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WAYS TO IMPROVE PRODUCTION TECHNOLOGY PUMPKIN PUREE

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Abstract: This article presents information on methods of localization and improvement of the process of production of agricultural products, namely pumpkin puree. At the same time the method of process acceleration by changing the structure of pumpkin crushing device is given.

Keywords: Pumpkin, pumpkin puree, pumpkin crushing device, methods of improving the technology of pumpkin puree production.

1.Introduction

As a result of measures taken in recent years in our country on the practical implementation of the Decree of the President of the Republic of Uzbekistan "On measures to accelerate the development of the food industry of the republic and full provision of the population with quality food products", the export of agricultural products in 2023 increased by 4.1 percent. Exports in this sector amounted to almost 2 billion dollars, but the current potential is much higher [1].

not fully comply with international standards and safety requirements, as well as the fact that relations between producers and exporters of food products are not properly established, hinder the increase of the country's export potential and the opening of new markets.

In 9 months of 2023, food industry enterprises of Uzbekistan produced products worth 5.7 trillion soums, and in comparison with the same period of the last year, a growth of 8.6% was recorded. The share of the food industry in the gross industrial product amounted to 13.2%, which necessitates the need to improve technologies for cultivation of crops of agricultural products (melons, watermelons and pumpkin), their processing and development of export products.

Pumpkin is an annual herbaceous plant belonging to the pumpkin family, with coarse hairy stems reaching 4-6 m in length, with ribbed, drooping or recumbent stems. In pumpkin, leaves are large, heart-shaped or deeply five-lobed, coarsely pubescent, with long stripes, varying in shape, color and pubescence depending on the species and variety. They are arranged consecutively on stems and branches with a long band. Most cultivars have male and hermaphrodite flowers, and some cultivars have both male and female flowers.

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Pumpkin is the most cultivated product in Uzbekistan, it is a product adapted to climatic conditions and is fertile. Due to the fact that pumpkin contains most of the vitamins included in the daily diet of children and adults, there is a high demand for this product, but the processing of pumpkin in the conditions of Uzbekistan is not established. Therefore, a number of scientific studies have been conducted.

Table №1.

Nutritional value of raw pumpkins

(The nutritional value is obtained using the example of 100 grams of raw pumpkin) [2].

№	Organic substances	Nutritional value, grams	%
1	Carbohydrates	6,50 grams	5
2	Protein	1,0 grams	2
3	Oil	0,1 grams	0,5
4	Cholesterol	0	0
5	Fiber	0,5 grams	2
6	Vitamins	milligram	%
7	Folic acid	16 microgram	4

Odessa scientists J.V. Olivichva, S.G. Fainborg carried out a number of scientific works on improvement of machines and equipment of food industry, one of which is adding fruits and vegetables to the crushing device. The purpose of the invention is to increase the productivity of the machine. A cylindrical converter is concentrically mounted on a shaft in a friction machine inside a sieve drum. A blade is mounted on the second one and fixed on the supporting side. The sieve drum is interlocked between the two. The excess waste is discharged through an outlet [3].

Russian scientists have made a number of changes in the technology of pumpkin puree processing. The process of vegetable puree preparation has gained international scope due to patents granted in the USA and now in China, New Zealand and Australia. Puree is used in many ready-to-eat products such as ice cream, baby food, soups and frozen meals. The nutritious sweet potato puree was originally licensed and packaged, and now the unique process is being used to make purees for pumpkin, nutmeg pumpkin, carrots and spinach [4].

he amount of toxic elements, nitrates and pesticides contained in pumpkin should not exceed the permissible level specified in the sanitary quality standards and requirements of the Ministry of Health for food raw materials and food products.

According to scientists, the nutritional and medicinal value of pumpkin is determined by a complex amount of biological and pharmacological information about its chemical composition. They are diverse in chemical structure and have a healing effect on the human body [5].

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For all its biological properties, zucchini is considered a fruiting vegetable belonging to the pumpkin family. It has a juicy flesh and many seeds inside. Pumpkin contains 6-25 dry matter, 14% sugar, 20% starch, 7-30 mg depending on the variety of pumpkin, contains vitamin C 0.4-0.8 mineral salts. It is very rich in carotene (6 to 17 mg %), which is the reason for its yellow color. Unlike other melons and vegetable crops, pumpkin contains up to 0.7 - 0.08 mg of vitamin D, which is especially valuable for children's bodies.

Fiber and pectin substances of pumpkin contribute to good digestion and eliminate harmful substances from the body. For this reason, zucchini products are recommended for therapeutic and preventive purposes.

Pumpkin crops are planted and grown in regions of the globe with tropical, subtropical and temperate climates. Countries producing gourds are China, Turkey, India, USA, Iran, Egypt, Spain. This is confirmed by the remains of gourd found during archaeological excavations (VII-VIII centuries BC). Since soil and climatic conditions of Uzbekistan are favorable for growing these crops, they have been cultivated since time immemorial.

II. Method of the research.

When improving the technology of pumpkin puree production, improving the equipment for grinding and increasing the efficiency of work requires the following tasks:

- search for ways to improve and increase the efficiency of pumpkin puree production technology and devices used in it;

- creation of modern new types of some devices for pumpkin puree production;

- conducting research aimed at improving the technology of pumpkin puree production;

- analyzing the results of experiments, drawing conclusions and making recommendations.

III. Results of the research.

Technological scheme of pumpkin puree production is carried out in the following sequence:

The pumpkin product enters the 1st hopper, is washed in the 2nd washing device and passes through the 3rd control conveyor. In the next process, the pumpkin is crushed in the 4th crushing device. Food production is a very complex process. Their preparation is affected by mechanical, hydro-mechanical forces, heat and chemicals. As a result of their influence, especially under the influence of high temperature, the composition of food raw materials and products decomposes and enters into a mutual chemical reaction. In addition, in the course of technological processing takes place and a number of other processes observed by the naked eye and perceived by the senses.

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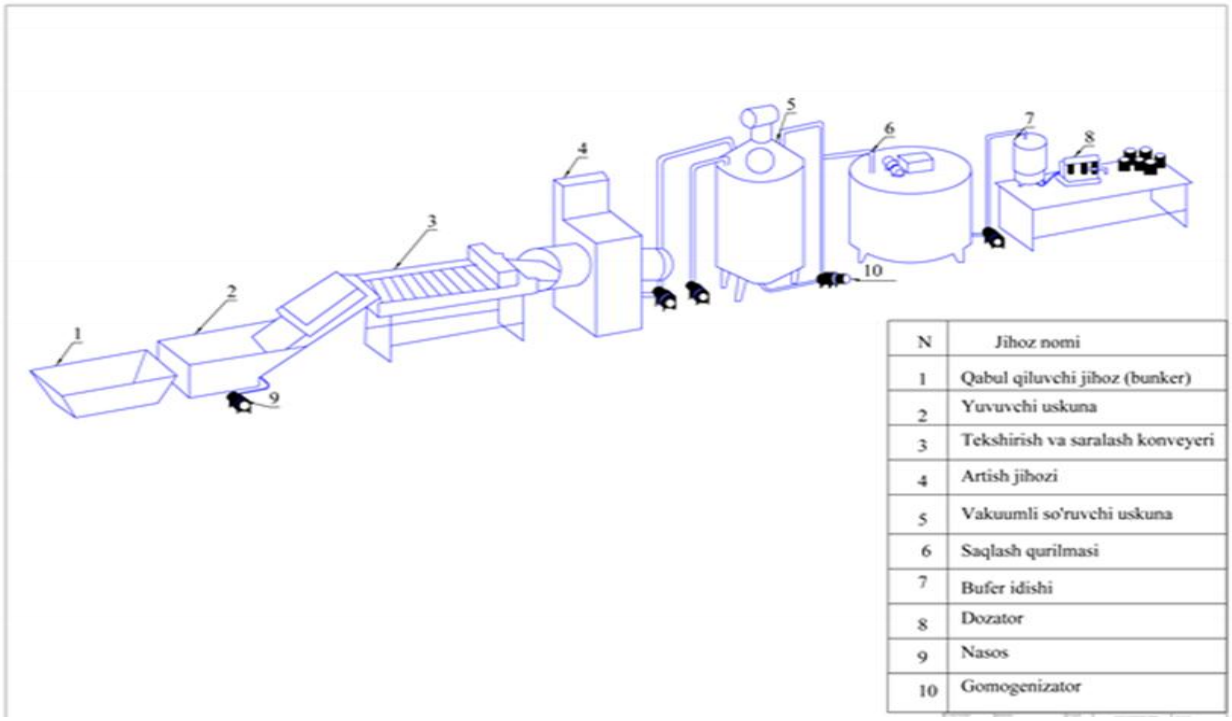

N	Jihoz nomi
1	Qabul qiluvchi jihoz (bunker)
2	Yuvuvchi uskuna
3	Tekshirish va saralash konveyeri
4	Artish jihozi
5	Vakuumli so'ruvchi uskuna
6	Saqlash qurilmasi
7	Bufer idishi
8	Dozator
9	Nasos
10	Gomogenizator

Figure 1. Technological scheme of pumpkin puree production.

IV. Conclusion: Knowledge of the nature of changes that occur as a result of processing of food raw materials and products, the study of their negative and positive aspects, is of great importance for the production of quality food and other food products.

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