

In addition, there are representatives of the flora of the Caucasus (Georgian maple, Heart-shaped linden, etc.). There are no views of the South American, Australian and African continents. The average lifespan of the overwhelming majority of woody vegetation species exceeds a hundred-year mark.

Conclusion. Thus, the woody flora of the Pechersky forest park is represented by a different composition and in relation to environmental factors in different groups: deciduous species make up 82%, conifers – 18%; high breeds account for 50%, medium-height breeds – 27%, low breeds – 23%; fast-growing species account for 41%, moderate-growing trees – 36%, slow-growing trees – 23%; heliophytes make up 41%, facultative heliophytes – 54%, sciophytes – 5%; mesophytes make up 59%, hygromesophytes – 27%, xeromesophytes – 9%, mesoxerophytes – 5%; mesotrophs account for 50%, oligotrophs – 27%, megatrophs – 23%; gas-resistant rocks make up 82%, weakly gas-resistant – 18%.

1. Keys to higher plants of Belarus / Ed. V.I. Parfenov. – Minsk: Design PRO, 1999. – 472 p.
2. Kolesnikov, A.I. Decorative dendrology / A.I. Kolesnikov. – M.: Publishing house “Forest Industry”, 1974. – 704 p.

CONTENT OF VITAMINS C AND PP IN LEAVES *TARAXACUM OFFICINALE*

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Keywords: biologically active substances, vitamins, *Taraxacum officinale*, extract, cosmetics, pharmaceutical substances.

Currently, the demand for herbal preparations has increased significantly. Wild plants are sources for the production of drugs containing biologically active substances (BAS), such as alkaloids, flavonoids, essential oils and others. Common dandelion (*Taraxacum officinale*) is such a widespread plant.

The milky sap of the plant contains taraxacin and taraxacerol, 2–3% of rubber substances, and dandelion inflorescences and leaves – taraxanthin, flavoxanthin, vitamins C, A, B2, E, PP, choline, saponins, resins, salts of manganese, iron, calcium, phosphorus, up to 5% protein, which makes their nutritious foods. Dandelion roots contain triterpene compounds: taraxasterol, taraxerol, pseudotaraxasterol, β -amirin; sterols: β -sitosterol, stigmasterol, taraxol; carbohydrates: up to 40% inulin; fatty oil, which contains glycerides of palmitic, lemon balm, linoleic, oleic, cerotinic acids; rubber, proteins, mucus, resins, etc. In flower baskets and leaves found taraxanthin, flavoxanthin, lutein, triterpene alcohols, arnidiol, faradiol [1\$ 2].

The aim of the study is to determine the content of vitamins in alcoholic extracts from the leaves of *Taraxacum officinale*.

Material and methods. The experiment used plant material harvested and dried in October 2020, collected on the territory of the botanical garden in the area of the main building of the VSU named after P.M. Masherov, in the city of Vitebsk.

For extraction, 20.0 g of raw material was placed in a flask and poured in 100 cm³ of acetone, extraction was carried out in the cold, stirring constantly for 10–12 h, the extract was filtered off, the solvent was removed under vacuum, and the dry residue was dissolved in 100 cm³ of ethanol (solution **A**). 5 cm³ of solution **A** was brought to 25 cm³ with ethanol (solution **B**). To 2 cm³ of solution **B** was added 1 ml of a 1% alcoholic solution of sodium hydroxide and 0.3 cm³ of 2.6 - sodium dichlorophenolindophenolate, brought up to the mark of 10 cm³ with alcohol. The optical density of the resulting solution was measured after 10 min at a wavelength of 670 nm. The absorption maximum was determined experimentally from the spectrum of the reaction product in the visible region of light. In parallel, the optical density of a standard sample prepared in a similar way was determined. The percentage of vitamin (**X**) was calculated by the formula:

$$\chi = \frac{D_x \cdot C_{CT} \cdot V_1 \cdot V_3 \cdot 100 \cdot 100}{D_{CT} \cdot m \cdot V_2 \cdot (100 - W)}, \text{where}$$

D_x is the optical density of the test solution;

D_{st} is the optical density of the standard sample solution;

C_{st} is the content of a standard sample in 1 cm³ of solution;

V₁ is the volume of solution **A** in cm³;

V₂ is the volume of the aliquot taken from solution **A** in ml;

V₃ is the volume of solution **B** in cm³;

m is the mass of raw materials in grams;

W – loss in mass during drying of raw materials in %.

Findings and its discussion. Vitamin C has several functions as it participates in many important chemical reactions that are involved in protecting the body and keeping it functioning normally. It helps to reduce fatigue and aids in the normal functioning of the nervous system. It participates in the formation of collagen, a substance that protects the skin, bones, blood vessels, cartilage, teeth and gums, also in the restoration of vitamin E, and promotes wound healing. Vitamin C is involved in the synthesis of collagen, which is essential for the skin, ligaments, tendons, bones and blood vessels. It strengthens the walls of blood vessels, promotes wound healing and prevents inflammation [3].

The main function of vitamin PP is their participation in redox reactions. He is responsible for the full growth of tissues, the normal course of fat and carbohydrate metabolism. In addition, vitamin PP in its importance and effective-

ness is equivalent to drugs and is considered an element, without which the normal course of redox processes in the body is impossible [4].

The results of the studies on the detection of vitamins C, PP in the leaves of common dandelion are shown in the table.

Table – The amount of vitamins in the leaves of *Taraxacum officinale*.

Vitamins Gathering place	C (ascorbic acid) Mg	PP (nicotinic acid) mg
The territory of the botanical garden	0,2817±0,1358	0,0826±0,0263
The territory of the main building of the university	0,2302±0,0941	0,0652±0,0382

The table shows that the content of ascorbic acid in extracts from the leaves of *Taraxacum officinale* is higher than the content of nicotinic acid. More favorable conditions have been created on the territory of the botanical garden, therefore the content of vitamins is higher there.

Conclusion. The roots of the common dandelion are the pharmacopoeial raw material for the Republic of Belarus. When they are harvested, the leaves are discarded. However, due to the high content of vitamins C and PP in the leaves of common dandelion and other biologically active substances, they can be used in the creation of cosmetics and pharmaceutical substances.

1. Tolkunova, N.N. Investigation of the chemical composition of plant extracts / N.N. Tolkunova // Meat Industry. – 2003. – No. 12. – P. 30–31.
2. Big atlas of medicinal plants / N. Safonov. – M.: AST, 2018. – 340 p.
3. Horse, I. Ya. Vitamin C / I.Ya. Horse, S.G. Verinikina / Russian Chemical Encyclopedia / Ch. ed. I.L. Knunyants. – M., 1988. – T. 1. – S. 382–385.
4. Berezov, T.T. Biological chemistry / T.T. Berezov, B.F. Korovkin. – M.: Medicine, 1998. – 704 p.

ASSESSMENT OF VARIATION IN THE GEOLOGICAL ENVIRONMENT OF THE VITEBSK TERRITORY

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Keywords: technogenic changes, geological environment, state of the city's geosystem, degree of disturbance, confinement to functional-territorial zones, ecological functions of the geosystem.

The history of the development of the territory of Vitebsk is inevitably associated with technogenic changes in the structure and components of the natural environment. This is primarily due to changes in the lithogenic base or geological environment, which forms a set of ecological functions that determine