Hawthorn (Crataegus laevigata, C. oxyacantha, C. monogyna, C. pentagyna)

Natural Standard Bottom Line Monograph, Copyright © 2007 (www.naturalstandard.com). Commercial distribution prohibited. This monograph is intended for informational purposes only, and should not be interpreted as specific medical advice. You should consult with a qualified healthcare provider before making decisions about therapies and/or health conditions.

While some complementary and alternative techniques have been studied scientifically, high-quality data regarding safety, effectiveness, and mechanism of action are limited or controversial for most therapies. Whenever possible, it is recommended that practitioners be licensed by a recognized professional organization that adheres to clearly published standards. In addition, before starting a new technique or engaging a practitioner, it is recommended that patients speak with their primary healthcare provider(s). Potential benefits, risks (including financial costs), and alternatives should be carefully considered. The below monograph is designed to provide historical background and an overview of clinically-oriented research, and neither advocates for or against the use of a particular therapy.

Related Terms:
- Aubepine, bei shanzha, bianco spino, bread and cheese tree, Cardiplant®, Chinese hawthorn, cockspur, cockspur thorn, crataegi flos, Crataegi folium, Crataegi folium cum flore, Crataegi fructus, Crataegi herba, Crataegisan, Crataegus azaerolus, Crataegus cuneata, Crataegus fructi, Crataegus monogyna, Crataegus nigra, Crataegus oxyacanthoides, Crataegus pentagyna, Crataegus pinnatifida, Crataegus sinaica boiss, Crataegutt®, English hawthorn, epine blanche, epine de mai, Euphytose (EUP) (combination product), Fructus oxyacanthae, Fructus spiniae albae, gazels, haagdorn, hagedorn, haethorn, halves, harthorne, haw, Hawthorne Berry®, Hawthorne Formula®, Hawthorne Heart®, Hawthorne Phytosome®, Hawthorne Power®, hawthorn tops, hazels, hedgethorn, huath, ladies' meat, LI 132, may, mayblossoms, maybush, mayhaw, maythorn, mehlbeerbaum, meidorn, nan shanzha, northern Chinese hawthorn, oneseed, oneseed hawthorn, quickset, red haw, RN 30/9, sanza, sanzashi, shanzha, shan zha rou, southern Chinese hawthorn, thorn-apple tree, thorn plum, tree of chastity, Washington thorn, weissdorn, Weissdornblaetter mit Blueten, whitethorn, whitethorn herb, WS 1442.

BACKGROUND

- Hawthorn, a flowering shrub of the rose family, has an extensive history of use in cardiovascular disease, dating back to the 1st Century. Modern day animal and in vitro studies suggest that flavonoids and other pharmacologically active compounds found in hawthorn may synergistically improve performance of the damaged myocardium, and further, may prevent or reduce symptoms of coronary artery disease.

- Numerous well-conducted human clinical trials have demonstrated safety and efficacy of hawthorn leaf and flower in New York Heart Association (NYHA) Class I-II heart failure (characterized by slight or no limitation of physical activity). An international, multi-center randomized controlled trial is currently underway to investigate long-term benefits.

- Hawthorn is widely used in Europe for treating New York Heart Association (NYHA) Class I-II heart failure, with standardization of its leaves and flowers. Overall, hawthorn appears to be safe and well tolerated, and in accordance with its indication, best used under the supervision of a medical professional.

- The therapeutic equivalence of hawthorn extracts to drugs considered standard-of-care for heart failure (such as angiotensin converting enzyme inhibitors, diuretics, or beta-adrenergic receptor blockers) remains to be established, as does the effect of concomitant use of hawthorn with these drugs. Nonetheless, hawthorn is a potentially beneficial therapy for...
hawthorn with these drugs. Nonetheless, hawthorn is a potentially beneficial therapy for patients who cannot/will not take prescription drugs, and may offer additive benefits to prescription drug therapy.

### SCIENTIFIC EVIDENCE

<table>
<thead>
<tr>
<th>Uses</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Congestive heart failure</strong></td>
<td>A</td>
</tr>
<tr>
<td>Extracts of the leaves and flowers of hawthorn have been reported as efficacious in the treatment of mild-to-moderate congestive heart failure (CHF), improving exercise capacity, and alleviating symptoms of cardiac insufficiency. However, the therapeutic equivalence of hawthorn extracts to drugs considered standard-of-care for heart failure (such as angiotensin converting enzyme inhibitors, diuretics, or beta-adrenergic receptor blockers) remains to be established, as does the effect of concomitant use of hawthorn with these drugs. Nonetheless, hawthorn is a potentially beneficial treatment for patients who cannot/will not take prescription drugs, and may offer additive benefits to established therapies. Further study of these issues is warranted.</td>
<td></td>
</tr>
<tr>
<td><strong>Coronary artery disease (angina)</strong></td>
<td>C</td>
</tr>
<tr>
<td>Hawthorn has not been tested in the setting of concomitant drugs such as beta-blockers or ACE-inhibitors, which are often considered to be standard-of-care. At this time, there is insufficient evidence to recommend for or against hawthorn for coronary artery disease or angina.</td>
<td></td>
</tr>
<tr>
<td><strong>Functional cardiovascular disorders</strong></td>
<td>C</td>
</tr>
<tr>
<td>Two randomized trials have found efficacy of herbal combinations containing hawthorn in the treatment of functional cardiovascular symptoms. However, due to a lack of controlled information on hawthorn monotherapy, there is insufficient evidence to recommend for or against hawthorn for functional cardiovascular disorders.</td>
<td></td>
</tr>
</tbody>
</table>

*Key to grades: A: Strong scientific evidence for this use; B: Good scientific evidence for this use; C: Unclear scientific evidence for this use; D: Fair scientific evidence against this use (it may not work); F: Strong scientific evidence against this use (it likely does not work).*

### TRADITION/THEORY

The below uses are based on tradition, scientific theories, or limited research. They often have not been thoroughly tested in humans, and safety and effectiveness have not always been proven. Some of these conditions are potentially serious, and should be evaluated by a qualified healthcare provider. There may be other proposed uses...
Abdominal colic, abdominal distention, abdominal pain, acne, amenorrhea, antibacterial,

Side Effects and Warnings:

The below doses are based on scientific research, publications, traditional use, or expert opinion. Many herbs and supplements have not been thoroughly tested, and safety and effectiveness may not be proven. Brands may be made differently, with variable ingredients, even within the same brand. The below doses may not apply to all products. You should read product labels, and discuss doses with a qualified healthcare provider before starting therapy.

Adults (18 years and older):

For congestive heart failure, statistically significant trials have used doses of 60 milligrams three times per day or 80 milligrams twice a day for products containing standardized extract WS 1442 (18.75% oligomeric procyanidines). The U.S. brand HeartCare® (Nature's Way) is standardized in this fashion.

Statistically significant trials have used doses of 100 milligrams three times per day, 200 milligrams twice a day, and up to 300 milligrams three times a day for products containing standardized extract LI 132 (2.2% flavonoids).

The dosage range recommended in review literature is 160-900 milligrams hawthorn extract per day in 2-3 divided doses (corresponding to 3.5-19.8 milligrams flavonoids or 30-168.8 milligrams oligomeric procyanidines). Some sources recommend a range of 240-480 milligrams per day for extracts standardized to 18.75% oligomeric procyanidines.

Children (younger than 18 years):

Not recommended.

The U.S. Food and Drug Administration does not strictly regulate herbs and supplements. There is no guarantee of strength, purity or safety of products, and effects may vary. You should always read product labels. If you have a medical condition, or are taking other drugs, herbs, or supplements, you should speak with a qualified healthcare provider before starting a new therapy. Consult a healthcare provider immediately if you experience side effects.

Allergies:

Avoid if allergic to hawthorn or to members of the Crataegus genus. There is a case report of an immediate-type hypersensitivity reaction to hawthorn plants. It is not known if this applies to oral formulations.

Side Effects and Warnings:

There are limited reports of adverse effects associated with hawthorn. Numerous human trials, observational studies including over 4,500 patients, and case reports have noted rare adverse effects, including abdominal discomfort, nausea, agitation, dizziness, headache,
fatigue, dyspnea, skin rash, insomnia, diaphoresis, and tachycardia.

**Pregnancy and Breastfeeding:**
- Not recommended due to lack of sufficient data.

**INTERACTIONS**

Most herbs and supplements have not been thoroughly tested for interactions with other herbs, supplements, drugs, or foods. The interactions listed below are based on reports in scientific publications, laboratory experiments, or traditional use. You should always read product labels. If you have a medical condition, or are taking other drugs, herbs, or supplements, you should speak with a qualified healthcare provider before starting a new therapy.

**Interactions with Drugs:**
- Additive inotropic effects when used with cardiac glycoside drugs such as digoxin have been noted in animals without added toxicity. In humans, hawthorn has been used with the intention of decreasing digoxin doses, although data on safe and efficacious dosing in this setting is still limited.
- Hawthorn may have additive activity with medications that lower blood pressure. Hawthorn may add to the activity of drugs that dilate blood vessels, and may decrease the effects of vasoconstrictors such as phenylephrine (Neo-Synephrine®), ephedrine or norepinephrine. Hawthorn may also have additive activity with medications that reduce cholesterol levels.

**Interactions with Herbs and Dietary Supplements:**
- Hawthorn may add to the effects on the heart of agents containing cardiac glycosides.
- Hawthorn may add to the effects of agents that lower blood pressure.
- Hawthorn may have additive activity with agents that reduce cholesterol levels such as garlic, niacin, or fish oil (omega-3 fatty acids).

**AUTHOR INFORMATION**

This information is based on a systematic review of scientific literature edited and peer-reviewed by contributors to the Natural Standard Research Collaboration (www.naturalstandard.com).

**REFERENCES**

Natural Standard developed the above evidence-based information based on a thorough systematic review of the available scientific articles. For comprehensive information about alternative and complementary therapies on the professional level, go to www.naturalstandard.com. Selected references are listed below.

3. Bodigheimer K, Chase D. [Effectiveness of hawthorn extract at a dosage of 3x100mg per day]. Munch Med Wschr 1994;136 Suppl 1:s7-s11.


