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CHEMICAL COMPOSITION AND MEDICINE USES OF THE PLANT TARÁXACUM OFFICINÁLE

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Abstract
This article This article provides information about the dandelion (Taráxacum officinále) plant and its chemical composition and medicinal use.

Key words
Taráxacum officinále, tocopherol, vitamin K, ascorbic acid, carbohydrate, cellulose, amino acid, potassium, phosphorus, magnesium, iron, calcium, zinc, bactericidal, antiseptic, antibacterial, immunity.

Theoretical part

It is known that the dandelion (Taráxacum officinále) plant, which is widely used in medicine and folk medicine, is called Taráxacum officinále and has the meaning of "soothing medicine". derived from the word [1].

Taráxacum is considered a perennial herb and belongs to the family of complex flowers. Medicinal plant species Taráxacum officinále is one of the most common plants in the forest-desert region, fields, gardens and roadsides. The medicinal plant Taráxacum officinále is a perennial herbaceous plant with an average stem height of 30 cm. a short stem is placed above the ground. The leaves of the medicinal dandelion are hairless, cut in the form of a bar or lanceolate, and are 10-25 cm long and 1.5-2 cm wide. The stem of the flower is cylindrical in shape, the inner part consists of a cavity, and bright yellow flowers up to 5 cm in diameter are placed at its tip. The fruit is gray-brown in color, and the seed in the form of a powder has a pod with a liquid color. The flowers of the medicinal plant Taráxacum officinále open in May-June, and in some cases it blooms in the fall, and its seeds are harvested in late May and early July (Fig. 1). [2-3].

Figure 1. Appearance of Taráxacum officinále plant and flower

The species of the medicinal dandelion (Taraxacum officinale) plant is widespread in Russia, the

chemical composition of its milky sap contains taraxacin and taraxatserin, 2-3% of rubber, and its flowers and leaves contain taraxanthin, flavoxanthin, vitamins - A, C , E, V2, RR, choline, saponins, tar, manganese, iron, calcium, potassium, phosphorus elements and up to 5% of protein by dry weight. The root of the medicinal plant Taráxacum officinále contains triterpene compounds - taraxasterol, taraxerol, pseudotaraxasterol, β-amyrin, as well as sterols - β-sitosterol, stigmasterin, taraxol, carbohydrates - up to 40% inulin (Fig. 1), fatty acids - palmitin, melissa, linolenic, olein, serotinic acid glycerides, rubber, proteins, tar and other substances have been found [4].

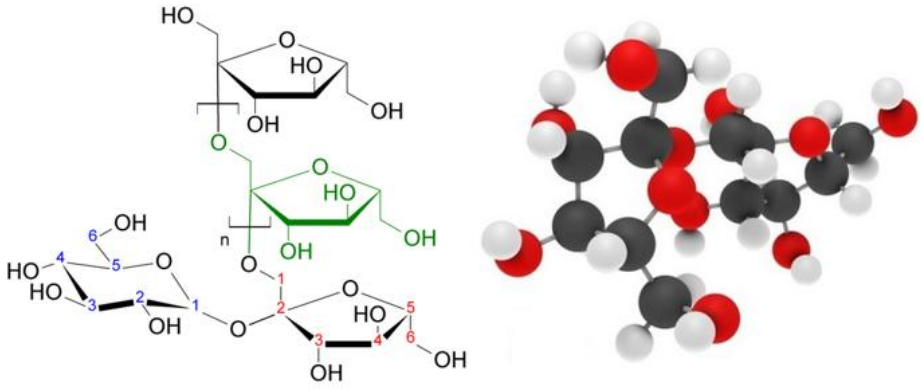

Figure 2. Inulin, $(C_6H_{10}O_5)_n$ -polysaccharide organic substance, D-fructose polymer.

Also, the presence of taraxanthin, flavoxanthin, lutein, triterpene alcohols, arnidiol, and faradiol in the flower baskets and leaves of the Taráxacum officinále plant has been determined. Dandelion roots, leaves, stems and juice are used as medicine. The leaves and sap of the plant are harvested in June, and the root is harvested in early spring and late fall. In early spring, bees collect honey from the nectar of dandelion flowers, and this honey is known to be high in sugar, protein, and fat. However, it has been noted that bees collect very little nectar from the flowers of Taráxacum officinále [5].

Medicinal dandelion plant tincture is used in medicine as a choleretic, antipyretic, relaxant, sedative, antispasmodic, weak sleep-inducing effect. It has been found that tincture made from the roots and leaves of Taráxacum officinále improves the digestive system, increases appetite, improves general metabolism, accelerates milk secretion in lactating women, and increases the general tone of the body. Dandelion porridge has been reported to have a laxative effect in colitis (inflammation of the large intestine). In chemical and pharmacological experiments, it was shown that the substances contained in the Taráxacum officinále plant have anti-tuberculosis, anti-virus, anti-diabetic, fungicidal, anthelmintic, and anticoncerogenic properties. In particular, the tincture of Taráxacum officinále plant is recommended for treating diabetes and anemia.

The dried root powder of Taráxacum officinále plant is used for the purpose of expelling various toxic substances from the body through urine, as well as for skin diseases and rheumatism. Medicinal dandelion tincture has been used in folk medicine for the treatment of hepatitis, cholecystitis, gallstones, gastritis (stomach ulcer), cystitis, as well as an appetite suppressant, improves digestion, and prevents constipation. used as a tool. The juice obtained from the fresh leaves of the Taráxacum officinále plant is used in the treatment of atherosclerosis, skin diseases, avitaminosis C and anemia. Tincture of all parts of the plant is used for the treatment of liver and gall bladder diseases, tumor diseases, stone accumulation diseases, and skin diseases (furunculosis, eczema).

In the practice of Chinese folk medicine, the tincture of the Taráxacum officinále plant has been used as an antipyretic, tonic, and appetite suppressant, as well as an antidote to snake venom, colds, and skin diseases. The tincture of the Taráxacum officinále plant has been found to have an effective therapeutic effect on skin diseases such as furunculosis and eczema. In addition, the tincture of the Taráxacum officinále plant is used in cases of body burns [1-5].

Discussion of results

Extraction of inulin from the root of the medicinal plant Taráxacum officinále. Organic substance belonging to the group of inulin-polysaccharides. D-fructose polymer. Its chemical composition is close to

starch, but it does not form a paste and does not stain with iodine. Chuchmal. Mol. m. 5000-6000. Peas, potatoes, sweet potatoes, etc. It is found mainly in underground parts of plants.

In order to extract inulin from the roots of the medicinal plant Taráxacum officinále, 100 g of the dried and crushed roots of the 2-3-year-old Taráxacum officinále plant were added to 300 ml of 70% ethyl alcohol and extracted for 70-72 hours, and the extraction was rapid. - was quickly shaken. At the end of the extraction, the inulin precipitated as a white solid in the dark biomass part (ground grass roots). The flask containing the extraction was thoroughly shaken to separate the precipitated inulin from the unwanted dark biomass part of the extraction. At this time, the inulin was completely mixed with the liquid part of the extraction, as a result, the liquid part of the extraction turned into a dark cream-colored mixture. In order to obtain this cream-colored dark mixture in its pure form, the biomass part of the extract (crushed sedge roots) was separated. In order to isolate the inulin contained in the cream-colored dark mixture obtained from the biomass part in its pure state, this cream-colored dark part of the extract was centrifuged. Centrifugation was continued for 10 minutes at 7000 rpm.

During the centrifugation of the cream-colored dark extract containing inulin, the inulin was completely separated from its contents and settled at the bottom of the centrifuge tubes. After the centrifugation process, the ready-made inulin that settled at the bottom of the vials was scraped and cleaned, and when it was dried, it weighed 2.629 g. This indicates that the content of technical inulin is 2.6%.

Conclusion

2.6% amount of inulin was obtained from the 2-3-year-old roots of the Taráxacum officinále plant.

References:

1. Kaden N.N., Terenteva N.N. Etymologicheskiy slovar latinxikh nazvaniy rasteniy, vstrechayushchixsya v okrestnostyax agrobiostansii MGU "CHashnikovo" / Pod editor. sugar Philol. associate professor V. I. Miroshenkovoy. M.: Izdatelstvo MGU, 1975. P. 151, 108
2. Merkulova V.A. Essay on the Russian national nomenclature of plants: herbs, mushrooms, berries. M.: Nauka, 1967. P. 101
3. Barabanov E.I. Botany: uchebnik dlya stud. higher three
4. V.S.Yagodka. Lekarstvennye rasteniya v dermatologii i kosmetologii. Kiev: Naukova dumka, 1991. 272s
5. Abrikosov X.N. i dr. Oduvanchik // Slovar-spravochnik pchelovoda / Sost. Fedosov N. F. M.: Selxozgiz, 1955. S. 223