Bogbean

Species (Family)
*Menyanthes trifoliata* L. (Menyanthaceae)

Synonym(s)
Buckbean, Marsh Trefoil, Menyanthes

Part(s) Used
Leaf

Pharmacopoeial and Other Monographs
- BHP 1996\(^{(G9)}\)
- Complete German Commission E\(^{(G3)}\)
- Martindale 32nd edition\(^{(G43)}\)
- PDR for Herbal Medicines 2nd edition\(^{(G36)}\)

Legal Category (Licensed Products)
GSL\(^{(G37)}\)

Constituents\(^{(G2,G62,G64)}\)
- **Acid** Caffeic acid, chlorogenic acid, ferulic acid, *p*-hydroxybenzoic acid, protocatechuic acid, salicylic acid, vanillic acid;\(^{(1,2)}\) folic acid and palmitic acid.\(^{(2)}\)
- **Alkaloids** Gentianin and gentianidine (pyridine-type); choline.\(^{(2)}\)
- **Coumarins** Scopoletin.\(^{(2)}\)
- **Flavonoids** Hyperin, kaempferol, quercetin, rutin and trifolioside.\(^{(1,2)}\)
- **Iridoids** 7',8'-Dihydrofoliamenthin, foliamenthin, loganin, menthiafolin and sweroside.\(^{(2–4)}\)
- **Other constituents** Carotene, ceryl alcohol, enzymes (e.g. emulsin, invertin), \(\alpha\)-spinasterol, an unidentified substance with haemolytic properties.\(^{(2)}\) \(\alpha\)-Spinasterol has been reported to be a mixture of five sterols with \(\alpha\)-spinasterol and stigmas-7-enol as major components.\(^{(5)}\)

Food Use
Bogbean is listed by the Council of Europe as a natural source of food flavouring (category N2). This category indicates that bogbean can be added to foodstuffs in small quantities, with a possible limitation of an active principle (as yet unspecified) in the final product.\(^{(G16)}\)

Herbal Use
Bogbean is stated to possess bitter and diuretic properties. It has been used for rheumatism, rheumatoid arthritis, and specifically for muscular rheumatism associated with general asthenia.\(^{(G2,G7,G8,G64)}\)

Dosage
- **Dried leaf** 1–2 g or by infusion three times daily.\(^{(G7)}\)
- **Liquid extract** 1–2 mL (1:1 in 25% alcohol) three times daily.\(^{(G7)}\)
- **Tincture** 1–3 mL (1:5 in 45% alcohol) three times daily.\(^{(G7)}\)

Pharmacological Actions

*In vitro and animal studies*
A choleretic action has been described for caffeic acid and ferulic acid; a stomachic secretive action has been reported for protocatechuic acid and *p*-hydroxybenzoic acid. The iridoids possess bitter properties.\(^{(1)}\) The bitter index (BI) of bogbean is stated to be 4000–10 000 (compared to gentian BI 10 000–30 000).\(^{(G62)}\) Bogbean extracts have antibacterial activities.\(^{(6,7)}\)

*Side-effects, Toxicity*
Large doses of bogbean are stated to be purgative and may cause vomiting.\(^{(8)}\) An unidentified substance with haemolytic activity has been isolated from bogbean.\(^{(2)}\)

*Contra-indications, Warnings*
Excessive doses may be irritant to the gastrointestinal tract, causing diarrhoea, griping pains, nausea and vomiting.\(^{(8)}\)
**Pregnancy and lactation** The safety of bogbean has not been established. In view of the lack of toxicity data and possible purgative action, the use of bogbean during pregnancy and lactation should be avoided.

**Pharmaceutical Comment**

The chemistry of bogbean is well studied, but no pharmacological information is available to justify the herbal uses. In view of the lack of toxicity data, excessive doses should be avoided.

**References**

*See also* General References G2, G3, G8, G9, G16, G31, G36, G37, G43, G56, G62 and G64.


