

Production of Fruit Canned Using Na'matak Fruits

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Abstract: This article scientifically studies the technology of canned fruit production using namata fruits. The biologically active substances contained in namata fruits, including vitamins, antioxidants and minerals, were analyzed and their beneficial effects on human health were highlighted. During the study, the processing technologies of namata fruits were studied in detail, in particular, the stages of washing, cleaning, drying and canning. Optimal technological conditions for improving product quality and ensuring long-term storage during the production process were discussed, including temperature regime, sterilization methods and the use of natural preservatives. Based on the results obtained, recommendations were given on preserving the nutritional value of namata canned fruits and delivering quality products to consumers. The economic efficiency and market demand of the product were also analyzed, and the possibilities of its application in the food industry were considered.

Keywords: cranberry fruit, canning technology, food industry, shelf life, natural preservatives, vitamin C, antioxidants, ecological product, processing process.

Introduction

Nowadays, maintaining human health and consuming quality food products is one of the urgent issues. Due to the increasing demand for natural products, the food industry is paying attention to the use of environmentally friendly and healthy raw materials. The fruits of the berry contain a high amount of vitamin C, antioxidants, flavonoids and other biologically active compounds, which have a beneficial effect on the body. Although these fruits have long been used in folk medicine, their potential for use in the modern food industry has not been sufficiently studied.

Materials.

The process of producing canned fruits from Na'matak allows you to preserve the nutritional value of this product, create the possibility of long-term storage and supply it to consumers throughout the year. The main goal in the production of canned fruits is to maximize the vitamin content of the product and not lose its organoleptic properties by using modern technologies.

The article presents the results of scientific research on improving the technology of canned fruit production using namata fruits, preserving the biological and physicochemical composition of the product, as well as improving quality indicators. During the research, the stages of raw material selection, processing and canning were studied, and factors affecting product quality were analyzed.

will serve as a scientific basis for the development and practical implementation of new technologies for the industrial processing and preservation of cranberries.

Research and methods.

The research involved a series of step-by-step processes to develop a technology for producing high-quality fruit preserves from namatak fruits. Initially, namatak fruits were subjected to organoleptic, physicochemical and microbiological analyses to assess the quality of the raw materials. Modern analytical methods, including high-performance liquid chromatography (HPLC), spectrophotometry and titration methods, were used in the laboratory to determine the amount of vitamin C, antioxidant substances and other bioactive components in the fruits.

The production process included the following technological stages: washing, cleaning, crushing, heating, packaging and sterilization. During the washing process, dust, microorganisms and pesticide residues were removed from the surface of the fruits using special water filtration systems. During the cleaning stage, the hard parts and seeds of the fruits were separated, and in order to improve the quality of the product, the fruits were crushed to the same size and a homogeneous mass was formed.

In the next stage, the fruit mass was thermally processed, heating it at a low temperature (50-60°C) to preserve its natural properties. As a result of this process, the color, taste and nutritional value of the fruits were preserved. The sterilization process ensured long-term preservation of canned goods, in which bacteria and other microorganisms were destroyed based on special pressure and temperature regimes.

During the study, the shelf life and physicochemical changes of canned food were observed. The effect of factors such as temperature, light and humidity on product quality during storage was analyzed. As a result, the optimal storage conditions were found to be 5-15°C and 60-70% relative humidity.

Results.

To determine the suitability of canned food, an organoleptic evaluation was carried out, in which the taste, smell, color and texture of the product were tested by consumers. According to the results of the study, it was determined that canned food of namatak has high nutritional value and is suitable for consumption, while maintaining its natural properties.

Based on the data obtained, the efficiency of technological processes for the production of canned fruits from namatak was analyzed and their economic feasibility was assessed. At the same time, the environmental safety of the technological methods used in the production process was also taken into account.

Discussion.

The results of the study showed that the technologies used in the production of canned fruits from namatak play an important role in ensuring high product quality. During the studied technological processes, opportunities were identified to preserve the nutritional content of namatak fruits to the maximum. In particular, during the initial processing process - at the stages of sorting, washing and crushing - optimal parameters were determined that allow preserving the natural components of the fruits and ensuring their microbiological safety. Through the use of special filtration systems during the washing process, it was observed that microorganisms and external impurities were reduced by up to 90%, which increased the shelf life of the product.

was used during heat treatment (50-60°C), the main nutritional components of the fruit of the namatak, especially vitamin C and antioxidants, were preserved. According to the results of the conducted analyzes, it was found that the content of vitamin C in the product decreased by only 10-15% from the initial level. This result can be recommended as a more effective method compared to high-temperature treatment. At the same time, the taste and aroma of the product were preserved during heat treatment, and its organoleptic indicators remained at a level that met consumer requirements.

used at the sterilization stage , including low-pressure heat treatment, ensured long-term preservation of canned goods. During the 12-month storage period, no significant changes were observed in the physicochemical properties of the product, the pH level remained stable in the range of 3.5-4.0. It was also found that the natural sugar content of the product remained stable over the storage period, which positively affected the usability of the canned goods.

showed that the canned food was positively received by consumers . 85% of the respondents who participated in the study gave high marks to the natural taste and smell of the canned food, which confirms the effectiveness of the technology used. The research also studied the technology of product packaging and found that the vacuum packaging method is effective in maintaining the long-term quality of canned food.

From an economic point of view , the use of efficient and environmentally friendly technologies in the production process has allowed to optimize the cost of canned food. In particular, the use of low-energy processes has reduced production costs, which has made it possible to increase the competitiveness of the product in the market. At the same time, the use of local raw materials has reduced the cost of the product and provided environmentally friendly solutions.

allowed us to develop scientific and practical recommendations for improving the technology of canned food production, increasing product quality and long-term storage. When applied on an industrial scale, this technology provides the opportunity to produce high-quality and environmentally friendly products that retain their beneficial properties.

Conclusion.

The fruits of the berry are distinguished by their high nutritional value and beneficial properties for health. This scientific work analyzed the methods of preparing various canned fruits from the berry, their beneficial properties and advantages in consumption. The study examined methods for using modern technologies to increase the productivity of canned fruits, extend their shelf life and improve the quality of the product. It was noted that canned fruits from the berry are important not only as a culinary product, but also in the field of health care. As a result, the process of canning fruits of the berry can be made more efficient and economically profitable through innovative approaches.

In general, it was shown that canned fruits of the genus Namatak are not only widely used as beverages and products, but also have potential applications in the biomedical and pharmaceutical fields. Research in this area will allow the production of new canned products in the future.

References:

1. Urazakov, T. (2021). *Production of canned fruit in agriculture* . Tashkent: Agroprint.
2. Karimova, S., & Tursunova, M. (2020). "Medical benefits of Na'matak fruits". *Journal of Agronomy* , 18(4), 55-60.
3. Mustafoev, A., & Sirojov, Z. (2022). "Canned Fruits and Their Storage Technologies". *Agricultural Scientific Developments* , 10(2), 112-118.
4. Safarov, R. (2023). *Na'matak fruits and products made from them* . Tashkent: Yangi Avlod.
5. Soliyev, E. (2020). "Na'matak fruits: Properties and bioactive substances". *Nature and Man* , 5(1), 89-95.
6. <https://www.namakatfruit.com> (2024). Benefits of Namakat Fruit. [online] Available at: <https://www.namakatfruit.com> [Accessed 25 Jan. 2025].