

СУЧАСНІ ДОСЯГНЕННЯ ФАРМАЦЕВТИЧНОЇ НАУКИ В СТВОРЕННІ ТА СТАНДАРТИЗАЦІЇ ЛІКАРСЬКИХ ЗАСОБІВ І ДІЄТИЧНИХ ДОБАВОК, ЩО МІСТЯТЬ КОМПОНЕНТИ ПРИРОДНОГО ПОХОДЖЕННЯ

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MINERAL COMPOSITION OF PEANUT

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Introduction. Macro- and microelements play a critical role in physiological processes: from the formation of structural components of tissues to the regulation of neurohumoral activity and maintenance of homeostasis (in particular, acid-base balance). Since the human body is not able to synthesize or accumulate some elements in sufficient quantities, it is extremely important to ensure their regular intake from the outside. In this case, it is worth taking into account individual characteristics (age, gender, clinical condition), because violation of the dosage – in particular, excessive use of dietary supplements or fortified products – can lead to metabolic disorders [1].

In the world, the peanut (*Arachis hypogaea* L.) is the second most important legume after soybean. Therefore, peanut seeds are studied by many researchers. In order to find new sources of biologically active substances, we investigated the elemental composition of peanut grass, because it is the above-ground mass of this plant that remains out of the attention of the pharmaceutical industry [2].

Materials and methods. The study of the elemental composition of the raw material was carried out on the basis of the Scientific and Technological Research Center «Institute of Single Crystals» of National Academy of Sciences of Ukraine. The atomic emission spectrographic method was used. It is based on the evaporation of plant ash mixed with graphite, followed by excitation of light in an alternating current arc discharge and measurement of the intensity of individual elements of spectral lines.

Results and their discussion. The total mineral content in peanut grass was (5808,57 mg/100 g). A total of 19 elements were identified in peanut grass, including 5 macro- and 9 microelements. As a result of the study, it can be concluded that the following macroelements predominate in the amount of underground peanut grass: sodium (504 µg/100 g), potassium (2691 µg/100 g), calcium (1121 µg/100 g), magnesium (358 µg/100 g); among the microelements aluminum (150 µg/100 g) and iron (79 µg/100 g) predominate. Separately, it should be noted the high content of silicon in the grass – 632 µg/100 g. Due to its properties, this element stabilizes the state of the vascular system and stimulates regenerative processes. It acts as a modulator of the immune system, enhancing the body's ability to counteract external threats through the mechanism of phagocytosis.

Experimental data confirmed that the concentration of heavy metals in the studied samples complies with the standards of the State Pharmacopoeia of Ukraine and does not exceed the limits of the maximum permissible content [2]. The lack of ability of the raw material of peanut to accumulate toxic elements is a strong argument for its introduction into pharmaceutical production.

References:

1. Fairweather-Tait S. J., Cashman K. Minerals and trace elements. *World. Rev. Nutr. Diet.* 2015. Vol. 111. P. 45–52.
2. Jani, B.L. and Devani, B.M. Peanut Protein: Rich Source as Vegan Protein. *J. Food Sci. Nutr.*, 2020. №6. 59 p.