



*Crataegus oxyacantha, Crataegus monogyna,
Crataegus laevigata*

Hawthorn

Indications

Cardiovascular conditions such as congestive heart failure, coronary circulation problems, weak cardiac output, hypertension, angina, arrhythmias, and atherosclerosis. Hawthorn is also used as a sedative and anxiolytic.

Mechanism of Action

Proanthocyanidins, a group of flavonoid compounds in hawthorn berries are credited with much of the antioxidant and anti-inflammatory actions. The total phenolic, flavonoid, and oligomeric proanthocyanidins (OPCs) fractions of hawthorn have 15-lipoxygenase inhibitory effects. The inclusion of hawthorn leaf, flower, fruit, and seed extracts may be supportive ingredients in a wide variety of medicinal formulas to prevent and treat diseases related to oxidative stress.¹

Animal studies have shown anxiolytic and analgesic effects from hawthorn fruits and seed extracts that are abolished with pretreatment of the opiate receptor antagonist naloxone, suggesting activity at opiate receptors.²

Hawthorn preparations have been shown to act on the myocardium by increasing the force of contraction and lengthening the refractory period. Hawthorn has also been shown to increase coronary blood flow by vasodilation, and thus cardiac output. This makes hawthorn useful in conditions for which digitalis and other cardiac glycosides are not yet indicated.^{3,4}

Evidence-Based Research

Modern *in vivo* and *in vitro* research on hawthorn has focused on the antioxidant activity, positive inotropic effects, anti-inflammatory and anticardiac remodeling effects, and antiplatelet aggregation effects.

Hawthorn also has gentle anxiolytic properties that may help to reduce the stress response contributing to adrenal weakness. *Crataegus nigra* has demonstrated anxiolytic effects credited to the same flavonoids found in *Crataegus oxyacantha*.⁵ Hawthorn can help improve hypertension.⁶ Hawthorn fruit contain Vitamin C⁷, an important nutrient for adrenal function, as the adrenal glands contain more vitamin C than any other organ. Hawthorn may be used as a nutritive and supportive herb in formulas for adrenal health.

In an animal study, rats fed a hyperlipidemic diet and given hawthorn extracts had no elevation of total cholesterol, triglycerides, and low-density lipoprotein (LDL) and very low-density lipoprotein cholesterol

fractions. Hawthorn up-regulated hepatic LDL receptors, resulting in greater influx of LDL into the liver, prevented accumulation of cholesterol in the liver by enhancing degradation into bile acids, and suppressed cholesterol synthesis.^{8,9}

Safety in Pregnancy and Breastfeeding

Hawthorn fruit is believed to be safe during pregnancy and lactation, but there are no human trials. The fruit is traditionally made into jellies and jams.

General Safety

The entire rose family has very little toxicity, and like apples or rose hips, the fruits are safe to consume in quantity.

One randomized controlled trial (RTC) investigating hawthorn use in diabetic patients reported no adverse events and no drug interactions.¹⁰

Dosage

Dosage is 160 mg two to three times per day and up; 1000–3000 mg of *Crataegus*, standardized to deliver 200 mg of PCOs per 1000 mg has been used in RCTs. Oligomeric proanthocyanidin complexes (OPCs) stabilize capillary walls when taken at a dosage of 150–300 mg/day. Standardized extracts may contain 1.8% vitexin-4-thamnoside to 18% OPCs.³

Traditional Uses

Hawthorn is in the rose family and like rose hips, apples, cherries, plums, peaches, nectarines, pears, and other fruits of this family, it bears fruits that are high in flavonoids, with many antioxidant and anti-inflammatory effects. Hawthorn fruit is a traditional wild food in Asia, Europe, and North America for making teas, cordials, and other drinks as well as being a traditional heart remedy. The leaves, flowers, and berries are all used as heart tonics for hypertension, hypotension, arrhythmia, valvular diseases, angina, and congestive heart failure symptoms. Native Americans used hawthorn as a food and medicine for gastrointestinal and heart ailments. Hawthorn-based medications have existed in the United States since the 1800s and have been used primarily as heart tonics and for a variety of cardiac complaints as well as being included in pain and anxiety remedies in some traditions.

References

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