HELICHRYSUM PETIOLARE HERBA

Definition
Helichrysum Petiolare Herba consists of the fresh or dried flowering tops of Helichrysum petiolare Hilliard & Burtt (Asteraceae).

Synonyms
Helichrysum petiolatum auct. non (L.) DC.

Vernacular names
kooigoed (A), imphepo, phefu (Xh)

Description

Macroscopical

Straggling, loosely-branched, soft-wooded evergreen shrub about 1m high, with long slender branches; leaves simple, alternate, petiolate, 10-35 mm × 10-30mm, broadly ovate, grey-woolly felted on both surfaces or with the upper surface sometimes only cobwebby and dark green in colour, with three prominent veins on reverse; flowers (Nov-Jan) yellow, sweetly scented, borne in subglobose heads of 18-30 individuals, ±5mm in diameter, the latter arranged in loose terminal panicles; involucral bracts in c. 5 series, loosely imbricate, ± equaling the flowers, opaque white with grey-woolly reverse; fruit a barrel-shaped, 5-ribbed, glabrous achene, ± 1mm long.

Microscopical

1. Cells of lower epidermis with sinuous walls.
2. Polygonal cells of upper epidermis showing scars formed by trichome base.
3. Cells of upper epidermis showing underlying palisade layer.
4. Cells of lower epidermis with anisocytic stomata
5. Glandular trichome with unicellular stalk and bicellular head, ±40µ in diameter with yellow-brown contents.
6. Ovoid red-brown bodies of palisade, ±35µ in diameter.

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**Crude drug**
Supplied in bundles of fresh or dry leafy twigs, the foliage characteristic soft, grey-woolly, aromatic; flowers may be present or absent, depending on season.

**Geographical distribution**

![Distribution map](image)

Occurs in the understory on forest margins, damp lower slopes or shady kloofs of the Cedarberg, Stellenbosch and southern Cape mountains, in the Eastern Cape coastal forests and the Amatola, Insizwe and Tabankulu Mountains.

**Quality standards**

**Identity test**

![TLC plate](image)

Thin layer chromatography on silica gel using as solvent a mixture of toluene:diethyl ether:1.75M acetic acid (1:1:1). Reference compound cineole (0.1% in chloroform). Method according to Appendix 2a.

R\(_f\) values of major compounds: 0.29 (mustard brown); 0.58 (grey-purple); 0.64 (light yellow); cineole: 0.80 (purple-blue)

HPLC on C\(_{18}\) column, method according to Appendix 2b.

**Major compounds:**

![HPLC spectrum](image)

Methanol extract: (figure 6a)
Retention times (mins): 2.76; 10.06; 16.30; 17.01; 27.75
DCM extract: (figure 6b)
Retention times (mins): 3.97; 5.20; 5.61; 8.06; 8.88

**Ethanol (70%) soluble extractive value:**
not less than 24% (range: 23.66-29.47%).

**Volatile oil content:** not less than 0.67% (0.67-0.83%).

**Purity tests**
**Assay**
Not yet available.

**Major chemical constituents**

![Chemical Structure](image)

*Helichrysum petiolare* has been shown to contain sesquiterpenes e.g. caryophyllene oxide, spathulenol, α-humulene, as well as flavonoids and phloroglucinol derivatives. Several other Southern African *Helichrysum* species have been investigated and shown to contain unusual flavonoids e.g. the chalcone helichrysetin as well as phloroglucinol derivatives e.g. caespitin. Also commonly present are α-pyrone derivatives, diterpenes and sesquiterpenes.

Microchemical tests did not suggest the presence of tannins, alkaloids, saponins, cyanogenic glycosides or triterpene steroids in this species.

**Dosage forms**

An aqueous infusion or decoction in milk may be taken orally; fresh leaf is applied as a wound dressing and smoke from burning fresh leaves may be inhaled.

**Medicinal uses**

Aqueous infusions of this and related species are taken orally to relieve coughs, colds, catarrh, headache, fever, menstrual problems, weak heart, *angina pectoris*, backache, urinary tract infections, nervous disorders and headache. Infusions may be applied externally as an antiseptic wash and whole leaf as a wound dressing.

**Pharmacology/bioactivity**

**Brine shrimp lethality assay:**
Activity was shown by aqueous extracts prepared by Soxhlet extraction of fresh leaf material, at a concentration of 1 000 mg/ml.

**Antibiotic activity assay**
Antimicrobial activity of aqueous extracts prepared from dried leaf material, at a concentration of 10mg/ml, was not demonstrated *in vitro* against *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Candida albicans* or *Mycobacterium smegmatis*. No other information is available regarding the bioactivity of this species. Other *Helichrysum* species have been shown to possess antibiotic activity, although the relevant studies have generally been based on other than aqueous extracts.

**Contraindications**
None known.

**Adverse reactions**

None are recorded for this species. Sesquiterpene lactones are however common in the genus and may provoke dermatitis or other allergic responses in susceptible individuals.

**Precautions**
See 15 above.

**Dosage**

An infusion is made by infusing one tablespoonful of dried material in a closed

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vessel with 1 litre of boiling water. When cold, the infusion is strained.  
**Adults:** Half a teacupful (90ml) three times daily.  
**Children 6-12 years:** One quarter of a teacupful (45ml) three times daily.