GALAXY INTERNATIONAL INTERDISCIPLINARY RESEARCH JOURNAL (GIIRJ)
ISSN (E): 2347-6915
Vol. 9, Issue 11, Nov. (2021)

ANALYSIS OF MINERAL COMPOSITION POWDER OF TOPINAMBUR TUBERS AND EXTRACT OF RODIOLA DENTATE ROOTS

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ABSTRACT

It has been conducted the analysis of macro- and micro elemental composition of powder from topinambur tubers and dry extract obtained from rodiola dentate roots. It has been revealed that samples have the balanced macro- and micro elemental composition. According to the results of conducted research the obtained products are recommended for developing the capsule biologically active supplements for food.

Keywords: topinambur tubers, rodiola dentate roots, dry extract, powder, macro- and micro elements.

INTRODUCTION

Micronutrient complexes act mainly as catalysts and partially inhibitors for enzymes and other physiologically active substances in plants, which are mutually packaged as a natural biocomplex, which is relatively harmless and effective biologically when used in plantsprovides activity.

In turn when recommending plant products, it is advisable for doctors to use them taking into account not only the bioactive organic substances, but also the mineral content. Therefore, accurate knowledge of the sources of macro and micronutrients in the plant allows their effective use from a medical point of view. High accuracy in the analysis of micronutrients has opened up a wide range of possibilities in this regardand micronutrient analysis.

It should be noted that the analysis of minerals in plants is one of the most complex methods of analysis and requires the use of methods that provide high accuracy. Today, the introduction of effective methods that provide fast and high accuracy in the analysis of micronutrients has opened up a wide range of possibilities in this regardand micronutrient analysis.

Determination of mineral content of artichoke powder Jerusalem artichoke powder obtained by drying in an IR- vacuum device was used. To remove the powder, the artichoke tubers were thoroughly washed from the soil, wioed dry with a clean towel. The ends, ready for drying, were cut into thin circles. After that, the optimal drying conditions of the raw material were determined. The experiments were carried out in the fist drying cabinet type HS 62A and in the IR vacuum device improved by scientists of the Tashkent State Technical University. The results obtained in the first method were obtained by drying for 7 h at 50 C.

The IK was dried in a vacuum device at 30, 40, 50, and 60C , and a sample with optimal performance was obtained in a mass dried at 50C for 1.5 h. The powder from Jerusalem artichoke seeds is light yellow to light brown in color and has a distinctive odor samples were

taken for optimal performance in the dried mass. The powder obtained from the ends of the stamens varies from pale yellow to pale brown, to a peculiar Hidga. Analysis of macro-and micronutrients in Jerusalem artichoke powder samples was performed at the Central Laboratory of Hydrogeology of the Academy of Sciences of Uzbekistan (Tashkent) ISP Agilent Technologies spectrometer (USA, series Sr N 7500). Quantitative analysis revealed large amounts of calcium-up to 1800 Mr/kr, potassium- up to 15000mg/kg, sodium- up to 370mg/kg. 6 mg/kg, moliodene- 0.76 Mg/kg, copper 7.50 Mr/kr, ceziy-0.09 mr/kr, iodine-o.o8 Mr/ kg, marganech 5.4 mg/kg, aluminium-300 mg/kg, rubidium-13 mr/kr. The amount of trace elements is within the following limits: selenium 0.2 mr/kr, cobalt 0.12 mg/kg, vanadium-47.9 Mr/kr, xrom 4.1 Mr/ Kr, nickel -0.5 mr/kr, lithium-1,7 mg/kr, kumush 0.03 mg/kg. Toxic elements-cadmium, lead, beryllium, mercury and thallium –were found to be less concentrated at the and their content reached the hygienic norms specified in SanPin N 0283. The results of the analysis are given in Table 1:

Analysis of macro-and micronutrients in Jerusalem artichoke powder

Macro and micronutrients	Quantity, mg/kg	Macro and micronutrients	Quantity, mg/kg
Li	1.7	Zn	11
Na	370	Se	0,2
Mg	930	Rb	13
K	15000	Sr	8,6
Ca	1800	Mo	0,76
Si	400	Ce	0,24
Fe	300	Ba	9,6
Cu	7,5	La	0,14

The results show that Jerusalem artichoke has a rich chemical composition, inulin, pectin, vitamins and a well-balanced complex of macro-and micronutrients, in addition to fiber, iron, spirit, magnesium and other similar elementsshoved a large accumulation of plants: it was found that all samples contained a large accumulation of silicon, which is the structural basis of the organism, that is, Jerusalem artichokes belong to the group of “siliconophilic’ plants.

The analysis of macro-and micronutrients, which play an important role in ensuring the biological activity of various dichloidiola dry extracts, was also performed [5]. For the experiment, the optical parameters of the dry Ksa I were obtained by percolation using 75% ethyl alcohol when the sample was crushed to 2-3 mm in size. The resulting extract was removed from the meat and the alcohol was removed in a rotop and KYuM steamer. The spiotic mass was then dried in a pot vacuum until completely dry. Experiments for the detection of macro- Ba micronutrients were carried out on a mass spectrometer ISP “Agilent technologies” (AKW, Series Sr №7500). The results are presented in Table 2.

Analysis of macro and micronutrients in dry tooth rhodiola dry extract

Macro and micronutrients	Quantity, mg/kg	Macro and micronutrients	Quantity, mg/kg
Li	0.72	Se	0.90
Na	300	Rb	12
Mg	390	Sr	8.60
K	3700	Mo	0,39
Ca	2700	Zn	12
Fe	260	Ba	47
Cu	12	P	510

Rhodiola is obtained on the basis of the optimal amount of micronutrients such as copper, moliodene, zinc, selenium in the bio row with polyenols, aromatic acids, carbohydrates in the composition of rhodiola root. The fact that the extract is adaptogenic is due to the fact that it increases the body's resistance to stress anti resistance to stress and anti-depressant properties.

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