

DETERMINATION OF MACRO AND MICRO ELEMENTS IN -0-k-ZIZIPHORA PLANT

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Abstract. *This article provides information on the determination of macro and micro elements found in the composition of the ziziphora plant.*

Keywords: *Ziziphora, medicinal properties, macro and micro elements, ICP-MS – (inductively coupled plasma mass spectrometry).*

Introduction. *Ziziphora* is a perennial herb about 40 cm tall, belonging to the family of sedums. It blooms in June-July, bears fruits in July-August, grows on the slopes of the mountain district, on gravel and stony brown soil at an altitude of up to 2400 meters above sea level.

Mainly the above-ground part of the plant (grass) is used. It is better than black pepper and laurel in its healing and pleasant taste. [1]

This plant has been used in folk medicine since ancient times. It is found almost everywhere in the world. There are 7 types of it in our country, and it grows in the mountainous regions of Tashkent, Samarkand, Jizzakh, Namangan, Kashkadarya and Surkhandarya regions.

Ziziphora tincture is used as an expectorant, anti-cold, analgesic, hypnotic, anthelmintic.

One of the reasons for its widespread use now is its importance in the natural treatment of high blood pressure, which affects almost 60% of the population. It is an effective tool in the treatment of rheumatism, and in the elimination of the highly contagious flu viruses that flare up in the spring and autumn months. [2]

In addition to the above, deer grass is used in folk medicine for nervousness, bee and bee stings, women's climax, lice and lice irritation, headache, bronchial inflammation, weakness, liver inflammation, colic, lung inflammation, constipation, alcoholism, loss of appetite, cough, cataract, inflammation of the eye, blurred vision, whooping cough, nausea, stomach disease (gastritis), blood circulation disorder in the brain, client's sluggishness (impotence), inflammation of the tonsils (tonsillitis), nerve pain, inflammation of the nerves (neuritis), weight loss, indigestion, lack of vitamin D in the body, spinal cord disease, gout, halitosis, restlessness, pleurisy, obesity, urinary retention, diuretics, hair loss, bone pain, angina, fungal skin diseases, itching, teeth Diseases, flu, seizures, insomnia pain, paralysis, hernia, cold, urticaria, pulmonary emphysema, inflammation of the middle ear, determination of macro and micro elements in the content of sugar diabetes mellitus is a medicine that is used in the natural treatment of diseases such as gallstones, delayed menstruation, inflammation of the mucous membrane of the larynx is one of the medicinal plants. [1,3]

The aim of our research is to determine the trace and microelements in deer grass by the ICP-MS – (inductively coupled plasma mass spectrometry) method.

Research method. Quantitative composition of micro and macroelements was studied by ICP-MS (inductively coupled plasma mass spectrometer) method of analysis at 7500 using "Test.M" in "Semiquant" mode[4; p. 489].

Analysis and results. For the study of the object, samples weighing 0.1 g were taken in heat-resistant envelopes for separation, 10 ml of concentrated nitric acid (HNO₃) and 2 mL of perchloric acid (HClO₄) was poured. This was done by boiling the solutions on the plate until the sample was completely decomposed and a completely clear solution was obtained. The obtained solutions were then quantitatively transferred to 100 mL flasks with purified water. The samples prepared in this way were used for ICP-MS (inductively coupled plasma mass spectrometer) mass spectral analysis. Device parameters: ICP-MS 7500 plasma power 1200 W, integration time 0.1 sec. calibration and quantification of the device was carried out on the basis of the multi-element calibration standard of the company "Agilent Technologist", 44 elements. As a result of the analysis, 27 macro and micronutrients were identified in the Ziziphora plant leaf and are listed in Table 1.

Table 1

Macroelements		Titan (Ti)	27
Potassium (K)	15711	Vanadium (V)	1,70
Calcium (Ca)	14453	Chrome (Cr)	2,82
Magnesium (Mg)	1538	Manganese (Mn)	58,3
Sodium (Na)	458	Iron (Fe)	919
Phosphorus (P)	1157	Cobalt (Co)	0,434
Microelements and ultra microelements		Nickel (Ni)	2.46
Lithium (Li)	3,35	Copper (Cu)	5,61
Beryllium (Be)	0,108	Zinc (Zn)	19,07
Bohr (B)	60,00	Gallic (Ga)	0,867
Aluminum (Al)	1056	Strontium (Sr)	24,8
Iodine (I)	0,377	Zirconium (Zr)	0,321
Arsenic (As)	0.759	Niobium (Nb)	0.051
Rubidium (Rb)	6,96	Molybdenum (Mo)	1,04

Based on the information presented in the table, it can be seen that macro, micro and ultramicroelements are found in *ziziphora*, they can be placed in the following rows in descending order:

Macroelements – K > Ca > Mg > P > Na;

Microelements and ultra microelements – Al > Fe > B > Mn > Ti > Sr > Zn > Rb > Cu > Li > Cr > Ni > V > Mo > Ga > As > Co > I > Sr > Be > Nb > Ge.

Based on the above, the content of potassium, calcium and magnesium is the highest among macronutrients, and among micronutrients – Al, Fe, B, Mn, Ti, Zn is dominant in terms of quantity. This will further increase the focus on *Ziziphora*. The creation of food supplements made using *Ziziphora* plant also serves to strengthen human health and prolong life.

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