

# Buchu

## Species (Family)

*Agathosma betulina* (Berg.) Pillans (Rutaceae)

## Synonym(s)

*Barosma betulina* Bart. & Wendl., Round Buchu, Short Buchu

Note that Oval Buchu refers to *Agathosma crenulata* (L.) Pillans (synonym *Barosma crenulata* (L.) Hook.) and Long Buchu refers to *Agathosma serratifolia* (Curt.) Spreeth (synonym *Barosma serratifolia* (Curt.) Willd.).<sup>(G12)</sup>

## Part(s) Used

Leaf

## Pharmacopoeial and Other Monographs

BHC 1992<sup>(G6)</sup>

BHP 1996<sup>(G9)</sup>

Martindale 32nd edition<sup>(G43)</sup>

Mills and Bone<sup>(G50)</sup>

PDR for Herbal Medicines 2nd edition<sup>(G36)</sup>

## Legal Category (Licensed Products)

GSL<sup>(G37)</sup>

## Constituents<sup>(G2,G22,G41,G48,G64)</sup>

**Flavonoids** Diosmetin, quercetin, diosmin, quercetin-3,7-diglucoside, rutin.

**Volatile oils** 1.0–3.5%. Over 100 identified compounds, including diosphenol, limonene, menthone and pulegone as the major components.

**Other constituents** Mucilage, resin. Coumarins have been reported for many other *Agathosma* species.<sup>(1)</sup>

## Food Use

Buchu is listed by the Council of Europe as a natural source of food flavouring (category N3). This cate-

gory allows buchu to be added to foodstuffs in the traditionally accepted manner, although there is insufficient information available for an adequate assessment of potential toxicity.<sup>(G16)</sup> In the USA, buchu volatile oil is approved for food use with concentrations usually up to about 0.002% (15.4 ppm).<sup>(G16,G41)</sup>

## Herbal Use

Buchu is stated to possess urinary antiseptic and diuretic properties. It has been used for cystitis, urethritis, prostatitis, and specifically for acute catarrhal cystitis.<sup>(G2,G7,G8,G64)</sup>

## Dosage

**Dried leaf** 1–2 g by infusion three times daily.<sup>(G6,G7)</sup>

**Liquid extract** 0.3–1.2 mL (1:1 in 90% alcohol).<sup>(G6,G7)</sup>

**Tincture** 2–4 mL (1:5 in 60% alcohol).<sup>(G6,G7)</sup>

## Pharmacological Actions

### *In vitro* and animal studies

None documented for buchu. Diosmin has documented anti-inflammatory activity against carrageenan-induced rat paw oedema, at a dose of 600 mg/kg body weight.<sup>(2)</sup>

### Side-effects, Toxicity

None documented for buchu. The volatile oil contains pulegone, a known hepatotoxin (*see* Pennyroyal).<sup>(G20)</sup> The oil may cause gastrointestinal and renal irritation.

## Contra-indications, Warnings

Excessive doses of buchu should not be taken in view of the potential toxicity of the volatile oil. Buchu should be avoided in kidney infections.<sup>(G42)</sup>

**Pregnancy and lactation** The safety of buchu has not been established. In view of this, together with the potential toxicity and irritant action of the volatile oil, the use of buchu during pregnancy and lactation should be avoided.

### Pharmaceutical Comment

Limited chemical data are available for buchu. No scientific evidence was found to justify the herbal uses, although reputed diuretic and anti-inflammatory activities are probably attributable to the irritant nature of the volatile oil and the flavonoid components, respectively. In view of the lack of documented toxicity data, together with the presence of pulegone

in the volatile oil, excessive use of buchu should be avoided.

### References

*See also* General References G2, G6, G8, G9, G16, G22, G31, G32, G36, G37, G41, G42, G43, G48, G50, G58 and G64.

- 1 Campbell WE *et al.* Coumarins of the Rutoideae: tribe Diosmeae. *Phytochemistry* 1986; 25: 655–657.
- 2 Farnsworth NR, Cordell GA. A review of some biologically active compounds isolated from plants as reported in the 1974–1975 literature. *Lloydia* 1976, 39: 420–455.