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**DETECTION OF RESIDUAL MOISTURE IN SWEET POTATO (SWEET POTATO)
PRODUCTS DRIED IN NATURAL CONDITIONS ON SPECIAL DRYING
EQUIPMENT**

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Annotation: In this article, batat (sweet potato) has shown a positive result in drying by separating raw materials from its peel when drying in the oven and drying equipment. The quality of the product color has retained naturalness when dried batat (sweet potato) products are compared to finished products dried on drying equipment according to various indicators. In our experiments, the rate of construction of dried raw materials and the residual water content in the finished product, separated from the shell of raw materials, was 15.61% when dried in an offtob, and 12.59% when dried in a drying equipment.

Keywords; batat (sweet potato), offtob, raw materials heat, harorat, wind, build speed, water evaporation, dried products, moisture,

Introduction it is known from scientific sources that not only in the world, but also on the territory of our republic, sweet potatoes (sweet potatoes) are grown on vast areas from vegetable crops. The role of Dehkan farms in fully satisfying the demand of the country's population for high-quality food and ensuring the year-round production of various vegetables in fresh, dried and processed form is invaluable. Today in the republic, young scientists working in the field of agriculture have created and are widely used in the production of many new varieties of vegetable crops, including sweet potato, which has unique biological properties and requires both a separate cultivation technology and processing.

The regime of food storage, drying and processing is the basis for improving product quality, reducing losses and waste, and reducing the cost of finished products. As you know, it is not possible to sell all food products at the same time, including vegetables. 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 fresh nutrients and taste [3].

One of the important areas of our research is the production of environmentally friendly, high-quality dried products that meet the requirements of the standards [6, 7, 8]. Depending on the processing method, such products are divided into dried (chips and powder) and canned (in hermetically sealed containers). One of the ways to process the eggplant crop is to dry it in the sun in a simple way. Our research focuses on the production of environmentally friendly, high-quality dried products that meet the requirements of the standards [6, 7, 8]. Depending on the processing method, such products are divided into dried (chips and powder) and canned (in hermetically sealed containers). One of the ways to process the eggplant crop is to dry it in the sun in a simple way. Sun drying ensures the production of environmentally friendly dried products with maximum use of natural factors such as the sun, wind, and relative humidity. Drying in the sun allows you to produce a finished product for use in food for a long or short period of time, 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 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 2023-2024 at the experimental site of the information and consulting center of the Tashkent State Agrarian University, designed for drying fruits and vegetables.

The aim of the study is to obtain a high-quality dried product by drying sweet potatoes (sweet potatoes) under normal conditions in the sun and on drying equipment.

A sweet potato (sweet potato) hybrid was chosen as the object of the studySpartacus, Japanese purple NVA and Tuilak.

In the course of research, sweet potato (sweet potato)they were dried by various methods in natural conditions in the open ground and on special drying devices. As we know, during the drying process, most of the water contained in the raw materials evaporates. On the other hand, the product in stable condition (fresh) lost weight 7-10 times after drying.De research sweet potato (sweet potato)they were dried by various methods in natural conditions in the open ground and on special drying devices. As we know, during the drying process, most of the water contained in the raw materials evaporates. On the other hand, the product in stable condition (fresh) lost weight 7-10 times after drying. In the course of our research, we first took samples of raw sweet potatoes (sweet potatoes) in a stable (fresh) state and determined the total water content in them in the laboratory. For the sample, the weight of the sliced raw materials was 3.24 grams. The samples cut from the raw materials were dried in a foil meter at a temperature of +135 ° C for 32 minutes. In our experiments, it was found that a total of 88.87% of the water evaporated from the dried product.The total weight of the sliced raw materials was 3.24 grams. The samples cut from the raw materials were dried in a foil meter at a temperature of +135 ° C for 32 minutes. In our experiments, it was found that a total of 88.87% of the water evaporated from the dried product. From this we can say that technically ripe sweet potatoes (sweet potatoes) in the Turgur (fresh) state contain 88.87% water.

It was found that, depending on the degree of maturation of sweet potatoes in the Turgur (fresh) state, the water content in them ranges from 84.68% to 92.58% (Fig.1).

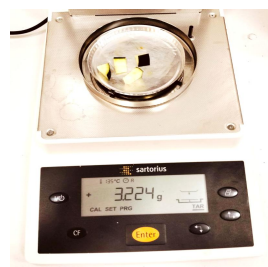


Figure 1. Determining the moisture content of fresh sweet potato using the Vlagamer device

In our research, sweet potatoes (*Ipomoea batatas*) were cut into various sizes and dried both under sunlight and in a drying apparatus for 44–46 hours. Primarily, the raw material was divided into four parts: whole tubers without peeling and peeled tubers. They were tied on a string at 5–6 cm intervals and placed under the sun. Using the same method and dimensions, raw materials were prepared for the special drying equipment. The prepared pieces, in quantities of 6–8 kg, were spread evenly on the dryer’s special tray and placed inside the drying apparatus.

When placing the raw material outdoors for sun drying, it was determined that the daytime air temperature was +26–28 °C, while at night it ranged from +18–20 °C. During our experiments, at 14:00 the air temperature inside the drying apparatus reached 42–44 °C, while in the second half of the day the temperature inside the apparatus was 20–22 °C (Figure 2).

Figure 2. Drying process of sweet potato (*Ipomoea batatas*) raw material by hanging under



the sun and spreading in the drying apparatus

In our research, the residual moisture content of sweet potato dried under these two different conditions was analyzed. It was observed that the residual moisture levels varied depending on the drying conditions (Table 1).

Table 1

Residual moisture content indicators of sweet potato (*Ipomoea batatas*) products dried under different conditions (2023–2024).

Drying conditions	Raw material condition (cutting raw material into pieces to prepare it for drying)	The amount of water contained in the raw material stagnate (sveji) state, %	Raw material drying time, hours	Residual water content in dried ready-made products, %
In the sun	not separated from the shell	84,87	42-44	17,76

	separated from the shell			15,61
In drying equipment	not separated from the shell	84,87	42-44	13,86
	separated from the shell			12,59

The experiments carried out showed that the drying conditions in the drying of baxlajanig effect and the effect on the finished product output and the level of residual sic content in the product were found when cutting and drying them in different sizes.he experiments carried out showed that the drying conditions in the drying of baxlajanig effect and the effect on the finished product output and the level of residual sic content in the product were found when cutting and drying them in different sizes. In this case, the average amount of water residue in the finished dried products of the oftob dried batat (sweet potato)was found to be 15.61%, while the residual water content in the tayoyr dried product, in which 17.76% of the Peel was separated from the raw material shell.

This process was observed during our experiments, when the residual water content in the dried finished dried products was determined in the drying equipment, when the average water residue content in the finished dried products was 13.86% when the raw material was not separated from the Shell, and the residual water content in the finished finished dried products was 12.59%.

Conclusion: Batat (sweet potato) has shown a positive result in drying by separating raw materials from its peel when drying in the oven and drying equipment. The quality of the product color has retained naturalness when dried batat (sweet potato) products are compared to finished products dried on drying equipment according to various indicators.

List of literature used:

1. Gordeyev A.V. Resheniye problem prodovolstvennoy bezopasnosti. Mir agrobiznesa. 2008;(1):4-6.
2. Ivanova V.M. Rost selskoxozyaystvennogo proizvodstva, kak faktor razvitiya pishevoy promishlennosti i prodovolstvennogo rinka. Pishhevaya promishlennost. 2016;(2):8-11.
3. Machulkina V.A. Bezotxodnaya texnologiya pererabotki ovoshebaxchevoy produkcii. Kartofel i ovoshi. 2017;(7):22-23.
4. Geraskina N.V. Seleksiya baklajana dlya yuga Rossii. Kartofel i ovoshi. 2016;(7):33-34.
5. Kigashpayeva O.P., Avdeyev A.Y. Noviye sorta baklajana dlya konservirovaniY. Kartofel i ovoshi. 2016;(7):35-36.
6. Mediko-biologicheskkiye trebovaniya i sanitarniye normi prodovolstvennogo sirya i pishevix produktov. M.: Izdatelstvo standartov, 1990. S.94-100. 7. Gigiyenicheskiye trebovaniya bezopasnosti i pishevoy sennosti pishevix produktov M., 2002.