

Expert Herbal Reality Resource

Artichoke

Names

Botanical Name *Cynara scolymus* L

Family: *Asteraceae*

Common names: Globe artichoke, French artichoke, Cynara (Engl), Artischocke (Ger), artichaut (Fr), artichiocco, carciofo (Ital)

Alternate botanical names: *Cynara cardunculus* var. *scolymus* L



Description

Globe artichoke is in the same tribe within the Asteraceae (formerly Compositae) as the milk thistle *Silybum marianum*, and is a cultivated hybrid of a thistle, probably *Cynara cardunculus* L. It is a herbaceous plant which produces stems of 1m or more in length. The basal, lobate-bipinnatisect leaves are very large, the stem leaves may be pinnatisect or entire. The inflorescence is formed of purplish-blue flowers grouped in heads which have an involucre of several long bracts which may be spiny. The fruit is an oval achene with a plumed pappus (tuft of bristles).

Constituents

- Sesquiterpene lactones (0.5 to 6%), including bitter cynaropicrin (40 to 80% of the total), and sesquiterpene glycosides cynarascolosides A, B and C
- Caffeic acid derivatives (polyphenols): chlorogenic acid (3-caffeoylquinic acid), cynarin (1,3-dicaffeoylquinic acid), and many other dicaffeoylquinic acid derivatives
- Flavonoids (mainly glycosides of luteolin)

Traditional use

The medicinal properties of artichoke have been known since antiquity, and it was particularly prized in the 16th to 19th centuries. It enjoyed a revival in the 20th century particularly in France. Here it fitted well with a cultural view that liver burdens are a core to ill-health, with many conditions being considered a liver crisis ('crise de foie'). Artichoke was widely considered one of the most effective detox remedies, in conditions that in English might be characterised as 'liverish', to include gallbladder and biliary problems, nausea, and difficulty in managing fats and alcohol. Skin problems were often linked with this range of causes and were also treated with artichoke leaf. It was an established medicine for jaundice and hepatitis.

19th century Eclectic physicians in the USA used artichoke as a blood cleanser (depurative) for the treatment of rheumatism, gout, as well as jaundice. They also valued its diuretic properties and applied it to oedematous conditions, low urine production (oliguria) and urinary stones.

Traditional actions

Traditional Ayurvedic characteristics are

Rasa (taste) Bitter, astringent, sweet.

Virya (action) Heating.

Vipaka (post-digestive effect) Sweet.

Guna (quality) Light, unctuous.

Dosha effect reduces excessive *vata* and *kapha*.

Dhatu (tissue) Blood, muscle, fat, bone, nerve, reproductive.

Srota (channel) Reproductive, nervous, respiratory.

What practitioners say

Artichoke leaf is similar in its properties to dandelion root, with some variations of its own, and the two make a very effective double act.

- **Liver and bile:** artichoke is a first choice for flushing bile from the liver through the bowel. Patients often report that their stool become transiently more yellow after taking the remedy. It appears to work without any strain on liver function and can be used to relieve symptoms of liver stress, such as intolerance to fats and alcohol, or for biliary problems like gallstones or gallbladder inflammation. The impression is that artichoke is diluting the bile, reducing its concentration and aiding its elimination through the bowel. As bile is meant to be eliminated (and with slower bowel transit times in modern society may be less so than in the past) this can be an important detoxification aid. The early observation of more nitrogen waste elimination through the urine reinforces this observation.
- **Digestion:** artichoke is an effective gentle bitter digestive remedy that can relieve many symptoms of upset digestion, notably nausea and vomiting (especially associated with rich, fatty food and alcohol – see above), constipation (possibly by increasing the natural laxative effect of bile), flatulence, bloating and other symptoms of IBS (irritable bowel syndrome). As a bitter it is also cooling and is appropriate for traditional ‘damp-heat’ patterns accompanied by yellow coating on the tongue, signs of liver distress, perhaps of inflammatory bowel problems, intolerance to heat and humidity. It has achieved much popularity as an ‘after party’ supplement especially to combat hangover and other symptoms of over-indulgence.
- **Metabolic and inflammatory:** artichoke is a prime remedy for ‘metabolic syndrome’ or pre-diabetes: the combination of insulin resistance, high blood fat and cholesterol levels, and higher BMI (body-mass index). To be effective it should be taken as a supplement over a long period.





Evidence

Artichoke leaf attracted research interest in Europe in the 1930s and these studies demonstrated the choleric (increased bile flow from the liver) and diuretic activity of the leaves. Further research at the time added effect on cholesterol levels and showed that all these activities were accompanied by an increase in urea and other nitrogen-containing substances in the urine.

More recent studies have focused on the effect of artichoke on both blood lipids and blood sugar control. Artichoke leaf extract has been demonstrated to reduce insulin resistance, an effect modulated by a defined single nucleotide

polymorphism (SNP) that predisposes to metabolic syndrome.ⁱ The same supplementation resulted in a statistically significant decrease in serum triglyceride level in women with metabolic syndrome.ⁱⁱ In a separate placebo-controlled study on 55 overweight subjects a proprietary artichoke extract significantly decrease fasting blood glucose levels and other markers of insulin resistance and metabolic syndrome.ⁱⁱⁱ In a separate study on 46 overweight subjects the same team showed significantly enhanced HDL levels and lowered total cholesterol and LDL levels.^{iv} This observation was supported in a British study that showed that, compared with placebo, an extract of artichoke significantly reduced total cholesterol levels in hypercholesterolaemic subjects.^v A small controlled trial showed that artichoke could reduce markers of endothelial dysfunction (such as flow-mediated vasodilation and humoral markers VCAM-1 and ICAM-1) seen in people with raised lipid and cholesterol levels.^{vi} A review of the evidence for the effect of artichoke on cholesterol and lipid levels suggested that its components luteolin and chlorogenic acid could play a key role.^{vii}

In a large study artichoke leaf extract was shown to significantly reduce symptoms of functional dyspepsia (indigestion) compared to placebo,^{viii} a conclusion reached in an earlier larger open study by other researchers.^{ix}

In a pilot trial a water extract of artichoke leaf demonstrated reduced the viral load of hepatitis C to below the detection level in 12 out of 15 patients. Furthermore, the liver enzymes ALT and AST, as well as the level of bilirubin were normalized. There was also inhibition of a number of CYP450 enzymes.^x

Safety

No adverse effects are expected.

Dosage

2-5 g of dried leaf per day or in equivalent preparations. Higher regular doses (up to 9g equivalent in the form of concentrated extracts) are needed significantly to reduce cholesterol levels.

References

- i Ebrahimi-Mameghani M, Asghari-Jafarabadi M, Rezazadeh K. (2018) TCF7L2-rs7903146 polymorphism modulates the effect of artichoke leaf extract supplementation on insulin resistance in metabolic syndrome: a randomized, double-blind, placebo-controlled trial. *J Integr Med.* 16(5): 329–334
- ii Rezazadeh K, Rahmati-Yamchi M, Mohammadnejad L, et al (2018). Effects of artichoke leaf extract supplementation on metabolic parameters in women with metabolic syndrome: Influence of TCF7L2-rs7903146 and FTO-rs9939609 polymorphisms. *Phytother Res.* 32(1): 84–93
- iii Rondanelli M, Opizzi A, Faliva M, et al. (2014) Metabolic management in overweight subjects with naive impaired fasting glycaemia by means of a highly standardized extract from *Cynara scolymus*: a double-blind, placebo-controlled, randomized clinical trial. *Phytother Res.* 28(1): 33–41
- iv Rondanelli M, Giacosa A, Opizzi A, et al. (2013) Beneficial effects of artichoke leaf extract supplementation on increasing HDL-cholesterol in subjects with primary mild hypercholesterolaemia: a double-blind, randomized, placebo-controlled trial. *Int J Food Sci Nutr.* 64(1): 7–15
- v Bundy R, Walker AF, Middleton RW, et al. (2008) Artichoke leaf extract (*Cynara scolymus*) reduces plasma cholesterol in otherwise healthy hypercholesterolemic adults: a randomized, double blind placebo controlled trial. *Phytomedicine.* 15(9): 668–675
- vi Lupattelli G, Marchesi S, Lombardini R, et al. (2004) Artichoke juice improves endothelial function in hyperlipemia. *Life Sci.* 76(7): 775–782
- vii Santos HO, Bueno AA, Mota JF. (2018) The effect of artichoke on lipid profile: A review of possible mechanisms of action. *Pharmacological Research.* 137: 170-178
- viii Holtmann G, Adam B, Haag S, et al. (2003) Efficacy of artichoke leaf extract in the treatment of patients with functional dyspepsia: a six-week placebo-controlled, double-blind, multicentre trial. *Aliment Pharmacol Ther.* 18(11-12): 1099–1105
- ix Marakis G, Walker AF, Middleton RW, et al. (2002) Artichoke leaf extract reduces mild dyspepsia in an open study. *Phytomedicine.* 9(8): 694–699
- x Elsebai MF, Abass K, Hakkola J, et al. (2016) The wild Egyptian artichoke as a promising functional food for the treatment of hepatitis C virus as revealed via UPLC-MS and clinical trials. *Food Funct.* 7(7): 3006–3016