



STUDYING THE ELEMENT COMPOSITION OF DRY EXTRACT FROM *TRIBULUS TERRESTRIS* L.

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Relevance: Microelements are essential for living organisms, and numerous studies have shown that minerals play a major role in human life. This is because without them, vital processes cannot proceed properly. They also ensure the formation of the chemical structure of all human tissues, including muscle tissue. It is known that plant macro- and microelements are better absorbed by the human body. Unlike organic compounds in the human body, they are not synthesized, but are obtained only through food. Therefore, a systematic study of the mineral composition of medicinal plants and preparations obtained from them is of great importance in pharmacy. *Tribulus terrestris* is a promising plant with sufficient reserves and is widely distributed in Uzbekistan. It is being studied for the purpose of obtaining medicines and biologically active additives. In the process of analysis, it is important to study the elemental composition of the dry extract obtained for the purpose of developing a medicine.

The objective of the study: to study the macro and micronutrient composition of *Tribulus terrestris* dry extract.

Methods and techniques: The analysis of the macro- and microelement composition of *Tribulus terrestris* dry extract was carried out by spectral method. To determine the elemental composition, a dry extract in the amount of 0.1 g (accurate draw) was decomposed in a mixture of nitric and perchloric acids (8 ml : 2 ml) in a Milestone microwave oven programmed with a power of 250 to 500 W at a temperature of 180 to 2200°C. The resulting solution was transferred to a 100 ml volumetric flask, and the volume of the solution was brought to the mark with water. 10 ml of the resulting solution was directly introduced into the spray chamber of the ICP-MS (inductively coupled plasma mass spectrometer) AT 7500a instrument.

Equipment parameters: plasma power 1200 W, integration time 0.1 sec, peristaltic pump rotation speed – 0.1 rpm/sec. Other parameters of the instrument were determined during the adjustment process and remained unchanged throughout the entire maintenance period. A multielement (27-component) standard solution with a content of 1.0 mg/l of the necessary components was used as a standard.

Results: The analysis revealed that the dry extract of ground blackthorn contains 50 chemical elements. The identified elements can be arranged in the following order of decreasing abundance:

Fe > Cl > Si > S > Br > Al > P > Ba > Mn > Sr > Zn > I > Ag > Ni > K > Se > Cu > Li > Na > Ti > Rb > Ca > W > Mg > Ir > Cd > Pd > V > Sc > U > Co > Mo > Sb > Zr > Cs > Tl > Y > Bi > In > Rh > Nb > Hg > Au > Pt > Pb > Sn.

The presence of elements necessary for life, in particular iron, zinc, potassium, calcium, sodium, magnesium, indicates its biological significance. Along with useful micro- and macroelements, heavy metals - cadmium, lead, mercury - were detected in the dry extract, and their content did not exceed the sanitary standards for dry extracts.

Conclusions: Sodium, silicon, calcium, magnesium, potassium, sulfur, phosphorus, selenium, iron, chromium, manganese, copper and zinc, identified in the dry extract of *Tribulus terrestris*, are



important elements that positively affect the vital activity of the organism, which determines the biological value of the studied plant.