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THE DO'LANA PLANT AND ITS MEDICINAL PROPERTIES

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Abstract: This article reviews the pharmaceutical and traditional medicinal uses of hawthorn (*Crataegus spp.*), its chemical composition, and therapeutic properties. Hawthorn is effective in cardiovascular diseases, atherosclerosis, neuroses, nervous system disorders, gastrointestinal and renal disorders. The composition of fruits, potential side effects, and precautions are also discussed.

Keywords: Hawthorn, *Crataegus*, cardiovascular diseases, atherosclerosis, neurosis, gastrointestinal tract, pharmaceuticals, extract, traditional medicine

Аннотация: В статье рассмотрено фармацевтическое и народное применение растения боярышник (*Crataegus spp.*), его химический состав и терапевтические свойства. Показано, что боярышник эффективен при сердечно-сосудистых заболеваниях, атеросклерозе, неврозах, нарушениях нервной системы, желудочно-кишечных и почечных заболеваниях. Также описан состав плодов, возможные побочные эффекты и меры предосторожности.

Ключевые слова: Боярышник, *Crataegus*, сердечно-сосудистые заболевания, атеросклероз, невроз, желудочно-кишечный тракт, фармацевтика, экстракт, народная медицина

Anotatsiya: Ushbu maqolada do'lana (*Crataegus spp.*) o'simligining farmatsevtik va xalq tabobatidagi qo'llanilishi, kimyoviy tarkibi va terapevtik xususiyatlari yoritilgan. Do'lana yurak-qon tomir kasalliklari, ateroskleroz, nevroz, asab tizimi buzilishlari, oshqozon-ichak va buyrak kasalliklarida samarali qo'llanilishi mumkinligi ko'rsatib o'tilgan. Shuningdek, mevaning foydali tarkibi, nojo'ya ta'siri va ehtiyot choralari ham keltirilgan.

Kalit so'zlar: Do'lana, *Crataegus*, yurak-qon tomir kasalliklari, ateroskleroz, nevroz, oshqozon-ichak, farmatsevtika, ekstrakt, xalq tabobati

Nowadays, in the pharmaceutical industry, infusions and other medicinal preparations are made from Do'lana flowers, and they are widely used for atherosclerosis, neurosis, nervous system disorders, and cardiovascular diseases. In addition, there is a saying among our people: "If you do not risk your life, how will you gain your beloved; if you do not climb the mountain, how will you find Do'lana?" This proverb contains many wise teachings and emphasizes the value and significance of Do'lana.

Indeed, Do'lana is distinguished not only by its fragrant and sweet fruits but also by its medicinal properties. The famous physician Abu Ali Ibn Sina, in his book *The Canon of*



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Medicine, describes Do'lana fruits as follows: "Its fruits are yellow and red, have an astringent effect, reduce bile, and stop diarrhea."

In modern medicine, Do'lana is used for the prevention and treatment of cardiovascular diseases, as a sedative for the nervous system, and as a blood pressure-lowering agent. Do'lana belongs to the Rosaceae family and can grow up to 5 meters tall. It is found in the mountainous regions of Uzbekistan. Several species of Do'lana exist in Uzbekistan. In particular, the yellow Do'lana (*Crataegus pontica* L.) is widespread and its fruits are consumed. In medicine, six species are commonly used for their fruits and flowers. The most widely used is the red Do'lana, known as Turkestan Do'lana (*Crataegus turkestanica*), whose leaves, flowers, and fruits have medicinal properties. Consuming just a handful of its fruits not only protects against hunger and thirst but also improves mood, energy, and endurance. For this reason, Do'lana is called "*gratas*" in Latin, meaning "strong."

The fruits of Do'lana contain 20% sugar, 8% fat, flavonoids, choline, acetylcholine, carotene, vitamin C, organic acids, and other beneficial substances. Some species grown in Uzbekistan also contain vitamins B1, B2, RR, S, and Ye. In traditional medicine, Do'lana is used for diarrhea, fatigue, mental exhaustion, insomnia, and nervous disorders. Additionally, it is considered beneficial for heart pain, menopause, rheumatism complications, atherosclerosis, high blood pressure, dizziness, and cough.

Useful recommendations about Do'lana: Even in modern medicine, the fruits, leaves, branches, and flowers of Do'lana are used. It serves as a preventive and therapeutic agent for cardiovascular diseases, a sedative, and a blood pressure-lowering remedy.

For joints: Do'lana extract is useful in treating arthritis and gout. It helps maintain proteins and collagen in the body, which protect joints from injury and support painless movement. Consuming Do'lana aids in the treatment and prevention of these conditions.

For cardiovascular system: Its extract can help alleviate heart failure, chest pain, arrhythmias, lower blood pressure, combat atherosclerosis, and reduce cholesterol levels. Do'lana also dilates blood vessels, improving circulation.

For the nervous system: The enzymes in Do'lana influence hormones in the body, helping to overcome depression, chronic fatigue, and nervous disorders. Do'lana extract reduces anxiety and has been used for many years as a natural sedative. It alleviates insomnia and nervousness, enhancing overall body function.

For the digestive system: Organic compounds and fibers in Do'lana interact with gut microflora and improve its function. It also aids in digestion, breaking down food in the stomach, accelerating metabolism, softening stools, and relieving spasms and bloating. Additionally, Do'lana helps fight intestinal infections and can eliminate tapeworms and other parasitic worms.

For kidneys and urinary tract: Do'lana is classified as a diuretic and helps the body eliminate excess fluid. It stimulates kidney function and increases the excretion of salts in the urine. It is beneficial for treating kidney diseases and improving bladder function.



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For the skin: Due to its antioxidant content, Do'lane is used to treat wounds, eczema, psoriasis, and burn injuries. It reduces inflammation and itching and promotes faster healing of wounds. In elderly people, it helps prevent the appearance of age-related spots and wrinkles. For the immune system: Do'lane helps eliminate toxins from the body. Its vitamin C content activates leukocytes and strengthens the immune system. However, the fruit may have side effects, and there are certain situations in which Do'lane should not be consumed.

- To be used together with medications intended for the treatment of heart diseases.
- Before and after surgical procedures.
- Do'lane should not be consumed on an empty stomach, as it can cause intestinal spasms and lead to vomiting.
- Drinking cold water immediately after consuming this fruit is also harmful, as it can cause stomach and intestinal cramps.
- Excessive consumption of it can harm the kidneys, weaken the digestive system, and cause colitis, nausea, and vomiting.

Beneficial Properties of Do'lane: Do'lane tincture, including its alcoholic extract, is recommended by doctors for patients with angioneurosis (vascular neurosis, functional vascular disorders), impaired heart function, high blood pressure, and weakened heart due to infectious diseases. Do'lane is also an ingredient in the cardiovalen preparation. Fruit-based preparations improve the contraction of the heart muscles, reduce their irritability, and lower cholesterol levels in the blood. Recent studies suggest that Do'lane preparations may also be effective in treating atherosclerosis (thickening of the artery walls and loss of elasticity) (Jafarov, 1965). Additionally, Do'lane preparations have been reported to enhance the function of the mammary glands (Guseynov, 1961).

The fruit of the yellow Do'lane (*Crataegus pontica C.Koch.*) is edible. Do'lane propagates by seeds. Before sowing, the seeds need to be stratified, that is, treated appropriately. It can also propagate through root suckers and cuttings. It can be used as a rootstock for grafting, and apples, pears, or quinces can be grafted onto it. The fruit is a five-sided small apple, flame-colored, about 1.7 cm wide. The root system is located within a 50–60 cm soil layer and spreads 5–10 meters from the tree trunk. The root system is 15 times wider than the crown of the tree.

The yellow Do'lane (*Crataegus pontica C.Koch.*) tree and its fruit.

The yellow Do'lane is drought-resistant and can grow individually or sometimes form small Do'lane groves on dry mountain slopes. In its first years, it grows slowly and primarily propagates by seeds.

Turkestan or Red Do'lane (*Crataegus turkestanica Pojark.*): The range of this Do'lane species includes the Tien Shan, Pamir, Alay, and Kopet Dag regions. It naturally grows mainly on rocky mountain slopes, in valley bottoms, at altitudes up to 2000 meters above sea level. In the wild, the tree can reach up to 8 meters in height. Its trunk bark and branches are dark gray. Branch thorns are up to 1.5 mm long and sparsely spaced. The



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leaves on the tree grow in two types of flowering branches: on reproductive branches, they are diamond-shaped; on growing branches, they are broader and three-lobed. It blooms in April. The first flowering occurs in trees aged 5–8 years. The flowers are semi-umbellate and white in color. The fruit ripens in October, is ovoid with a diameter of up to 12 mm, red, shiny, with a yellowish tint, inedible pulp, and contains a single seed.

Turkestan or Red Do'lana (*Crataegus turkestanica* Pojark.) tree and its fruit:

From the first to the fifth year, it grows slowly. It reaches its maximum height at 30–60 years of age. The root system is very well developed, with horizontal roots extending up to 8–10 meters. This characteristic makes Do'lana widely planted in mountain forestry and land reclamation to stabilize slopes prone to erosion and washing.

Do'lana is one of the beneficial fruits in the world and has positive effects on the following conditions:

- Diarrhea;
- Heart pain;
- Insomnia and nervous disorders;
- High blood pressure;
- Atherosclerosis and neurosis;
- Rheumocarditis resulting from rheumatism;
- Cough;
- Cardiovascular diseases;
- Gynecological disorders, used as a remedy during menopause.

Consuming just a handful of Do'lana fruit not only protects a person from thirst and hunger throughout the day but also improves mood, endurance, and energy. For this reason, it is called “*gratas*” in Latin, meaning “strong.”

Unfortunately, despite its benefits, the fruit also has some harmful effects. Do'lana should not be consumed on an empty stomach, as it can cause intestinal spasms and vomiting. Cold water should not be drunk immediately after consuming the fruit, as it may cause stomach and intestinal cramps. Excessive consumption can also damage the kidneys, weaken the digestive system, and lead to colitis, nausea, and vomiting.

The use of Do'lana in the form of decoctions, infusions, syrups, and other medicinal preparations should only be carried out under the guidance and supervision of a doctor.

In conclusion, Do'lana should not be consumed on an empty stomach, as it can cause intestinal spasms and vomiting. Cold water should not be drunk immediately after consuming the fruit, as it may lead to stomach and intestinal cramps. Excessive consumption of Do'lana can also damage the kidneys, weaken the digestive system, and cause colitis, nausea, and vomiting. Decoctions, infusions, syrups, and other preparations made from the fruit should only be used based on a doctor's recommendation and under their supervision.

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