

# THE MEDICINAL PROPERTIES OF THE DOCK PLANT BELONGING TO THE POLYGONACEAE FAMILY

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**Abstract:** Dock is a group of annual and perennial plants belonging to the Polygonaceae family. There are 16 species of dock in Uzbekistan. These include cultivated Dock, Curly Dock (*R. crispus* L.), Red Dock (*R. conglomerates* Murr.), Syrian Dock (*R. syriacus* Meisn.), and Drobov's Dock (*R. drobovii* Korov.). The root is a taproot, thick, and the stem is multi-angular and segmented with a hairy upper part. The basal leaves are long-stalked, the leaf blades are triangular, lanceolate or broad-arrow-shaped, while the stem leaves are elongated-lanceolate and arranged alternately in segments. The flowers are unisexual, small, and form racemose inflorescences. It blooms from May to September and produces three-angled nut-like fruits. The plant grows in damp places, meadows, and mountain slopes. In medicine, the root of dock, as well as the curly and common docks, are used. Dock is rich in vitamins such as S, C, and others, and is used as food. Dock and sycamore leaves are large plants.

**Keywords:** Rumex, Polygonaceae family, curly dock, taproot, unisexual, 16 species, large leaf surface.

**Introduction:** Currently, the demand for natural medicinal plants is increasing worldwide. Given this, it is necessary to study the properties of each herb and create plantations to multiply them and organize a high-quality medicinal plant raw material reserve for human benefits.

**Medicinal Benefits: Anti-inflammatory:** Dock plant extracts help reduce inflammation, making it beneficial for treating conditions such as arthritis, gout, and muscle pain. Its compounds can alleviate swelling and discomfort in the joints, enhancing mobility and quality of life. **Digestive Health:** The roots of the dock plant are known for their mild laxative effects, making them useful in relieving constipation. Dock also promotes healthy digestion by stimulating the liver, improving bile production, and encouraging regular bowel movements. It has been traditionally used to treat indigestion and bloating. **Detoxification:** Dock is often used as a blood purifier and liver detoxifier. It helps to eliminate toxins from the body and supports the body's natural detox processes, promoting overall health and vitality. Regular use may also contribute to clearer skin and improved energy levels.

**Skin Health:** The plant has long been used topically for treating skin conditions such as eczema, psoriasis, acne, and rashes. The leaves and roots are believed to have soothing properties that reduce redness, itching, and inflammation. Dock is also used in poultices to heal wounds and burns. **Antioxidant:** Dock is rich in vitamins like vitamin C, and other antioxidants such as flavonoids, which help to neutralize harmful free radicals in the body. This antioxidant action supports overall cellular health and helps protect against oxidative damage that could lead to chronic conditions. **Antimicrobial:** The plant contains compounds that exhibit natural antimicrobial properties, which make it useful for preventing and treating infections. The roots

and leaves of dock have been used in traditional medicine to help heal minor cuts, wounds, and skin infections. **Blood Circulation and Cardiovascular Health:** Dock is believed to enhance blood circulation and promote cardiovascular health. It can be used to help manage high blood pressure and improve heart function due to its ability to strengthen blood vessels and enhance blood flow. **Nutritional Benefits:** Dock is an excellent source of vitamins A, C, and B-complex vitamins, as well as minerals like iron, magnesium, and calcium. These nutrients are essential for maintaining immune function, bone health, and overall metabolic processes. Consuming the plant as part of a balanced diet can contribute to general well-being.

**Preparation Methods: Infusions:** Leaves and roots can be used to make herbal infusions that are helpful for digestive support and detoxification. Simply steep the dried plant parts in hot water for about 10–15 minutes. **Tinctures and Extracts:** Concentrated tinctures or alcohol-based extracts of the dock root are used to enhance liver function, cleanse the blood, and relieve constipation. **Poultices:** Fresh leaves or powdered root can be mixed with water and applied topically to treat skin irritations, wounds, or inflammation.

**Nutritional Content:** Dock is packed with essential vitamins and minerals, including vitamin C (important for immune health), vitamin A (important for skin and vision health), and several B vitamins (important for energy production and cellular health). Rich in fiber, dock promotes digestive health and can help regulate bowel movement

**Considerations and Side Effects: Oxalates:** Dock contains oxalates, compounds that can contribute to kidney stone formation in susceptible individuals. It's important to use dock in moderation, especially for those with a history of kidney stones. **Pregnancy:** Due to its powerful medicinal effects, dock should be used with caution during pregnancy and breastfeeding. It is always best to consult with a healthcare provider before using herbal remedies during these times. **Allergic Reactions:** Some individuals may experience allergic reactions to dock, especially if they are sensitive to plants in the *Polygonaceae* family. Always perform a patch test before using dock topically.

**Types of Dock Plants: Curly Dock (*Rumex crispus*):** This species is known for its rich content of tannins and its ability to support digestion and detoxification. It is often used for its mild laxative properties and is a key ingredient in traditional herbal detox formulas. **Common Dock (*Rumex obtusifolius*):** Common dock has been traditionally used to treat inflammatory conditions and purify the blood. It is often found in herbal preparations aimed at reducing swelling and detoxifying the body. **Red Dock (*Rumex sanguineus*):** Known for its antioxidant properties, red dock is used for its skin-healing abilities and to improve circulation. It is also considered beneficial for digestive health.

**Cultural and Folk Uses: Culinary:** The young, tender leaves of dock are edible and can be used in salads or soups. They have a tangy flavor and are a good source of nutrients like vitamin C and iron. The leaves are best harvested early in the season before they become too tough.

**Folk Medicine:** Dock has a long history of use in folk medicine. It has been used to treat various ailments, such as anemia, constipation, arthritis, and skin diseases, often in the form of teas, poultices, and tinctures.

**Plant Description:** The dock plant belongs to the Polygonaceae family. The Polygonaceae family includes herbaceous, shrub, and semi-shrub plants of the dicotyledon class. Their leaves are arranged alternately with smooth edges. The flowers are mostly unisexual, sometimes bisexual, small, and form spike-like or racemose inflorescences. The calyx is 3–6 parts, sometimes with one or two layers. The stamens range from 3 to 9, and the pistils have 2 to 4

styles. The fruit is a three-angled nut-like structure. There are about 30–35 genera, with approximately 1000 species known. In Central Asia, 7 species are found. All species contain tannins (such as in toron, dock, and rovoch). In Uzbekistan, there are 16 species of dock.

Dock is a plant that is primarily found in North America. It has many species, but the most famous ones are *Echinacea purpurea*, *Echinacea angustifolia*, and *Echinacea pallida*. Dock is commonly used as a medicinal plant, especially known for its beneficial properties in strengthening the immune system. Like other greens, it contains small amounts of protein and carbohydrates, with almost no fat, but this does not mean it is used as a food product. In the spring, dock is one of the first plants to grow, providing an early source of vitamins and minerals that the body needs after winter.

**Chemical Composition:** The plant contains silicon dioxide (about 25%), organic acids, proteins (about 16%), carotene (about 4.7%), copper, calcium, and vitamin C (0.19%), among others. The sour composition of dock includes macroelements like calcium, potassium, magnesium, sodium, sulfur, phosphorus, and chlorine. The microelements include iron, iodine, manganese, copper, zinc, and fluorine. The plant is rich in the following vitamins: A, B1, B2, B3/PP, B5, B9 (folic acid), C, E, K (phylloquinone), and H (biotin).

**Medicinal Preparations:** The root decoction and powder are used to treat dysentery, colitis, enterocolitis, and other intestinal disorders. Dock preparations have constipation-relieving properties in small doses and laxative effects in larger doses.

**Usage:** The aerial parts, roots, and seeds of the plant, as well as the branches, are used to prepare medicinal products. The most beneficial part of the dock is its root, which contains the highest amount of nutritional compounds. The seeds are harvested after they are fully ripe.

**Harvesting Method and Application:** The aerial parts, seeds, and leaves are collected from April to May. The underground part (the root) is harvested in autumn, when the leaves and stems are dry or undeveloped, i.e., in early spring. Raw materials are dried in the shade, away from direct sunlight, preferably under a canopy. After drying, they are ground and stored in dry glass containers or clean canvas bags.

**Conclusion:** In conclusion, the demand for natural raw materials is increasing, and there is sufficient need for the medicinal plant dock. Its distinctive, fragrant flowers and its beneficial properties are being used in food (as a spice), cosmetics, folk medicine, and official pharmacology to prepare a wide range of medicines.

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