

MEDICINAL VALUE OF CORNUS MAS L. AND FLAVONOID COMPOSITION OF FRUITS

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Abstract. *Kizil plant is one of the promising vitamin-rich medicinal plants being introduced in our country. Red is used in the food, pharmaceutical industry, as a decoration in folk medicine, and in the preparation of household items. It is widely used in medicine to prevent and treat many diseases. Therefore, it is important to study the chemical composition of these species.*

Keywords: *Cornus. mas L, healing, carbohydrate composition, fruits, food additives, folk medicine, pharmaceuticals.*

Introduction. One of the main requirements for the increase in the demand for medicinal plants and preparations obtained from them in medicine is the consumption and continuous use of chemical medicinal preparations obtained by synthesis, which leads to various pathological changes in the human body. Currently, the demand for herbal medicines and medicinal plants is increasing in developed countries. *Cornus mas L.* belongs to such medicinal plants.

Red is widely distributed in the regions of Central Asia, Crimea and the Caucasus, Central and Eastern Europe in the Russian states. Folk medicine has many useful properties. All parts of the red tree are a source of biologically active substances, which allows us to consider it as a valuable food and a medicinal plant that strengthens the immune system. Cranberry contains vitamin C, its fruits strengthen the immune system and increase the protective functions of the body, especially in common diseases, colds and flu, jam and tinctures made from crimson fruits have a great beneficial effect. However, scarlet is not only famous for its taste, but also helps to get rid of various diseases - Hippocrates mentioned in his works. Fresh and dried fruits can prevent diarrhea, diabetes (lowers blood sugar), lack of appetite, low enzyme activity of the pancreas, vitamin deficiency, anemia, gout, hypertension, and varicose veins [1].

It is a valuable food, medicinal, soil protecting and ornamental plant, with a wide range of ecological growth conditions, almost no damage from pests and diseases. Red is a source of biologically active substances, which allows it to be considered as a medicinal plant and serves as a raw material for the production of quality food products. Due to its scenic nature, it can be used in landscape construction and landscaping, as well as in the carpentry industry. Kizil has long visited the gardens of Versailles in Paris. [2].

The height of the red tree is from 3-4 meters to 10 meters. The diameter of old trees is usually 25-45 cm. Side branches are directed vertically upwards. The leaves are ovoid or elliptic in shape and reach up to 10 cm in length. They are located in a row on the branch [3]. The structure of the leaf is elongated, the tip is sharpened, and the leaf is covered with easy-to-break spines on both sides. When they come into contact with human skin, they can cause unpleasant itching (allergy). The flowers are light yellow in color and consist of 5-9 petals in an umbrella-shaped inflorescence equal to 1 cm, flowers are straight, 2-2.5 mm long (Fig. 1). Red contains biologically active substances: antioxidants, organic acids, di- and polysaccharides, and iridoids. In traditional medicine, red berries are used to treat fever, diarrhea, and kidney diseases. Clinical studies show

that red berries contain anti-inflammatory, antimicrobial active substances [4]. Biologically active compounds are found not only in fruits, but also in flowers, leaves, trunks and barks.



Figure 1. General view of flowers (A) and fruits (B) of *Cornus mas L*

These parts of the plant *Cornusmas L.* have been used for many years in folk medicine, especially in Asia. Studies have shown that *Cornusmas L.* is a good source of various bioactive hydrolyzable tannins and has high antioxidant activity [5]. *Cornus mas L.* leaf extract contains hydroxycinnamic acid derivatives, flavonols, ellagic-tannins, as well as iridoids and can show high antibacterial effect against gram-positive bacteria [6].

Research object and methods. Researches were carried out in the laboratory "Chemistry of proteins and peptides" of the Institute of Bioorganic Chemistry of the Federal Republic of Uzbekistan.

Samples of fruits of *Cornus mas L.* "Elegant" and "Svetlyachok" varieties were collected in different seasons of 2021. The collected samples were dried at room temperature.

Research results. In some types of corn, the content of fruits is 10% protein and 90% carbohydrates. Studies have shown that *Cornus mas L.* is a source of various bioactive hydrolyzable tannins and has high antioxidant properties [7].

Flavonoids are a widespread group of phenolic compounds. Flavonoids include several subgroups of compounds: flavones, flavonones, flavonols, chalcone, catechins, anthocyanins, and others. Most of them are present in plants in the form of glycosides or in a free state.

Flavonoids are present in almost all plants in various combinations and amounts. The therapeutic effect comes from their sum. They have a wide spectrum of pharmacological effects. This confirms that the identification of flavonoids in medicinal plants is important.

As a result of our research, the amount of important flavonoids (apigenin, luteinin, rutin, quercitin) in the fruits of *Cornus mas L.* "Elegant" and "Svetlyachok" varieties was determined (Table 1)

Table 1.

Flavonoid content of *Cornus mas L.* fruits

Flavonoids	Elegant	Svetlyachok
	Concentration mg/g	
Apigenin	0,364	0,68
Lyuteolin	1,8	0,24

Rutin	3,59	3,26
Kversitin	0,24	0,46

The amount of apigenin in fruits was the highest in "Svetlyachok" type, 0.68mg/g. On the contrary, the concentration of apigenin in "Elegant" fruits was 1.8 times lower.

In conclusion, *Cornus mas L.* is very important. Determination of flavonoids in medicinal plants and their quantitative indicators is of great practical importance. The flavonoid content of *Cornus mas L.* fruits was analyzed for the first time in our conditions.

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