

## Pharmaceutical Importance of Rose Hip in Medicine

*Muzaffarova Nigora Safarovna*

*Bukhara State Medical Institute named after Abu Ali ibn Sina*

**Abstract:** *Rosa cinnamomea* L., *R. canina* L., etc. A very common and very well-known plant. Rose hips grow throughout Central Asia. The plant was brought into cultivation. It is grown as an ornamental plant in public gardens, in vegetable gardens, and on specialized state farms. Rosehip flowers are used by the local population to make jams. Rose hips are used for food and medicinal purposes. More than 15 varieties of rose hips grow in Central Asia. All of them are the same in terms of treatment. You can harvest rose hips yourself. Rose hips can be purchased at any time in the pharmacy chain.

**Keywords:** rose hips, rose hip oil, ancient medicine, traditional medicine, *Rosa cinnamomea* L., *Rosa canina*, herbal medicine.

### Introduction

Rosehip is one of the famous medicinal plants. In ancient medicine, it was believed that rose hips opened blockages in internal organs and cleansed them. The smell of rosehip flowers strengthens the heart, brain, sensory organs, warms the brain, and cures cold nerves. It kills worms in the ear, helps with ringing in the ears, and is useful for toothache. Rose hips are applied to the forehead and it cures headaches.

In folk medicine, rose hips are used in the form of decoctions as a choleric and general tonic. It is drunk with honey for colds, hypertension, and liver diseases, as a diaphoretic. Rosehip petals are used to make jam, which is taken as a heart strengthener and sedative. A decoction of rosehip galls is used in the treatment of gastric ulcers, duodenal ulcers, malaria, and pulmonary tuberculosis.



**Fig.1. *Rosa canina***

### Chemical composition

Rosehip flowers contain essential oils, tannins, flavonoids - astrogallin, hyperoside [27]. The leaves of the plant contain up to 1.5% vitamin C. The roots of the plant contain organic acids, pectin substances, water-soluble polysaccharides, triterpene saponins, tannins, and amino acids [4]. A large amount of tannins has been identified in the root bark, roots, and leaves [14]. Rosehip galls consist of up to 80% tannins. Rose hips contain up to 15% vitamin C, provitamin A, vitamins K, P, E, pectins, citric acid,

sugars, pentosans, polysaccharides - galacuronic acid (45.5%), galactose (5.5%), arabinose (4.7%) [24-29]. Of the carotenoids, the largest amounts are p-carotene and lycopene [7-10]. Galactolipids have also been identified as having anti-inflammatory properties [48]. Rosehip meal contains polysaccharides, carboxylic acids, amino acids, flavonoids, carotenoids, and pectin substances [16-19]. Lipids are determined - oleic acid - 6.4-19.2%, linoleic acid - 19.7-45.8%, linolenic acid - 23.3-33.9% of the total fatty acids [17-21].

The seeds of the plant contain fatty oil, vitamin E. Seed oil consists mainly of linoleic, linoleic, oleic, stearic, and palmitic acids [30-36].

Decane, tetradecane, pentadecane, hexadecane, heptadecane, octadecane, nanodecane, heneicosane, tricosane, tetracosane, pentacosane, heptacosane, nanocosane, gentriacontane have been identified in the essential oil of rosehip flower petals [21-28].

Ancient medicine defined the nature of rose hips as hot and dry in the II degree. It opens blockages in internal organs and cleanses. The smell of rosehip flowers strengthens the heart, brain, sensory organs, warms the brain, and cures cold nerves. It kills worms in the ear, helps with ringing in the ears, and is useful for toothache. Rose hips are applied to the forehead and this cures headaches [1-6].

A decoction of rosehip branches and leaves is used for stomach pain and dysentery. A decoction of the roots of the plant is drunk as a strong diuretic for urolithiasis. Crushed rosehip seeds with alum are used externally to treat wounds. The branches of the plant are burned to produce a resin-like substance. This remedy is used to treat psoriasis locally.

Rosehip is one of the most studied medicinal plants. Its fruits are used as a source of vitamin C. Thanks to vitamin C and polyphenols, rose hips and leaves have a pronounced antioxidant and anti-inflammatory effect. Its positive effects have been noted in diseases of the liver and gall bladder. Rosehip preparations normalize the secretion of the gastrointestinal tract and have a sedative and hemostatic effect. A stimulating effect of rose hips on the secretion of the adrenal gland and thyroid gland has been noted. Rosehip preparations stimulate the immune system. In addition, antiarthritic, antitumor, diuretic and other properties of the plant have been identified. Rosehip oil is a known anti-inflammatory and wound healing agent.

Applying rosehip juice to your skin will protect you from the harmful effects of the sun. If you take 2.2 grams daily. Rosehip fruit will preserve sexual potency and prevent it from aging quickly. Jam from its flowers relaxes and treats heart palpitations. It is useful for tumors of the throat and tonsils. If you drink 18 g. wild rose hips will stop vomiting and calm hiccups [13-19].

Rubbing rosehip flower petals in a bathhouse eliminates the unpleasant smell of sweat. A decoction of rosehip galls treats stomach cancer. A bath in a decoction of galls helps with hemorrhoids, soothes pain and burning. Hippocrates used rose hips to treat gallbladder diseases. Dioscorides used it for stomach pain. Rosehip juice was used as a fixative and hemostatic agent. Ar-Razi wrote that rosehip leaves, in a dose of 10 grams, has a laxative effect [12-14].

Rose hips are very popular in modern folk medicine. Its fruits are consumed in the form of decoctions as a choleric and general tonic. Rose hips are drunk with honey for colds, hypertension, and liver diseases, as a diaphoretic. The local population of Central Asia makes jam from rosehip petals, which is taken as a heart strengthener and sedative. A decoction of rosehip galls is used in the treatment of gastric ulcers, duodenal ulcers, malaria, and pulmonary tuberculosis [20-24].

A decoction of rosehip branches and leaves is used for stomach pain and dysentery. A decoction of the roots of the plant is drunk as a strong diuretic for urolithiasis. Crushed rosehip seeds with alum are used externally to treat wounds. The branches of the plant are burned to produce a resin-like substance. This remedy is used locally to treat psoriasis [10-12].

In Russian folk medicine, a tincture of rose hips with vodka (1:10) is used to treat diarrhea. Rosehip liqueur (1 glass of fruits is infused in the sun with 1.5 glasses of sugar in 3 glasses of vodka, for 5 days) drink 15-20 grams after meals as an anticonvulsant and analgesic [16-20].

In Chinese folk medicine, rosehip roots are used as an anthelmintic.

In Tibetan folk medicine, rosehip flowers are used in the treatment of neurasthenia, atherosclerosis, and tuberculosis.

In Mongolian folk medicine, rose hips are used to treat headaches, dizziness, and burning skin.

In Bulgarian folk medicine, rosehip fruits and flowers are used as a choleric and sedative [11].

In modern scientific medicine, rose hips are also used very widely. First of all, its fruits are used as a source of vitamin C. 5-6 rose hips fully provide the daily dose of this vitamin. Thanks to vitamin C and polyphenols, rose hips and leaves have a pronounced antioxidant and anti-inflammatory effect [30-36].

Experimental studies have revealed the immunomodulatory properties of rosehip extract [28-30]. Rose hips have been successfully used to prevent morbidity among frequently ill children [26-28].

Its positive effects have been noted in diseases of the liver and gall bladder. Rosehip preparations normalize the secretion of the gastrointestinal tract and have a sedative and hemostatic effect [18].

Rosehip is widely used in the treatment of type 2 diabetes [40]. Rose hips have hypolipidemic and hypoglycemic effects in diabetes mellitus. Plant extracts inhibit the enzyme  $\alpha$ -amylase [44]. Long-term intake of rose hips prevents impairment of cognitive functions in patients with diabetes mellitus [39].

**Experimental studies** have shown that rose hip extracts inhibit the accumulation of lipids in white adipose tissue, increase the processes of fatty acid oxidation in the liver and skeletal muscle, thereby preventing the development of obesity [23-25].

*Randomized, placebo-controlled studies* have shown that taking rose hips for 12 weeks reduces abdominal fat and body mass index in patients prone to obesity, and prevents the development of obesity [12].

Clinical, randomized, controlled studies have shown that rosehip fruits and seeds improve the condition of patients with osteoarthritis. A collection consisting of rose hips, willow leaves and nettles has an anti-inflammatory, chondroprotective effect in osteoarthritis [23]. Meta-analysis and randomized clinical trials have shown that rosehip powder reduces pain in patients with osteoarthritis due to the presence of oleanic and ursolic acids. But, there are studies that have shown that at a dose of 10 g. per day, rosehip does not have an anti-inflammatory effect in rheumatoid arthritis [47]. The drug MA212 (Rosaxan) - extract of rose hips, nettle juice (*Urtica dioica* L.), extract of devil's claw leaves (*Harpagophytum procumbens* DC) has a therapeutic effect for gonarthrosis [31].

Quercetin isolated from rose hips inhibited melanogenesis activity in melanoma cells [42]. Extracts of rosehip leaves have an antiproliferative effect against leukemia and colon tumors [45]. Thanks to flavonoids and vitamin C, rosehip extracts have an antitumor effect.

A stimulating effect of rose hips on the secretion of the adrenal gland and thyroid gland has been noted. Rosehip preparations stimulate the immune system, and therefore it is advisable to prescribe them for infectious diseases [19].

The neuroprotective properties of rosehip extracts have been noted. Experimental studies have shown that taking a herbal mixture consisting of rose hips, tansy grass and nettle prevents memory impairment in Alzheimer's disease.

The drug "Setarud", consisting of extracts of rosehip pilaf, tansy herb and nettle with the addition of selenium, has pronounced neuroprotective properties [18].

Rosehip roots have a strong diuretic effect and are used for inflammatory diseases of the urinary tract and edema - [20, p.77]. Using experimental mice, it was determined that rosehip extracts reduce the risk of urinary stone formation [43]. Clinical studies have shown that taking rose hips prevents the development of infectious inflammation in the genitourinary system in women after cesarean section [6].

Experimental studies have revealed the renoprotective properties of rose hip extracts - 01apd121 [30]. Hot infusions of rose hips can be presented as a functional food for individuals with high urate levels, and as a therapeutic agent for hyperuremic patients [46]. Rosehip leaf extracts have antidiarrheal properties. Rose hip extracts prevent damage to liver tissue by methane tetrachloride. Oil extract of fruit pulp - "Karotolin" is used as a wound-healing, regenerating agent for cracks and abrasions. The medical industry produces rosehip-based preparations "Pevirak", dry extract from the fruit, "Holosas", and rosehip oil. "Holosas" is widely used as a choleric agent, especially in pediatric practice [15].

Rosehip oil is obtained by extracting the active substances, fruits and seeds of rose hips, with olive oil. This oil is in no way inferior to sea buckthorn oil in its properties. Rosehip oil has been successfully used in the clinic for the treatment of chronic periodontitis [2]. Rosehip oil can also be obtained at home. To do this, crushed fruits in a mortar (1 tablespoon) are poured with 1 glass of olive oil and left for two weeks in a dark place. This oil is used in microenemas (15 ml) in the treatment of ulcerative colitis. Experimental studies have shown the presence of pronounced reparative properties of rosehip oil [8]. Rosehip oil has pronounced gastroprotective properties.

Due to strong hemostatic properties, rosehip preparations are undesirable in cases of increased blood clotting. When taking rose hips, especially seeds, bloating is noted due to the formation of a large amount of gases. Therefore, it is recommended to take the fruits without seeds or in combination with carminatives [18]. Rose hips are widely used in the confectionery and meat and dairy industries [26].

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