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**QOVUN PO'STI TARKIBIDAGI VITAMINLARNI O'RGANISH VA UNING XALQ
TABOBATIDA QO'LLANILISHI****ИЗУЧЕНИЕ ВИТАМИНОВ, СОДЕРЖАЩИХСЯ В КОРКЕ ДЫНИ, И ИХ
ИСПОЛЬЗОВАНИЕ В НАРОДНОЙ МЕДИЦИНЕ****STUDY OF VITAMINS CONTAINED IN MELON PEEL AND ITS USE IN FOLK MEDICINE****Ibrahimjon Rakhmonovich Askarov¹, Abdurakhimova Nodira Khayatulla²,
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Annotatsiya

Maqolada qovun po'stini kimyoviy tarkibidagi vitaminlarni yuqori samarali suyuqlik xromatografiyasi (YSSX) uslubi orqali tekshirib o'rganilgan. Tekshirish natijalarga ko'ra, qovun po'stida mavjud bo'lgan vitaminlar miqdori: B₄-63 mg, B₁₂-7,3 mg, B₂-2,96 mg, E-18 mg, B₆-2,03 mg, B₅-0,75 mg, B₉-0,64 mg, C-0,32mg, K-7,32mmg va vitaminlardan tashqari β-karotin – 9 mgborligi aniqlandi. Qovun po'sti vitaminlarga boy, unda biologik faol moddalar ko'p bo'lganligi uchun undan kelgusida oziq-ovqat qo'shimchalari qilib Xalq tabobatida keng qo'llash mumkinligi yoritilgan.

Аннотация

В статье методом высокоэффективной жидкостной хроматографии (ВЖХ) исследованы витамины в химическом составе кожуры дыни. По результатам испытаний количество витаминов, содержащихся в кожуре дыни: B₄-63 мг, B₁₂-7,3 мг, B₂-2,96 мг, E-18 мг, B₆-2,03 мг, B₅-0,75 мг, B₉-0,64 мг, S-0,32 мг, K-7,32 мг и кроме витаминов обнаружено β-каротина - 9 мг. Шкурка дыни богата витаминами, содержит большое количество биологически активных веществ и отмечено, что в будущем она может найти широкое применение в народной медицине в качестве пищевой добавки.

Abstract

The article examines the vitamins in the chemical composition of melon peel by high-performance liquid chromatography (HPLC) method. According to the test results, the amount of vitamins contained in the melon peel: B₄-63 mg, B₁₂-7.3 mg, B₂-2.96 mg, E₂-18 mg, B₆-2.03 mg, B₅-0.75 mg, B₉- 0.64 mg, C-0.32 mg, K-7.32 mg, and in addition to vitamins, β-carotene - 9 mg was found. Melon skin is rich in vitamins, it contains a lot of biologically active substances, and it is highlighted that it can be widely used in folk medicine as a food additive in the future.

Kalit so'zlar: polinevrit, beri-beri, biologik faol modda, vitamin, me'da-ichak ishi, xromatografiya, atsetonitрил.**Ключевые слова:** полиневрит, авитаминоз, биологически активное вещество, витамин, работа желудочно-кишечного тракта, хроматография, ацетонитрил.**Key words:** polyneuritis, beriberi, biologically active substance, vitamin, gastrointestinal work, chromatography, acetonitrile.**INTRODUCTION**

Melons grown in Uzbekistan are the sweetest melons grown in the world. More than 150 varieties have been created in our country. Melon varieties such as: Khandalak Kokcha-14, Kok kalla push, Obi-novvot, Shakar palak, Zargaldok rose, Kara pochok are widely cultivated in our country. Melon is the world's most widely cultivated, annual herbaceous plant belonging to the pumpkin family. It is early (58-75 days), middle (70-100 days), and late (110-130 days) depending on the growth and ripening periods. The root is an arrowroot, and the flower is pollinated by insects. The shape of the fruit is oval, round, elongated, and its weight ranges from 200 g to 16-25 kg.

It has been determined that the sugar content of melons is more than 6-10 percent, depending on the variety and ripening period.

Melon is easy to digest and contains sugar, starch, protein, various vitamins, binders, pectin, organic acids, and various mineral salts.

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Melon consists of peel (peel), flesh, pith and seeds. The ratio between certain parts of the melon varies depending on the variety. Meat - 63.7-84.0%, peel - 10.7-30.8%, and seeds -3.1-7.7%.

Melon flesh contains the following substances. As a percentage of the weight when ripe: water - 85-92, dry matter - 8.15, sugar - 6-13, starch - 0.1-0.7, and other substances - 0.2-0.7. Vitamin C in meat is 0, goes to 20-0.25%. Melon seeds contain 40-52% oil.

Thiamin (B, vitamin) is included in many food products. Thiamine is important in carbohydrate metabolism in the body; Thiamine deficiency causes polyneuritis. Its deficiency in the body causes a severe disease of the nervous system - beriberi, as well as decreased intestinal peristalsis, constipation, muscle relaxation, and a decrease in physical and mental performance.

Riboflavin (vitamin B₂) - participates in the growth process and is one of the growth factors. Participates in protein, fat and carbohydrate metabolism. Adjusts the condition of the central nervous system, affects the metabolism of the eyeball, helps to perceive light and distinguish colors.

Pyridoxine (vitamin B₆) - It plays an important role in nitrogen metabolism, ensuring the normal digestion of protein and fat. If there is a lack of pyridoxine in the body, children will not grow, the work of the gastrointestinal tract will be disturbed, and anemia will occur.

Cyanocobalamin - (vitamin B₁₂) highly biologically active substance. Methionine participates in the synthesis of nucleic acids and blood formation. It enters the body with food, if it is lacking in the body, anemia occurs.

Pantothenic acid (Vitamin B₅) - normalizes the activity of the nervous system and adrenal and thyroid glands.

Calciferol (vitamin D) affects the mineral exchange of substances and bone formation. It is very necessary for the rapid growth and ossification of the skeleton of young children. Lack of vitamin D in the body causes rickets.

LITERATURE REVIEW AND METHODS

According to the above information about vitamins, vitamins are biologically active substances that are very important for the human body. We conducted scientific research on raw materials rich in vitamins, but cheap. [9]

On our part, we studied the chemical composition of melon seeds for proteins, carbohydrates, macro and micro elements, fat, flavonoids, biologically active substances by means of high-performance liquid chromatography (HPLC). [10,11]

RESULTS AND DISCUSSIONS

Due to the fact that water-soluble vitamins contained in the peel of melon waste are rarely studied in the literature, we set the goal of the study and prepared the melon peel as follows to determine the amount of their content by the HPLC method. To do this, first of all, we took 1 melon of the Kokcha variety planted in Ulug'nor district, Andijan region, and weighed it on an electronic scale, its weight was 8710 g. We cut the melon with a knife and divided it into the following parts. Melon pods - 2695 g (26.07%), seeds - 420 g (4.8%), meat part - 6035 g (69.13%). Melon peel was dried in a drying cabinet at 45-50 °C. Melon peels were crushed in a grinder, and then we sent them to HPLC for inspection.

Water-soluble vitamins contained in the sample are taken from the HPLC sample in the amount of 5-10 g on an analytical scale and placed in a 300 ml flat flask. 50 ml of 40% ethanol aqueous solution is added to it. The mixture was stirred at room temperature for 1 hour in an apparatus equipped with a magnetic stirrer and a reverse cooler. The mixture is cooled and filtered. 25 ml of 40 percent ethanol was added to the remaining part and re-extracted 2 times. The filtrates were combined and filled to the mark with 40% ethanol (5-10%) in a 100 ml volumetric flask. The resulting solution is spun in a centrifuge at a speed of 7000 r/pm for 10 minutes. The resulting solution was taken from the top for analysis.

Working solutions of water-soluble vitamins with a concentration of 1 mg/ml were prepared. For this purpose, 50.0 mg of each vitamin standard is accurately drawn on an analytical balance and dissolved in 40 percent ethanol in a 50 mL volumetric flask and filled to the mark.

Phosphorous, acetate buffer systems and acetonitrile were used as eluents in the literature for the determination of water-soluble vitamins by HPLC. We also studied using an acetate buffer system and acetonitrile.

Chromatographic conditions:

- Chromatograph Agilent-1200 (equipped with autodoser)
- Column Exlipse XDB C 18 (obraschenno-faznyy), 204 nm, 254 nm, 290 nm were identified.
- Flow rate 1ml/min
- Eluent acetate buffer: acetonitrile:
- 0-5 min 96:4,
- 6-8 min 90:10,
- 9-15 min 80:20,
- 15-17 min 96:4,

The thermostat temperature is 25°C, at -5 ml input amount (vkol). First, working standard solutions and then prepared working solutions were introduced into the chromatograph.

Information on vitamins extracted from melon peel is given in Table 1.

1 table

The amount of vitamins in the chemical composition of melon peel

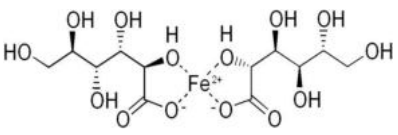
Basic ingredients	Amount, mg/mcg	Daily norm, mg/mcg	Daily standard deviation, +, -
-carotene	9 mg	5 mg	+4
Vitamin B ₁ , choline	0.90 mg	1.5mg	-0.60
Vitamin B ₂ , riboflavin	2.96 mg	1.8 mg	+1.16
Vitamin B ₄ , choline	63 mg	500mg	-437
Vitamin B ₅ , pantothenic acid	0.75mg	5 mg	-4.25
Vitamin B ₆ , pyridoxine	2.03 mg	2 mg	+0.3
Vitamin B ₉ , folates	0.64mg	400 mg	+0.6
Vitamin C, ascorbic acid	0.32 mg	90 mg	-89.68
Vitamin E, alpha tacoverol	2.18 mg	15 mg	-13.82
Vitamin K, phyloquinone	7.32 mcg	120 mcg	-112.7
Vitamin B ₁₂	7,3 mg	6 mcg	-4.17

According to the above information about vitamins, vitamins are biologically active substances that are very important for the human body. We conducted scientific research on raw materials rich in vitamins, but cheap. One such raw material is melon waste - the results of the chemical analysis of the rind in the HPLC method are given in Table 1, and according to the information in it, we found that the melon rind is really rich in vitamins.


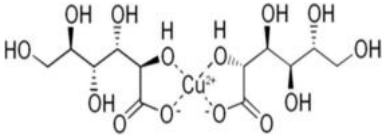
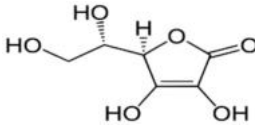
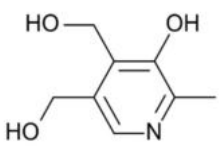
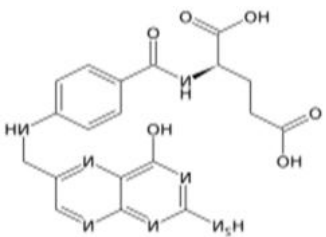
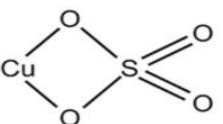
Today, the demand for synthetic iron preparations among the population is increasing. Examples of these drugs are Totema and Ferrogemotogens. These synthetic agents can also cause side effects by acting on the human body. For example, it increases the amount of sugar in the blood, can cause diarrhea, itching, and allergic rashes. The results of these synthetic agents are shown in Table 2.

Table – 2

Drugs used in the treatment of anemia

Type of drug	Name of the drug	Chemical composition	Structure	Pharmacodynamics and side effects
Iron preparations	Totem	Iron (II) gluconate		Restores the activity of blood components. There is a possibility of bleeding in stomach and duodenal ulcer disease. Increases

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		Manganese (II) gluconate		the amount of sugar in the blood, diarrhea, itching, rash, pain in the epigastric area.
		Copper (II) gluconate		
Ferrogemotogen		Ascorbic acid		Stimulates erythropoiesis. Activates iron absorption. Diarrhea, itching, rash
		Vitamin B ₆		
		Folic acid		
		Iron (II) sulfate	$\text{Fe}^{2+} \left[\text{SO}_4 \right]^{2-}$	
		Copper (II) sulfate		

In addition to synthetic drugs, natural products can be used for blood transfusion. The difference between natural products and synthetic products is that they do not have adverse effects on the human body, so we set ourselves the goal of studying melon peel. A number of experiments on the use of melon peel in folk medicine for anemia have been conducted and positive results have been achieved.

CONCLUSION

In conclusion, it can be said that according to the results of the inspection by HPLC, the vitamins present in the melon peel are in the following order: B₄-63 mg, B₁₂- 7.3 mg, B₂-2.96 mg, E- 2.18 mg, B₆ -2.03 mg and more than ten other vitamins can be added. Due to the presence of biologically active substances, tannins, flavinoids, minerals, amino acids, fatty acids, antioxidants, organic acids, etc. in the peel of the melon, the consumption of food supplements made from it by patients will help them to increase their immunity, recover quickly from anemia and other diseases.

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