A NEW METHOD OF PROCESSING AND MEMORIZING TABLE SALT ON THE BASIS OF THE PREVENTION OF GOITER

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Abstract. *This article provides information on processing table salt, a new method of iodization, the technology of extracting iodine from walnut shells, cleaning table salt and using new innovative methods for enrichment of microelements based on the prevention of goiter.*

Keywords: *iodine, iron, cobalt, selenium, zinc, copper, Khojaikon salt factory, potassium iodide, potassium iodate, sodium iodide, walnut shell, "Chemistry of Plant Substances" Institute.*

Today, thousands of synthetic materials are being produced to replace natural products. Today, humans use more than 70,000 different types of synthetic chemicals in their daily lives on Earth. About 1500 new ones are added to them every year. According to the Environmental Protection Agency, 3,500 of the 70,000 chemicals currently on the market are harmful or potentially harmful to human health. It is important that the food products consumed in the course of living have a range of demand. Ignoring some indicators will slowly lead to negative consequences. Some consumer products may not be in demand as much as we think. The composition of food consumed daily should have vitamins and trace elements necessary for the needs of the body. In particular, solving problems related to iodine is considered important for the people of the world. Because 2 billion people around the world suffer from iodine deficiency of various degrees. Iodine and its compounds are mainly used in medicine.

The daily need for iodine is 100-200 μg. The human body contains 15-20 mg of iodine. It enters the body with water and food and passes to the thyroid gland. The thyroxine hormone plays an important role in the normal course of metabolism in the body, is of great importance in the growth and development of children, and in the normal improvement of the function of the nervous system.

According to research by experts, there are no iodine deficiency patients in Japan, and the people of the country have high intelligence and live long lives due to the high consumption of seafood. Excessive consumption of natural products does not affect the human body, even in cases where the amount of iodine is high.

In addition to iodine, seaweed also contains chlorophyll, carotenoids, unsaturated fatty acids, vegetable stearins, water-soluble vitamins, amino acids, water-soluble proteins, polysaccharides and trace elements, especially iron, cobalt, selenium, zinc, copper, etc. The beneficial properties of such wonderful algae can be explained by their unique biochemical composition. In Japan, they extracted iodine from seaweed called Japanese kelp, and added it to a certain amount of table salt and packaged it.

Observations made in Europe show that seaweed retains iodine for a long time, only if the packaging material is permeable, the amount of iodine decreases slightly.

Iodine deficiency occurs mainly in countries in the centers of continents, far from oceans and seas, and in some areas, especially in places where spring water is used, due to the lack of iodine in water and soil. In Uzbekistan, endemic outbreaks are widespread in the Fergana Valley and Kok, and a number of preventive measures have been developed and put into practice, and this disease has been prevented. Currently, there are some difficulties in the practical provision of complete iodine in the territory of our Republic. This requires the use of additional sources of iodine. The following measures can be eliminated in various ways, first of all, adding iodine to commonly used products as an absolute necessity. One such product is table salt. Potassium and sodium salts of iodine are used in diseases caused by lack of iodine, such as nervous diseases, obesity, mental retardation, etc. Iodized table salt is consumed to prevent these diseases. Currently, in our republic, the technology of extracting iodine from underground hot water has been established in Surkhandarya region and Fergana valley. Table salt is produced on an industrial scale at the Khojaikon salt factory (Surkhondarya).

In the following project, new innovative methods are used in cleaning table salt and enriching it with trace elements.

Inorganic compounds such as potassium iodide, potassium iodate, sodium iodide are used to iodize table salt. Despite the large-scale work on iodization of table salt, creating new types of iodine-containing products in order to completely eliminate the problem of iodine deficiency is one of the urgent problems of today. The transfer of iodine to the body directly depends on the form of its consumption. The optimal iodine for humans is organic iodine. Because, first of all, iodine in this form is the main component of food, and the body is adapted to absorb iodine in this form very well. Because biologically derived substances have fewer side effects than chemically derived compounds. Currently, the production of salts with a slightly lower sodium chloride content is underway. Reducing its amount in the table salt mixture is widely used in the prevention of cardiovascular diseases. The addition of special additives to salt reduces cholesterol in the blood, prevents the development of atherosclerosis, and protects the functions of the immune system. In addition, it prevents the organism from being poisoned by iodine. In our country, there are many plants that have the ability to attach iodine to themselves, like seaweed. Among such plants, we can mainly mention palm trees and walnut trees. Nuts are an important nutritional product and contain many useful components. After ripening, the fruit itself is separated and the peel is ignored. There are various ethers in the walnut tree, i.e. in its leaves, bark, and fruit there are oils and iodine-containing organic compounds, and its organic compounds are formed as a result of photosynthesis, which binds the iodine contained in the soil to itself. It is important to isolate these microelements and add them to food. This process is carried out using the extraction method. Today, alcohol is mainly used to prepare such extracts. In the proposed method, alcohol is not used and the extract does not contain alcohol.

Extraction is carried out under normal conditions through a 5% solution of water and table salt. To obtain the extract, freshly picked or pre-dried walnut husks are finely ground and poured over this mass in a 1:4 ratio of water and left for a day. On the second day, a 5% solution of table salt is added to the solution in a ratio of 5:3. This solution prevents the tanning process. In solution, this mass is kept in a dark place at room temperature for three days. After three days, the

undissolved mass is separated by filtration. The residue left in the filter is washed 2-3 times. The resulting extract is used in the preparation of salt, sugar and other products.

In addition, a dry extract is isolated by evaporation using sunlight at a temperature of 60-70 degrees, which can be used for making preserves at home and as food additives. The resulting dry extract contains organic iodine, which is very well absorbed by the body. The above-mentioned effect is a process based on the phenomenon of diffusion osmosis between a small amount of phenol, carbonyl compounds, and aromatic substances as a result of the effect of a salt-water solution on a walnut shell in a short period of time. As a result of keeping the walnut shell in salt water for a short time, the active components go into solution.

The obtained walnut shell extract is very rich in trace elements, especially iodine, it contains iodine, iron, magnesium, calcium, potassium, zinc, cobalt, nickel, and at the same time various vitamins.

The increase in the toxicity of food products leads to a sharp decrease in the amount of trace elements necessary for the human body.

To date, effective work is being carried out on the enrichment of food products with micronutrients. Such products can include table salt, sugar, flour, various juices and bottled water, canned products, etc.

The 0.3-0.4% content of walnut extract is important for its safety and effectiveness in the enrichment of sugar and sugar products. Sugar products rich in iodine and microelements are obtained by adding the extract to sugar obtained in the form of a solution. These products can be added to confectionery and other products. The extract solution is added to various fruit juices at a concentration of 1-1.5%. It can also be used in fruit canning.

Their function is enhanced if they are consumed by adding walnut extract to regular table salt. Because 0.004% added potassium iodate and iodine taken with food cannot be enough for the human body. Thyroid function can be normalized by increasing its amount to 0.006-0.0065% with organic iodine.

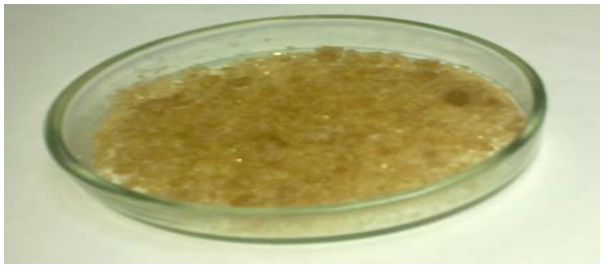
Walnut peel extract contains 630 μg/100 g of iodine and many trace elements. This amount of iodine was confirmed according to the conclusion of the "Chemistry of Plant Substances" Institute named after S. Yu. Yunusov, Academician of the Academy of Sciences of the Republic of Uzbekistan.

The prepared organic iodine solution is added to the filtered table salt solution, and the important table salt is obtained by recrystallization. This process can be done as follows. The content of salt obtained from the Khojaikon salt mine is 95-98%, and its processing requires special labor. The preparation of table salt solution contains silicon oxides and many other additives, which can be done by adding a 5% solution of carbomethylcellulose to the solution during sedimentation and filtration processes. Due to the fact that this solution covers the fine, i.e. salt quality-degrading substances, their size increases and, as a result, unnecessary mass settles. And what does not settle is separated during the filtration process. The pure solution is evaporated in special glass pools under the influence of sunlight at a temperature of 60-70 degrees with the addition of walnut extract. This process avoids the waste of natural gas and electricity used for steaming. Therefore, the enrichment of table salt and confectionery products with microelements will save the money spent on the treatment of diseases associated with the deficiency of these elements, as well as the preparation of iodine preparations from this extract, limiting the amount

of imported drugs, and as a result of these measures, it will have a significant positive effect on the economy of our country.

processed table salt

iodine extract



fortified table salt

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