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«IMPROVING THE TECHNOLOGY OF PRODUCTION OF  
FUNCTIONAL NUTRITION JUICES»

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## GROWING, STORAGE, PROCESSING OF AGRICULTURAL PRODUCTS AND FOOD TECHNOLOGIES

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### IMPROVING THE TECHNOLOGY OF PRODUCTION OF FUNCTIONAL NUTRITION JUICES

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**Abstract:**

**Objective.** The chemical composition and useful substances of carrot and lemon juices for human life have been studied. The technology of blended juice production is investigated.

**Methods.** Today, large-scale work is underway to further expand the technology for the production of functional edible juice from these fruits, such products are very useful for the human body.

**Results.** Carrots after delivery, acceptance, storage, inspection, washing, cleaning and cutting were blanched with steam and pressed. The yield of carrot juice was 55%, respectively. Lemon fruits were also pressed after inspection, washing, cutting and crushing. To obtain a blend, the juices were mixed in the following ratios: 3:0,5; 2:0,5; 1:0,5 (carrot – lemon).

**Conclusion.** The resulting blended juice does not cause any side effects and its production can be introduced for the treatment of sick people.

**Keywords:** carrot, lemon, vitamin, carbohydrates, proteins, minerals, technology, disease.

**Introduction.** In the global food industry, scientific research is being conducted on the processing of raw materials rich in carbohydrates, proteins, minerals, vitamins, organic acids, polyphenols and the production of high-quality beverages from them. Special attention is paid to the measures carried out in this direction for the rational use of natural raw materials and products at industrial enterprises, increasing the production of new types of products, reducing the cost of finished products, increasing food, biological and energy values and providing the younger generation with high quality and safe natural products. Significant results have been achieved in improving the technical and economic indicators of the country's

food industry through the production and storage of fruit and vegetable products, plant raw materials, safe for health, import-substituting new types of food products in the required quantity and assortment. The Strategy of Actions for the Further Development of the Republic of Uzbekistan sets the tasks of "raising industry to a qualitatively new level, deep processing of local raw materials, accelerating the production of finished products, mastering new types of products and technologies. In this regard, evaluating the quantity and efficiency of the use of raw materials, updating existing recipes and technologies, introducing them into production, obtaining high-quality products, preserving the natural properties of products, improving the quality of finished products and

expanding the range of food products using important traditional raw materials. It should be noted that fruits and vegetables, as well as their processed products (especially natural juices) contain a large amount of carbohydrates, protein substances, organic acids, vitamins, minerals, etc. Due to this, they have both nutritional and dietary (therapeutic) value [1-3]. Therefore, they are used for the prevention and treatment of various diseases of the gastrointestinal tract, liver, kidneys, cardiovascular diseases, atherosclerosis and other metabolic disorders.

Carrot is a vegetable crop, belongs to the umbrella family. Unpretentious in cultivation, it grows in different climatic zones. It is divided into a feed and a dining room. In cooking, a dining room is used, which has about 60 types. On sale you can find not only orange, but also yellow, pink, white, purple, green, even black carrots. It contains 87% water, carotene, which is converted into vitamin A in the human body, phytoncides — suppress the action of microbes. Carrots contain vitamin C, iron, thiamine, calcium, magnesium, phosphorus, sulfur, glucose, fructose, interchangeable and essential amino acids, polyunsaturated fatty acids, proteins – 1.4 g (g / 100 g), carbohydrates - 7 g (g/100 g). Lemon is a hybrid of citrus and bitter orange. The birthplace of lemon is unknown, but scientists tend to believe that this plant appeared in India or China. For centuries in Asia, lemons have been used as an antiseptic and an antidote for various poisoning. Lemons contain carbohydrates, proteins and some fats (essential oils). In the pulp of lemons there is a large amount of organic acids: citric, malic, ascorbic, also proteins - 0.9 g per 100 g, fats - 0.1 g per 100 g, carbohydrates - 3 g per 100 g. The main value of lemons is a high content of vitamin C and a complex of vitamins of group B. From micro- and macroelements in lemons, contain calcium, iron, magnesium, phosphorus, potassium and zinc. It is proved that special

environmentally friendly raw materials should be used to produce functional food products. In the production of baby food products, the problem of providing environmentally friendly and high-quality raw materials is urgent. The real danger for consumers is the contamination of products with heavy metals from emissions from industrial enterprises, transport, the use of toxic chemicals and fertilizers, as well as the use of antibiotics in animal husbandry and veterinary medicine in the cultivation and fattening of animals [8-15].

Lemon is used in folk medicine in many countries for the treatment of various diseases: scurvy, jaundice, dropsy, kidney stones, pulmonary tuberculosis, palpitations, gastric catarrh, hemorrhoids, acute rheumatism, gout, aches and lumbago. Lemon fruits are an effective treatment for diabetes mellitus and other diseases accompanied by metabolic disorders. The pectin substances contained in lemon have the ability to remove heavy metals from the body. Lemon peel also has healing properties, which strengthens the gums, eliminates yellow plaque on the teeth and prevents nail delamination. A light massage with lemon juice helps to relieve leg fatigue. With the help of this fruit, you can also cope with calluses and soften roughened skin areas. In Uzbekistan, there are the main varieties of lemon fruit, and the city of Tashkent, Namangan region is also adapted to the cities of Andijan and Fergana. For drying, ripe fruits with a dense structure are selected. as a result, dried fruits change .in dried fruits, the accuracy of the information is lost, and the dried fruits of bitter, but sugary varieties taste good [5].

After a difficult transition period to market relations, the volume of functional nutrition production in Uzbekistan began to increase again.

In recent years, a number of measures have been implemented in Uzbekistan to expand the production of functional nutrition products, for example, multicomponent canned products. Their

composition corresponds to the specifics of metabolism of different ages, contributes to the expansion of the assortment of canned food and increases the nutritional and biological value of daily diets. A comprehensive program is being implemented in the country to create biologically complete high-quality products for healthy and sick people of different age groups with the involvement of employees of academic and industry research institutes in new developments.

**Methods.** Increasing the volume of production of baby food products is possible through the introduction of new technological methods and techniques, improving the quality of products in accordance with the Law of the Republic of Uzbekistan "On the quality and safety of food products".

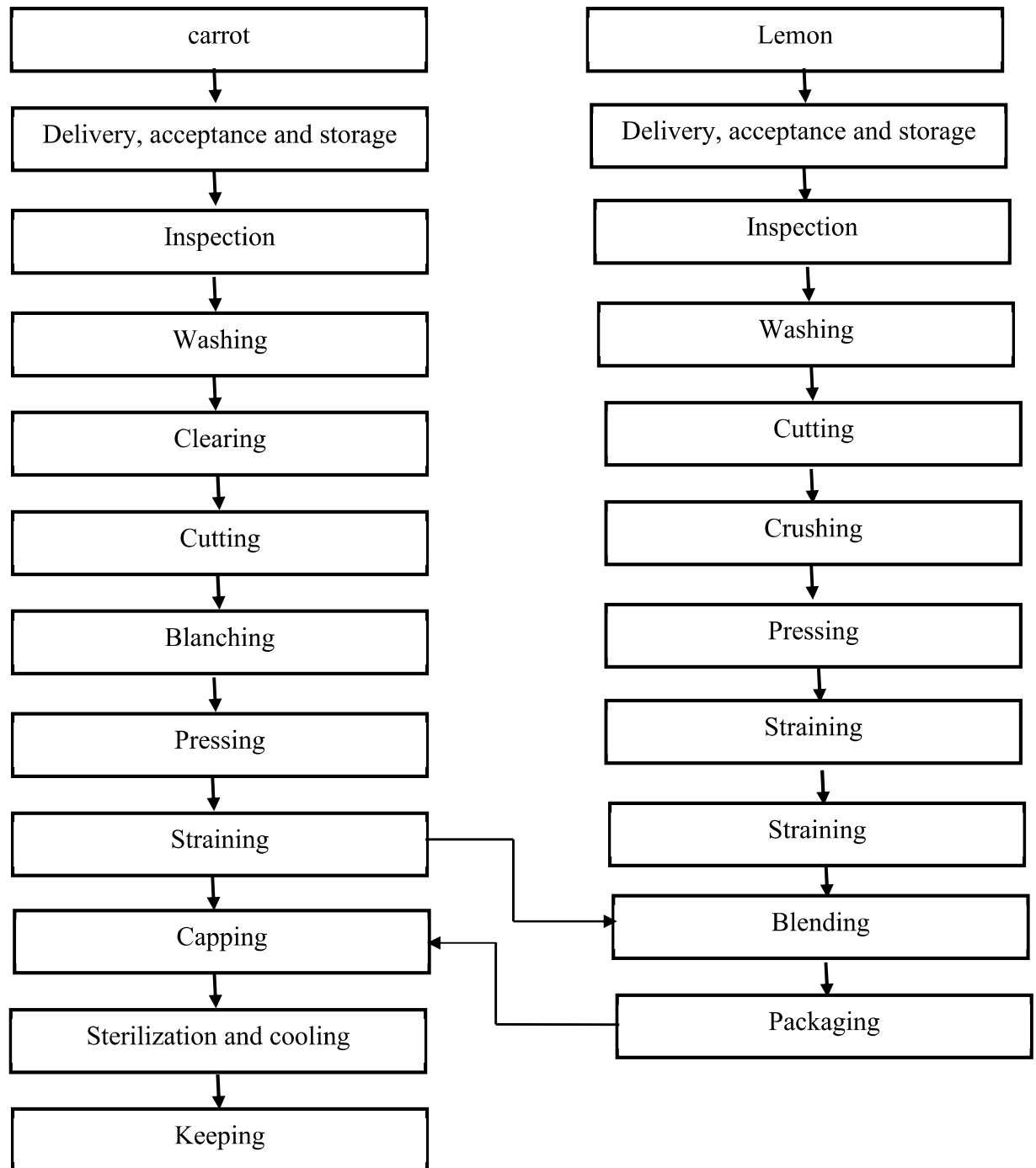
**Results.** The resulting blended juices had a dark red color and a pleasant sweet and sour taste. The tasting committee unanimously noted the best indicators of the third variant of blended juice 1:0.5 (carrot – lemon). This batch of blended juice was bottled, capped and sterilized after packaging.

After cooling to 45 0C, canned food was stored in the laboratory at room temperature and relative humidity up to 75-80%. Thus, as a result of our research, we have developed a technology for producing blended juice from carrots and lemon (Fig. 1). To prevent marriage and microbiological contamination of canned food, it is enough to sterilize them at a temperature of 1000C [6-7].

**Discussions.** Blended carrot and lemon juice is recommended for non-drug treatment of various diseases of the gastrointestinal tract, liver, kidneys, anemia, neurosis, insomnia, atherosclerosis and other metabolic disorders.

Blended juice is recommended to be consumed 150-200 cm<sup>3</sup> three times a day 15-20 minutes before meals for 1-2 months as a dietary (therapeutic) product for non-drug treatment of the above diseases [5].

**Conclusion.** The resulting blended juice does not cause any side effects and its production can be introduced for the treatment of sick people.



**Fig.1. Technology for obtaining blended juice from carrots and lemon**

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## RESEARCH IN BEVERAGE TECHNOLOGY INTENDED TO SUPPORT THE FUNCTIONS OF THE CARDIOVASCULAR SYSTEM

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### Abstract:

**Objective.** Currently, research on the creation of technology for food products enriched with biologically active additives of plant origin continues to be relevant. In this regard, of interest are plants containing polyphenolic compounds, which indirectly through enzyme systems regulate redox processes that determine the state of the cell membrane. From this point of view, prostrate marigolds (*Tagetes patula* L.) are a raw material source with a rich and diverse composition of polyphenols. Infusions and decoctions of marigolds are widely used in folk medicine as antimicrobial, hypotensive, hepatoprotective and diuretic agents.

It is also timely and important to develop a technology for obtaining preventive drinks with the addition of biologically active additives of plants of the genus *Tagetes* (Asteraceae) and some other families characteristic of plants.

**Methods.** The relevance of this work lies in the study of the chemical composition of inflorescences, as well as the study of enriched drinks.

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