

Native American Botanics

Burdock - Food and Traditional Medicine

Scientific Name

Arctium lappa
Arctium majus

Botanical Family

Asteraceae

Common Names

Burdock, Lappa

Plant Parts Used

Roots (rhizome), leaf



Overview

Burdock root has been a revered by both English and Native American herbalists for centuries. While English herbalists have long used burdock root to treat boils, scurvy, and rheumatism, Native Americans used it as a tonic, blood purifier, and remedy for skin ailments. For the past 200 years, American herbalists have made it a mainstay in their pharmacopeia. Today, burdock root is still widely touted by herbalists for its benefits as an anti-inflammatory therapy in treating arthritis, gout, and related inflammatory conditions.

Botanical Description

Burdock (*Arctium lappa*) is a biennial common weed indigenous to Eurasia but now widespread throughout the United States. This stout, dull pale-green plant bears multiple spreading branches. It grows 3 to 4 feet in height, flourishing in well-drained soils. Burdock forms a rosette of large leaves in the first year, and then develops a tall flower stalk with thistle-like flowers in the second year. The deep taproots are harvested at the end of the first growing season and then air-dried.

Chemical Constituents

Sesquiterpene lactones; polyynes (mainly trideca-1,11-dien-3,5,7,9-tetraen); caffeic acid derivatives (including chlorogenic acid, isochlorogenic acid); carbohydrates (45-50% inulin [fructosan], mucilages) volatile oil of complex composition (phenylacetaldehyde, benzaldehyde, 2-alkyl-3-methoxy-pyrazines); phytosterols, tannins.

Medicinal Uses

Traditional Uses (Root): rheumatism, gout, skin disorders, pulmonary catarrh (inflammation of mucous membranes), scurvy, venereal eruptions, psoriasis; (Root and Seed Combinations) : tonic, kidney disease; (Leaf): used externally for skin problems, applied to forehead or soles for fever; used internally as depurative (cleanser) and mild diuretic.

Clinical Applications:: rheumatism, gout, skin eruptions, diuretic, cystitis, anorexia nervosa (appetite stimulating activity). Gastrointestinal disorders, diaphoretic (to promote sweating); used externally for ichthyosis (rough, scaly skin conditions), psoriasis.

Pharmacological and Clinical Findings

In *in vitro* studies, the root of *Arctium lappa* has shown antibacterial activity against Gram-negative strain. Leaf and flower extracts have produced anti-bacterial effects against both Gram-negative and Gram-positive strains. The roots and leaves also exhibit antifurunculous activity against furuncles (boils). In another *in vitro* study, burdock lessened mutagenicity caused by *Salmonella* toxins and their active mutagens. The root of *A. lappa* also exhibits anti-inflammatory and free radical scavenge effects.

In one study, burdock extract reportedly resulted in a prolonged decrease in blood-sugar concentration accompanied by a rise in carbohydrate tolerance. However, the evidence for the hypoglycemic effects of burdock is inconsistent. *Arctium majus*, a related species of burdock, had anti-tumor activity *in vivo*. Non-aqueous soluble fractions of *A. majus* produced up to 61% inhibition of EA and Yoshima sarcoma in mice.

Burdock appeared to inhibit the onset of chemically-induced carcinogenesis by inhibiting the formation of DMBA-induced aberrant metaphase cells (excluding cells with gaps). DMBA produces chromosome aberrations by causing gaps and breaks rather than chromosomal exchanges.

A recent animal study suggests that *A. lappa* may protect the liver against damage caused by chronic ethanol consumption and potentiated by carbon tetrachloride. Burdock extract significantly improved several pathological and biochemical parameters in a treatment group of rats as compared to the control group. The hepatoprotective activity may be linked partly to the plant's antioxidative properties which reduce the oxidative stress of the liver cells (hepatocytes). In a similar study, *A. lappa* protected the liver cells from injury caused by acetaminophen as well as carbon tetrachloride.

Dosage Ranges and Duration of Administration

Dried root: 2 - 6 g or by infusion 3 times per day.

Safety

Burdock is safe for healthy persons when taken as directed.

Side Effects

Side effects are generally rare when taken in recommended doses. Adverse side effects have been reported for an isolated case of a patient taking burdock. However, experts eventually concluded that the adverse reaction in this case was not due to burdock, but instead to contamination from solanaceous alkaloids (probably from belladonna leaf). Burdock root obtained from reputable companies that comply with Good Manufacturing Practices is safe and free of side effects.

Warnings/Contraindications/Precautions

There are no known risks of using burdock when taken in recommended doses in healthy individuals. However, excessive amounts of this plant should be avoided. Pregnant and lactating women should not consume burdock because its uterine stimulant effects can induce abortion. Individuals taking anti-diabetic medications should not take excessive amounts of burdock; Diabetics are advised to consult with a qualified health care provider before using this plant. Also, care should be used when touching burdock root material because skin contact with the root may cause contact dermatitis.

Interactions

Excessive dosages of burdock may interfere with hypoglycemic medications used to treat diabetes.

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