Expert Herbal Reality Resource
Hawthorn

Names

Botanical Name *Crataegus spp.*

Family: Rosaceae

Common names: Mayflower, whitethorn, Maybush, Hedgethorn, Bread and cheese, Red Haw (Eng), Weißdorn, Hagendorn (Ger), Aubépine, Epine blanche (Fr), Blancospino (Ital), Espino blanco (Sp)

Alternate botanical names: *Crataegus laevigata (*aka *C. oxyacantha), C. monogyna* and other species. *Crataegus pinnatifida* is the main remedy used in China

Description

Leaves, flowers, and fruit of various species of hawthorn are used interchangeably. They are deciduous, shrubby trees with thorny shoots. The leaves are characteristically 3-lobed, and as with all plants of the rose family have appendages (stipules) found at the base of leaves. Small white or pink flowers with 5 petals are borne in clusters. These give way to the characteristic red spherical berries that contain a single seed each. The plant flowers in May and bears fruit in September.

Flowers smell faint, often slightly fishy due to the trimethylamine content.

Constituents

- Oligomeric procyanidins (OPCs:1.7-4%), mainly procyanidin B-2. The flowers contain the highest levels of flavonoids and the leaves contain the highest levels of OPCs.
- Flavonoids (1–2%), including quercetin glycosides (hyperoside, rutin) and flavone-C-glycosides (vitexin).
- Terpenoids: sesquiterpenes and triterpenes. Highest in leaves and flowers.
- Amines: Trimethylamine (flowers), phenylethylamine, O-methoxyphenethylamine, tyramine
- Anthocyanins: including leucocyanidin. Anthocyanins give the berries their colour.

Traditional use

Humans have venerated the hawthorn from ancient times, and the use of the plant as a medicine is almost as extensive. In Europe, ‘mayflower’ was long regarded as a sacred and magical tree. It was at the centre of numerous folk beliefs and rituals celebrating renewal of life in springtime, fertility, and matters of the heart.

Traditional folk use of hawthorn notably included fever management, to steady fluctuating body temperatures. In 1640, the English herbalist and author Parkinson noted that the remedy was applied for dropsy (an old term for fluid accumulation caused by heart failure). Over the ensuing centuries the therapeutic potential of hawthorn emerged more strongly, and herbalists found that its greatest benefit truly was for "matters of the heart".

Early American herbalists found it helpful in cases of inflammation in the cardiovascular system (endocarditis, myocarditis, and pericarditis), irregular heart beat, and more severe heart malfunctions. It was considered gentle enough for elderly patients with difficult breathing linked to ‘weak heart’.

In Asian traditions, the fruits of local species were applied for astringent effects and for general digestive complaints, including dyspepsia (indigestion) and diarrhoea; it was sometimes charred for use as intestinal charcoal. Similar digestive applications were found among Native American tribes for the flowering shoots and flowers of their local species, particularly in the north and northwest. Native Americans also had gynaecological and obstetric uses for the plant.

All over the world, hawthorn fruits have been widely eaten as foods.

Traditional actions

Western Actions

Cardiotonic and trophorestorative, circulatory tonic, coronary vasodilator, hypotensive, antioxidant

Taste: (berries) sweet, sour. Astringent.

Ayurvedic Actions

- Rasa (taste) Sweet, sour, astringent.
- Virya (action) Heating.
- Vipaka (post-digestive effect) Sour.
- Guna (quality) Berries: Sharp, heavy, oily. Flowers/leaves: Sharp, light, dry.
- Dosha effect: Berries reduces vata and balances kapha and pitta; Flowers/leaves: balances vata, kapha and pitta
- Dhatu (tissue) Rasa/plasma, rakta/ blood, mamsa/muscle.
- Srotas (channels) Rakta/circulatory, anna/digestive, majja/nervous, mutra/ urinary.
- A wonderful rasayana, rejuvenating and strengthening, excellent heart and circulatory tonic for high vata & for those in vata stage of life. Stimulates digestion, clears ama from the gut, helps regulate metabolism. Also has affinity with mutravahasrotas, clearing toxins & excess fluid via kidneys. Helps to clear ama and cholesterol from the raktavahasrotas. An excellent medhya herb, good for vata type nervous problems associated with ageing including poor memory, confusion, insomnia.

Traditional Chinese Medicine Actions

- Tonifies Heart Qi
- Vitalises Heart Blood
- Tonifies Heart Yin
- Stimulates the Heart
- Promotes Digestion

What practitioners say

Cardiovascular system: Among trained Western herbal practitioners, hawthorn is a strong favourite for the management of heart and coronary symptoms, as well as issues presenting in the circulatory system.

As it is a tonic, hawthorn has a reputation for use in both hypertension and hypotension as it normalises cardiovascular function. Other symptoms that may indicate the use of hawthorn are mild angina (chest pain), intermittent episodes of tachycardia (fast heartbeat), benign arrhythmia (irregular heartbeat).

Hawthorn may also be indicated to assist with peripheral circulation such as in the case of chilblains, atherosclerosis, and Raynaud syndrome.

It is often combined with other herbs such as motherwort (*Leonorus cardiaca*) for tachycardia and arrythmias, or linden flowers (Tilia spp) for anxiety related symptoms or hypertension.

Nervous system: Herbalists may prescribe Hawthorn in cases of anxiety and sleeplessness, especially if symptoms present with palpitations or other heart symptoms and sensations.

Hawthorn is also helpful in supporting the emotional heart much like its cousin, rose (Rosa spp). Like rose, Hawthorn can be an aid in the processing of grief and loss.

Evidence

In a meta-analysis of ten well-conducted clinical trials including 855 patients with chronic heart failure (New York Heart Association classes I to III - in which there is slight limitation of physical activity) standardised preparations of hawthorn leaf and flowers show good clinical evidence of benefit, including increased heart capacity and tolerance to exercise (1). Other reviews for a particular standardised preparation support these conclusions (2, 3). Studies of its mechanism of action suggest that hawthorn helps improve the ability of the heart muscle to contract combined with an increase in coronary blood flow; the most important constituents for this activity appear to be flavonoids (4). Oligomeric procyanidins (OPCs) are also likely to contribute benefit (5,6). Some types of hawthorn extracts steady variable heart rate. There is also a significant hypotensive (blood pressure lowering) effect (7).

A Chinese hawthorn Crataegus pinnatifida has been used in Asia for the treatment of high cholesterol and various cardiovascular diseases. There is evidence that this species can be helpful in the case of ‘metabolic syndrome’ in which overweight, high blood sugar, high blood pressure or high blood lipid levels occur simultaneously, raising the risk for diabetes mellitus and cardiovascular diseases (8).

Hawthorn is a gentle tonic herb that is considered very safe when used as recommended. The fruit has been eaten as a food for centuries and was sometimes referred to as the ‘bread-and-butter-plant’. However, some traditional uses for this remedy make it unsuitable for self-medication, as heart conditions require expert diagnosis, monitoring, and treatment. Thus, the main risk associated with its use is that it might be taken in place of proper medical diagnosis and treatment of conditions that are potentially life threatening.

There is also a theoretical possibility of interactions with conventional medicines for the heart, (although there is specific evidence that it does not interact with digoxin) and hawthorn should not be taken if there is already prescriptions for heart problems without expert supervision (9).

In one systematic review of safety in clinical trials involving over 5,000 patients with heart problems, adverse events were reported infrequently and were mostly mild, such as dizziness, digestive upsets, headache, and palpitation.

There is no evidence that hawthorn has harmful effects in human pregnancy, although such evidence is limited. There is no evidence of harmful effects in animal studies. Hawthorn is probably compatible with breastfeeding. Nevertheless, any use of this remedy during pregnancy and lactation should be undertaken only with expert advice.

Safety

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Dosage

1.5–3.5g of dried flower, leaf or berry per day, as infusion or decoction.
3-6ml of a 1:5 tincture per day or equivalent in capsule or tablet form.

References

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