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QUINCE FRUIT - AN IMPORTANT SOURCE OF MICRONUTRIENTS

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ANNOTATION

The article presents the results of investigation on the content of macro-and micronutrients in quince fruit. The results of the study show that the main macronutrients found in quince fruit are potassium, phosphorus, calcium, sodium, magnesium. In addition, quince fruit contains rare trace elements such as selenium, molybdenum, lithium, zirconium, cobalt, strontium. It indicates that quince fruit and canned products made from it can be used for prophylactic purposes.

Keywords: macronutrient, micronutrient, quince, fruit, micronutrient, enzyme.

INTRODUCTION

It should be stressed that raw fruits and their processed products plays an important role in the structure of the diet of the population of the Republic of Uzbekistan. Favorable natural climatic conditions of the republic allow to develop horticulture. For this reason, our sweet fruits and their processed products are exported to many foreign countries. Quince, which belongs to the category of seeded fruits, is also no exception.

Quince fruit is especially noteworthy for its good preservation and high biological value of jams, jams and "povidlo" (cooked from fruit or berry puree with sugar) products made from it. It is also widely used in folk medicine in the treatment of whooping cough, bronchitis, high blood pressure, diabetes, skin diseases. However, very little research has been done on the micronutrient content of quince varieties grown in the country. Therefore, we set the study of the macro and microelement composition of quince fruit as the main task.

OBJECT AND METHODS OF RESEARCH

As a research object, we selected the variety of quince "Samarkandskaya krupnoplodnaya", which is regionalized in our country.

In the laboratory of the Institute of Bioorganic Chemistry of the Academy of Sciences of Uzbekistan, we determined the amount of macro and micronutrients in quince fruit by the atomic absorption method on a "Saturn" spectrophotometer.

THE RESULTS OF THE STUDY AND ITS DISCUSSION

The results of numerous scientific studies show that micronutrient deficiencies in food lead to increased morbidity and mortality among mothers and children, reduced intellectual and physical development of children and adolescents, and reduced ability to work in adults. The only safe and economical way to prevent these negative consequences is to fortify food and organize a balanced diet on this basis. For this reason, the Law "On Micronutrients" [1] has been adopted in our country, and work is underway to ensure the implementation of this Law.

Table 1 below shows the results of research on the macro and microelement composition of the fruit of the quince variety “Samarkandskaya krupnoplodnaya”.

Table 1 Macro and micro elemental composition of quince fruit “Samarkandskaya krupnoplodnaya”

№	Macro and microelements	The amount is in mg per 100 g	№	Macro and microelements	The amount is in mg per 100 g
1.	K (potassium)	304,32	15.	Hg (mercury)	0,10
2.	P (phosphorus)	360,56	16.	Cu (copper)	0,13
3.	Ca (calcium)	143,02	17.	Zn (zink)	0,19
4.	Na (sodium)	84,76	18.	Sn (tin)	0,13
5.	Si (silicon)	35,94	19.	Ga (gallium)	0,11
6.	S (sulphur)	25,76	20.	Mo (molybdenum)	0,08
7.	Mg (magnesium)	44,89	21.	Zr (zirconium)	0,07
8.	Fe (iron)	5,69	22.	Rb (rubidium)	0,02
9.	A1 (aluminum)	6,05	23.	Se (selenium)	0,02
10.	B (boron)	0,99	24.	Ni (nickel)	0,05
11.	Ba (barium)	0,70	25.	Li (lithium)	0,01
12.	Sr (strontium)	0,29	26.	Mn (manganese)	0,08
13.	Ti (titanium)	0,25	27.	Co (cobalt)	0,003
14.	Cr (chrome)	0,22	28.	V (vanadium)	0,005

The test results show that the main macronutrients found in quince fruit are potassium, phosphorus, calcium, sodium, magnesium. Comparing the results with the indicators given in the reference book “Chemical composition of food” [2], it can be concluded that quince grown in the natural climate of Uzbekistan does not differ significantly in the amount of potassium, but in terms of phosphorus, calcium and sodium, it is several times higher than in the reference book.

The results of the research show that quince fruit is rich in iron. It is well-known that iron, which is found in fruits and vegetables, is well digested by the human body, and most of the iron that is found in cereals occurs in an indigestible form in the body. The presence of iron in the nutrition of people with anemia is very important. The information above states that quince fruit contains an average of 3.0 mg of iron per 100 g. According to the results of our research, quince grown in Uzbekistan contains 5.69 mg of iron. Therefore, quince fruit and its products can be used as a prophylactic remedy in anemia.

According to our research results, quince fruit is relatively rich in sulfur also. In 100 g of quince fruit, its content was 25.76 mg. It is known that sulfur is found in almost all proteins of the human body, especially in the amino acids cysteine, cystine, methionine. In addition, sulfur is also involved in the formation of vitamin B1 (thiamine), insulin and other compounds. Quince fruit can serve as an important additional source of this trace element for people.

Quince fruit can also serve as an additional source of unique trace elements for the human body, such as selenium, molybdenum, lithium, zirconium, cobalt, titanium, chromium. It is known that one of the most essential trace elements is selenium. Selenium takes part in the metabolism of fats, proteins and carbohydrates. Selenium is also organically associated with

biologically active substances such as ascorbic acid, tocopherol (vitamin E) and biotin (vitamin H). According to our research, the amount of selenium was 20 mcg per 100 g of quince fruit.

CONCLUSION

The results of the study show that quince fruit contains macronutrients such as phosphorus, potassium, sodium, magnesium, calcium, silicon, sulfur and iron, chromium, selenium, molybdenum, cobalt, lithium, zirconium and serves as an important source of other trace elements, and we consider it expedient to use products made from it for prophylactic purposes. So, we must not forget that ensuring the constant presence of wet fruits and their processed products in our diet is one of the key factors in maintaining a healthy way of life.

LITERATURE

1. Law of the Republic of Uzbekistan “On prevention of micronutrient deficiencies among the population”, June 7, 2010.
2. Chemical composition of food products (Handbook). Book 1. Reference tables of the content of the main nutritional and energy values of foods. M.: “Agropromizdat”, 1987, p. 71.