Б.Ш., “ТАБИИЙ ШАРОИТДА МАХСУС ҚУРИТИШ УСКУНАСИДА БАТАТ (ШИРИРН КАРТОШКА) ҚУРИТИШ” Та'лимда замонавий трансфарматсияси| 11-то'плам 1-сон| тадқиқотлар.уз 2024 йил. Б.28-31