KIMYO

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LAVANDANING KIMYOVIY TARKIBI

ХИМИЧЕСКИЙ СОСТАВ ЛАВАНДЫ

CHEMICAL COMPOSITION OF LAVENDER

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Annotatsiya

Ushbu maqolada Lavanda o‘simligining makro- va mikroelement tarkibini AVIO 200 optik emission spektrometr yordamida eksperimental aniqlangani va ushbu dorivor o‘simlikning xalq tabobatida qo‘llash o‘rinlari aytib o‘tilgan.Aynan aholi orasida ortib borayotgan nevrologik ya’ni tez-tez asabiylashuv, asab tizimi toliqish, xotiraning pasayishi kabi kasalliklarni davolashda dorivor lavanda o‘simligidan foydalanish orqali yaxshi samara olish mumkinligini ilmiy asoslashga qaratilgan.

Аннотация

В этой статье описывается экспериментальное определение макро - и микроэлементного состава растения лаванды с помощью оптического эмиссионного спектрометра AVIO 200 и места применения этого лекарственного растения в народной медицине. Именно для таких растущих среди населения неврологических заболеваний, как раздражительность, утомляемость нервной системы, ухуджение памяти, можно получить хороший эффект от использования лекарственного растения лаванды.

Abstract

This article describes the experimental determination of the macro - and trace element composition of the lavender plant using the AVIO 200 optical emission spectrometer and the places of application of this medicinal plant in traditional medicine. It is specifically for such growing neurological diseases among the population, such as irritability, fatigue of the nervous system, deterioration of memory, can be obtained a good effect from the use of the medicinal plant lavender.

Kalit so‘zlar: *Lavanda, makroelement, mikroelement, essensial elementlar, optik emission spektrometr, nevrasteniya, magniy, ruh.*

Ключевые слова: *Лаванда, макроэлемент, микроэлемент, эссенциальные элементы, оптический эмиссионный спектрометр, неврастения, магний, дух.*

Key words: *Lavender, macroelement, microelement, essential elements, optical emission spectrometer, neurasthenia, magnesium, spirit.*

INTRODUCTION

It is known that a person, who is the main object of medicine, is a very complex being, he has great power and great weakness. The modern human organism is different from the human organism of the past. This can be caused by psychological, physiological and environmental factors. Moreover, apart from the fact that medicinal herbs themselves are subject to change, each human organism has its own individual characteristics [1]. In the time we live in, there are also changes in people's attitude towards the surroundings - the feeling around them - exciting events and phenomena, that is, now people are getting nervous very often and very quickly.

Diseases of the nervous system cause significant social and economic problems worldwide. According to WHO, 25% of functional disorders in the world are caused by diseases of the nervous system [2]. Conditions such as temporary loss of work ability, disability, death, and a decrease in the quality of a healthy lifestyle remain among the causes of diseases of the nervous system..

According to the conclusions obtained as a result of the analysis of the composition of food products, there is a sharp decrease in the amount of minerals in the content of refined or chemically processed food products. Likewise, consumption of thermally or chemically processed food products has been found to lead to deficiency of vitamins, minerals, magnesium and soul elements in the body [3].

When magnesium ions are increased in the blood, as a result of its large excretion through urine, magnesium deficiency occurs in the body, and this situation leads to strong nervousness (stress) in people [4].

It is known that, from the point of view of their importance in the human body, the essential (very necessary for life) elements include all macroelements (H, O, N, C, Ca, Cl, F, K, Mg, Na, P,

S) and 8 microelements (Cr , Cu, Fe, I, Mn, Mo, Se, Zn) are included. A healthy human body contains 12 macroelements (C, H, O, N, Ca, Cl, F, K, Mg, Na, P, S) and 69 microelements. Disturbance of the balance of these macro- and microelements in the human body causes various diseases. In particular, due to the lack of essential elements such as magnesium, soul and copper, diseases of the nervous system are observed in a person.

Magnesium. 99% of the element composition of the human body is made up of 12 basic chemical elements, among which magnesium ranks fourth after potassium, calcium and sodium. Magnesium is not synthesized in the human body, it comes in the form of Mg2+ ion, along with food, water and salt. The diagnosis of magnesium deficiency in the body is often determined based on the patient's clinical symptoms, and this method of diagnosis is very common. Magnesium deficiency among the population is 46% [5].

Zinc is considered one of the essential (very important) elements, and its importance is evident in the process of immuno- and neuromodulation. From the point of view of neurology, the element zinc is considered one of the most studied elements. By remembering the importance of the neurons called "ruhergic" neurons, which are widely distributed in all parts of the cortex of the cerebral hemispheres of the central nervous system, especially in the hypothalamus, we may understand that zinc is included among the essential elements [6]. Only iodine, iron and magnesium can compete with zinc in terms of its importance in the human body.

There is a bioaccumulation of any biogenic element in the body, and as a result of its violation, that is, as a result of an increase or decrease in the amount of the element in the body, a disease will certainly occur. Sometimes, the amount of chlorine element in the body is higher than normal, and bromine and iodine elements decrease in the cells. The body's daily need for all organic elements is given in the following table:

Table 1. The organism's daily need for essential elements (mg)

Type of essensial element	**Fe**	**Zn**	**Cu**	**Mn**	**K**	**Mg**	**Ca**
daily needs of the body (mg)	10-20	12-20	1 - 2	2 - 5	1300 - 3000	800 – 1600	500-750

In order to prevent and treat nervousness among the population and various diseases caused by it, we began to study the chemical composition of medicinal lavender (Lavandula) acclimatized in the conditions of Uzbekistan. For this purpose, we conducted an experimental study of the macro and micronutrients in the plant using an AVIO 200 optical emission spectrometer.

EXPERIMENTAL PART

In order to analyze the above-ground part of the medicinal lavender plant, it was first dried in a drying cabinet (VWR DRY-line, Germany) until the mass did not change. 200 mg of the dried plant sample was weighed on an analytical balance (FA220 4N). A mineralization device (MILESTONE Ethos Easy, Italy) was used to mineralize the sample. For this, 200 mg of sample, 6 ml of nitric acid (HNO3) purified on the basis of distillation, that is, acid distilled in an infrared acid purification device (Distillacid BSB-939-IR) and 2 ml of hydrogen peroxide (H2O2) as an oxidizer, are placed in the test tube of the device, and 20 minutes. during 1800 C, all the mixture was mineralized. After the mineralization process is completed, the mixture in the test tube is diluted with distilled water (BIOSAN, Latvia) to 25 ml in a separate conical volumetric flask.

The solution in the flask is placed in special test tubes in the auto-sampling department for analysis. The prepared sample was analyzed in an Avio200 ISP-OES inductively coupled plasma optical emission spectrometer (Perkin Elmer, USA). The accuracy of the device is high, and it allows to measure the elements contained in the solution to an accuracy of 10-9 g. The data obtained as a result of the research are presented in the following table:

Table 2. Macroelement composition of acclimatized lavender plant (mg/%)

Type of Macroelement	Ca	K	Na	Mg	P	S	K	Ba
Lavender	553,3	515,32	26,08	434,88	139,23	134,52	51,53	3,52

According to the results of the conducted research, it has been proven that the topsoil of the lavender plant is very rich in calcium, potassium and magnesium elements, which are very necessary for human life, and 100 g of the plant contains 434.88 mg of Mg. During the research, along with macroelements, the microelement composition of lavender was determined experimentally. Below are the results of the study:

Table 3. Micronutrient composition of acclimated lavender plant (mg/%)

Li	Al	Mo	Te	Se	Sb	Sn	Sr	Cr	Mn	Si
0,92	0,069	0,41	0	0	0	0	0,106	0	2,81	7,521

B	As	Fe	Pb	Cd	V	Zn	Cu	Ag	Hg	Co	Ni
5,73	0	58,24	0,038	0,022	0,070	21,54	1,92	0	0	0,22	0,38

It was experimentally determined that lavender's surface is rich in macro- and microelements, but it does not contain toxic elements (Sn, Hg and As). As a result of this physico-chemical analysis, it was proved that medicinal lavender is rich in magnesium (434.88 mg%) and spirit (21.54 mg%), which are considered essential elements for the normal functioning of the nervous system.

CONCLUSION

Lavender contains essential oils, polyphenols, and biologically active terpenoids, and since it is rich in essential elements, especially magnesium and spirit elements, it is possible to obtain new medicinal food supplements from it for the treatment and prevention of diseases of the central nervous system. Due to the fact that the plant contains magnesium and spirit biogenic elements, which eliminate the tension of nerve fibers, it is scientifically appropriate to use this plant in places of nervousness during exciting events. In addition, biologically active lavender can be used to treat overexcitability of the nervous system, treat insomnia, reduce overexcitability, relieve headache spasms, and increase resistance to mental fatigue [7].

We offer the following recommendations for the prevention and treatment of memory loss in diseases of the central nervous system:

1) Take a spoonful of lavender flowers, put them in 200 g of boiling water and inhale;

2) Use of plant flowers in aromatherapy;

3) By preparing and consuming medicinal herbal tea from lavender flowers and leaves, a person can eliminate mental stress and prevent memory loss.

Currently, on the basis of this medicinal plant grown in the hot climate of Uzbekistan, in cooperation with "ZAYTUN MED GROUP" LLC, the production of a new medicinal food supplement "ASNABALI" has been launched. This product is produced on an industrial scale and contracts are being concluded to organize sales in pharmacies of our Republic.

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