



Rhodiola (lat. Rhodiola)

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Abstract. The article discusses the main properties of Rhodiola and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The chemical composition and nutritional value of the plant are indicated, the use of Rhodiola in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of Rhodiola on the human body under certain medical conditions and diseases are analyzed separately. The scientific foundations of diets with its application are considered.

Keywords: rhodiola, red brush, beneficial properties, potentially dangerous effects, side effects, beneficial properties, contraindications, diets

Beneficial features

What exactly is used and in what form

In folk recipes, in herbal medicine, rhizomes and the root of the red brush are used. In crushed and dried form, the roots are part of herbal tea, fees, are used to prepare decoctions, infusions. Red brush root extract is used as the basis for creating alcohol tinctures, phytosuppositories, herbal syrups.

Medicinal properties

Among the biologically active substances contained in the red brush: tannins of the pyrogallic group, anthraglycosides, essential oil, organic acids, sugars, proteins, fats, waxes, sterols, tertiary alcohols, phenols, tannins, glycosides (tyrosol, tricetin), flavonoids, volatile oils, tannins, trace elements - manganese, zinc, chromium, cobalt, copper, nickel, silver, molybdenum ^[3].

Does the red brush have indications for use? In folk medicine, Rhodiola fourfold is prescribed for prostatitis, prostate adenoma and diseases of the genitourinary system. A red brush is used in the complex treatment of neoplasms (tumors); as an adaptogen and as a means of rejuvenating the body ^[4].

The main medicinal properties of the red brush include: adaptogenic, immunostimulating, hemostatic, tonic. **The red brush is successfully used in gynecology** : red brush preparations are used in the treatment of endometriosis, fibroids. The main active component of *Rhodiola tetrafidus* is salidroside, which explains the medical potential of the plant in the complex therapy of cancer. The red brush has also been credited with being an anti-allergen ^[5].

In the treatment of diseases of the thyroid gland, adrenal glands and hormonal imbalance, the red brush has a positive effect. In complicated diseases of fungal, bacterial and viral etymology, the red brush is used as an additional therapy ^[3].

In official medicine

- **Phytocandles** with red brush extract. They give an anti-inflammatory effect in gynecological diseases. They are prescribed for hormonal disorders in women.
- **Herbal tea** "Red brush (*Rhodiola four-membered*)". The composition includes crushed roots and rhizomes of the plant.
- **Syrup** "Red brush". Herbal syrup with a restorative effect, also used as an additive in tea, drinks, confectionery.
- **Biologically active additive** "Red brush".
- **Drops** "Red brush" (water-alcohol extract of the root of the red brush).

In folk medicine

- **How to make red brush tea?** Pour a glass of boiling water over a teaspoon of crushed rhizomes of *Rhodiola four-fold*, let it brew for a quarter of an hour, strain. Drink 100 ml twice a day before meals.
- **In case of problems with conception**, a combined treatment with herbs of the red brush and boron uterus is prescribed. Tincture of the red brush and boron uterus is prepared according to the recipe: pour 25 g of red brush and boron uterus into 500 ml of vodka. Infusion withstand 2 weeks. Take a teaspoon, diluting in a small amount of water, three times a day, before meals. ^[6]
- **With reduced immunity, sexual impotence, male and female infertility, unstable menstrual cycle, polycystosis, mastopathy, hormonal imbalance, red brush decoction is recommended**. To prepare a decoction, pour a tablespoon of crushed red brush root into 0.3 liters of water, boil for about 5 minutes in a container under a closed lid, let it brew for an hour, strain and add boiled water until the volume increases to 0.3 liters. Drink 100 ml of decoction three times a day half an hour before meals, you can with a spoonful of honey.
- **The tincture of the red brush** is prepared as follows: add 0.5 liters of an alcohol solution with a strength of 40% to 50 g of crushed *Rhodiola* root. Insist in a dark place, in glassware, for a month, shaking from time to time. Strained tincture take 30-40 drops three times a day for half an hour before meals ^[7].

in oriental medicine

Plants of the genus *Rhodiola* have traditionally been used in China, Tibet, and Mongolia as natural adaptogens and antidepressants, anti-inflammatory and tonic agents. The red brush, long before the botanical description in official sources, was also actively used in the folk medicine of Altai, as part of all kinds of potions and decoctions.

In scientific research

For the first time, *Rhodiola* four-parted was described in the 18th century, during a scientific expedition initiated by the naturalist P. S. Pallas. N. Sokolov, a student and follower of the theories of Pallas, exploring the flora of the Altai char Sokhondo, collected a valuable herbarium. The representatives of the alpine flora included in the herbarium also included the red brush, later also called by Pallas "*Sedum quadrifidum*" (another synonym for *Rhodiola* four-parted).

At this stage, the red brush plant is being actively studied in the developments of modern medicine and biology.

In the field of experimental immunology, scientists E. Skopinskaya-Rozhevskaya, M. Buchavskaya and others analyzed the effect of *Rhodiola* tetrafidus extract on the circulatory system of mice ^[8].

The value of salidroside, the active substance contained in the red brush, is highlighted in the work of E. Skopinskaya-Rozhevskaya, M. Malinowski, A. Vasyutinski. It is salidroside (or rhodioloside) that is a natural oncoprotector and has an antitumor effect ^[9].

Rhodioloside isolated from *Rhodiola* tetrafidus is also the object of research by A. T. Troshchenko, G. A. Kutikova ^[10].

Phytochemical analysis of the extract of *Rhodiola* rosea and *Rhodiola* four-parted is the goal of the scientific work of H. Wiedenfeld, M. Malinowski, M. Furmanova et al. ^[11]

The use of cold *Rhodiola* in the complex treatment of breast cancer is described in a study by V.T. Loo, M. Wong et al. ^[12]

Biologically active substances of *Rhodiola* tetrafidus are studied in a scientific article by A.K. Boshkaeva, R.A. Omarova, A.L. Akhelova and others ^[3]

Dangerous properties of *Rhodiola* and contraindications

Does such a unique plant as a red brush have contraindications? First of all, the red brush is contraindicated for women during pregnancy and lactation, for individuals with individual intolerance to the constituents of the plant, suffering from high blood pressure.

It is also forbidden to take any hormonal drugs at the same time as the red brush, which itself is a phytohormone.

Botanical description

This is a perennial herb, a species of the genus ***Rhodiola***, ***Crassula*** family.

origin of name

Otherwise, the plant is called *Rhodiola* four-part, *Rhodiola* four-part, *Rhodiola* four-membered, *Rhodiola* four-cut, *Siberian ginseng*.

its popular name - "*red brush*" - because of the appearance of the root system, resembling a brush. And the generic definition of grass - ***Rhodiola*** (lat.) - translates as "*little rose*" and goes back to diminutive forms from the Greek word **rhodia** (or **rhodon**).

The red brush is a rare species, a representative of the flora of the Altai Mountains, which has unique healing properties. *Rhodiola* four-part is listed in the Red Book of Transbaikalia.

The red brush is a dioecious plant, from 8 to 15 cm high. Male and female flowers grow on different bushes. The method of pollination is cross. The root system is pivotal, numerous hollow and tubular stems ascending from the rhizome, densely leafy. Finely toothed and sessile leaves, rich green, turn red in autumn. The flowers are collected in corymbose inflorescences, the petals are yellow with a reddish border in the upper and outer parts. Red brush blooms in early summer. The fruit is a leaflet. Seeds ripen in late summer - autumn.

Grows in alpine regions, on rocks and screes, on rocky soils of mountain ranges, on alpine lawns, in mountain clefts. Grass rarely grows in the form of massive thickets, more often in small groups ^[1,2].

Growing conditions

The red brush is a plant that has adapted as much as possible to extreme climatic and environmental conditions (wind in the mountains, unstable temperature conditions). The root system of *Rhodiola* four-parted is powerful, the root is voluminous, going deep into the distance, sufficient to keep the plant in the moving high-mountain soil and extract water. The grass belongs to the so-called "cushion-shaped": the tops of frequent stems-shoots ascending from the rhizome grow at the same level, forming an "island". Old stems do not fall off, but remain on the plant for years, trapping fallen leaves, small particles of soil between themselves and, thus, provide protection to new stems and contribute to the active formation of adventitious roots. ^[1].

The roots and rhizomes of *Rhodiola* four-part are harvested on a small scale, in spring or autumn. The dug roots are cleaned from the ground, washed thoroughly, crushed and dried. Raw materials are stored in paper packaging, in a dark and dry place. The optimal shelf life is 2 years.

Literature

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Rhodiola - useful properties, composition and contraindications

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