DETERMINATION OF THE CONTENT AND STABILITY OF PHENOLIC COMPOUNDS IN THE EXTRACTS FROM THE LEAVES OF DANDELIUM OFFICINAL

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Currently, all relevant studies of the chemical composition of wild plants, one of which is dandelion medicinal (Taraxacum officinale) [1]. This perennial herb is characterized by high growth rate of the aboveground part and unpretentious to climatic conditions. The roots of dandelion are included in most Pharmacopoeia of the world, including the state Pharmacopoeia of the Republic of Belarus. They are used to treat diseases of the gastrointestinal tract. Accordingly, only the underground part is harvested, and the above-ground part is discarded [2]. However, in foreign medicine is widely used not only the roots but also the leaves of the plant. In some countries, such raw materials are used as an anti-inflammatory and immunomodulatory agent, as well as used in food.

Previously, studies were conducted, the results of which in the leaves of the dandelion of the drug was found the presence of biologically active substances with wound healing properties [3]. Therefore, extracts obtained from such inexpensive and affordable raw materials can be introduced into the composition of cosmetic products for the care of problem skin. One of the most popular and inexpensive cosmetic products is lotion. This cosmetic product is easy to make and use, it is applied to the skin without rubbing and acts directly on the epidermis. Lotion combines several functions of skin care: clean from dirt, moisturize dry areas, dry small inflammation. This multifunctional product is very convenient for oily skin care, as it is not recommended to overload it with cosmetics [4].

The aim is determination the amount of phenolic compounds in alcohol extracts from the leaves of the dandelion.

Material and methods. The object of the study was the leaves of dandelion medicinal collected in autumn 2018 on the territory of Vitebsk region. Harvesting of raw materials was carried out on a well – lit area, because light is one of the factors affecting the accumulation of flavonoids and phenolic compounds in the leaves.

Quantitative determination of the sum of phenolic compounds was carried out by the following method [5]. We prepared 2 series of extracts of 10 bottles in each. The optical density of the obtained extracts was measured at a wavelength of 720 nm on the day of preparation of the extraction and a week later. The content of the sum of phenolic compounds as a percentage (in terms of gallic acid) was calculated.

Findings and their discussion. Phenolic compounds contained in the leaves of the dandelion officinalis perform a number of vital functions. They

react with radioactive elements, accelerating their removal, and increases the rate of exchange processes. Also, these substances enhance the synthesis of collagen, therefore, increases the elasticity of the skin. Phenolic compounds have a number of actions on the skin: anti-inflammatory, bactericidal, antioxidant. In addition, they improve the structure of vascular walls, blood circulation and metabolic processes, protects hormones from oxidation-reduction reactions, promotes the fast healing of minor abrasions and crazing, dried acne. Consequently, the extraction of such affordable and inexpensive raw materials can be introduced into the cosmetic lotions used to care for oily and problem skin.

Table – Content of the sum of phenolic compounds in extracts from the leaves of in the leaves of *Taraxacum officinale*

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Extraction	Content of the sum of phenolic compounds, X %	
	Series 1	Series 2
Fresh extraction (05.10.2018 y.)	11,31±0,98	13,00±0,90
Week-long extracton (11.10.2018 y.)	8,36±1,13*	11,51±0,68

Note: * - p < 0.05 compared to the series 2

As can be seen from the table, the content of the sum of phenolic compounds is significantly higher in freshly prepared extracts than in extracts from a week ago (in series 1 by 1.35 times, in series 2 by 1.13 times). This is due to the fact that the phenolic compounds are unstable, enter into chemical reactions under the action of light and air oxygen. Consequently, the introduction of such extracts in lotions requires the use of preservatives, such as organic acids (citric, salicylic). In addition, these organic acids, along with vegetable lotion extraction, have anti-inflammatory, bactericidal, antioxidant effects. In addition, citric acid easily removes the keratinized layer of the epidermis, almost without damaging the lower layers of the skin (soft chemical peeling). Citric acid has bleaching properties, therefore, this lotion will be convenient for use in pregnant women, as in this period due to the restructuring of the hormonal background may occur not only small rashes on the skin, but also age spots.

Conclusion. In recent years, despite the large number of synthetic cosmetics, interest in herbal remedies is becoming more relevant. This is due to the low cost and availability of raw materials, as well as more rare and mild side effects. A lotion containing extract from the leaves of the dandelion can be used for skin care in adolescents, pregnant women, and patients undergoing long-term hormonal therapy, because of alterations in the endocrine system, this category of people has certain skin problems.

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CONTENTS OF LIPID EXCHANGE INDICATORS IN PULMONARY MOLUSKS DWELLING IN THE NATURAL RESERVOIRS OF THE VITEBSK AND GOMEL REGIONS

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Adverse environmental factors have a negative impact on all levels of biological organization: from molecular genetic to biogeocenotic. Therefore, an objective assessment of their consequences for organisms is possible only on the basis of an integral approach, which allows assessing changes in biosystems of different levels [1].

Lymnaea stagnalis and Planorbarius corneus are widespread types of pulmonary mollusks living in freshwater bodies of Eurasia, including Belarus. Pond crow and cornea are easily cultivated, representatives are not difficult to identify and therefore often serve as objects of environmental, physiological and biochemical studies [2].

The purpose of our research is to study the possibility of using indicators of pulmonary mollusc lipid metabolism for monitoring the state of natural water bodies.

Material and methods. The experiment was performed on 378 pulmonary freshwater mollusks of two kinds: 189 individuals of *Lymnaea stagnalis* (common pond snail) and 189 individuals of *Planorbarius corneus* (horn coil). Mollusks were collected in autumn (September-October) in the reservoirs of four districts of the Vitebsk region and three districts of the Gomel region (table 1). Each research subgroup contained 9 mollusks.