

STACHYS AETHIOPICA HERBA

Definition

Stachys Aethiopica Herba consists of the fresh or dried aerial parts of *Stachys aethiopica* L. (Lamiaceae).

Synonyms

Stachys aethiopica L. var. *glandulifera* Skan
Stachys aethiopica L. var. *hispidissima* Benth.
Stachys aethiopica L. var. *parviflora* Skan
S. attenuata Skan
S. capensis Presl.
S. fruticeticorum Briq.
S. harveyi Skan
S. hispidula Hochst.
S. serrulata Burch. ex Benth.

Vernacular names

klein kattedkruie (A)

Description

Macroscopical¹



Figure 1 – Live plant

Perennial soft herb, much branched and trailing, to 0,5 metres; **stems** square in T/S, grooved and clothed with long covering trichomes; **leaves** opposite, petiolate, thin, soft, ovate to heart-shaped, 8-35mm long x 6-25mm wide, clothed with glandular and covering hairs, the latter 0,5-2mm long, margin crenate; **flowers** (Aug-Oct) borne in 4-6 flowered verticils, white, pink or deep mauve with purplish flecks on the lower lip.



Figure 2 – line drawing

Microscopical

Characteristic features are: the large epidermal cells of the upper leaf surface, up to 100 microns long, with sinuous slightly thickened walls (1); the clothing hairs of leaf and stem, of two types: thick-walled, usually bicellular with pointed apex and bulbous base, up to 350 microns long (2) and longer thin-walled unicellular trichomes, up to 800 microns long (9); the yellow-brown glandular hairs of leaf and stem, with 2-celled stalk and 1-8 celled head (3-6); the absence of calcium oxalate crystals; the epidermal cells of lower leaf epidermis showing anisocytic stomata and cicatrix of trichome basal cell (7-8).

¹ Codd, L.E. (1985). The genus *Stachys*. *Flora of Southern Africa* **28(4)**: 51-78.

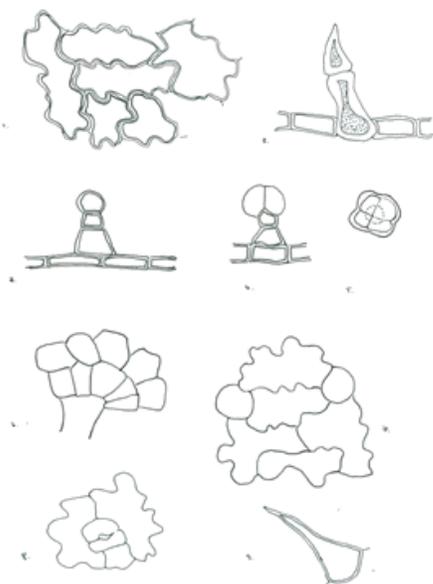


Figure 3 – microscopical features

Crude drug

Collected as needed, or available in the market place as bundles of fresh or dried material comprising leaf, stem and flowering stalks; texture softly hairy, odour characteristic aromatic-pungent.

Geographical distribution

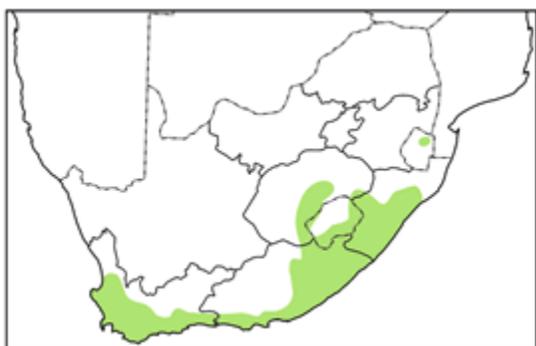


Figure 4 – distribution map

Widespread as a scrambling undershrub in coastal dune bush, fynbos or along forest margins of the Western and Eastern Cape Provinces, from Clanwilliam south to the Cape Peninsula and eastwards into the Free State Province, Lesotho and KwaZulu-Natal.

Quality standards

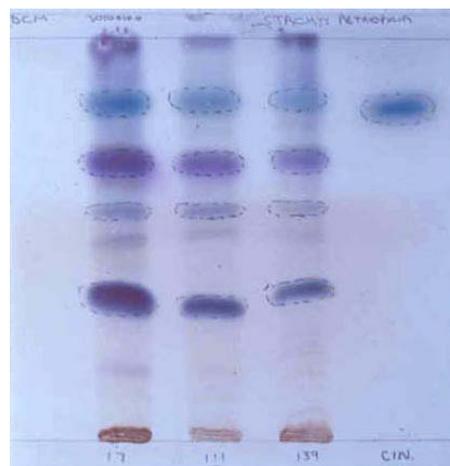


Figure 5 – TLC plate

Identity tests

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: 0,36 (purple); 0,59 (grey); 0,74 (mauve); 0,88 (lilac); cineole: 0,81 (blue-purple)

HPLC on C₁₈ column, method according to Appendix 2b.

Major compounds:

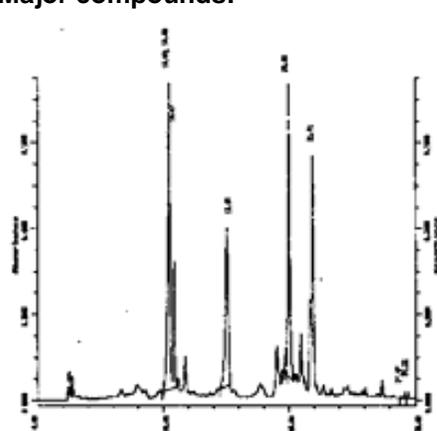


Figure 6 – HPLC spectrum

Methanol extract: (Figure 6)

Retention times (mins): 10.43; 10.80; 14.89; 19.88; 21.84

Ethanol (70%) soluble extractive value:
not less than 24,0% (range: 24.23-30.63%)

Volatile oil content: not less than 0, 5%

Purity tests

Assay

Not yet available

Major chemical constituents

Microchemical tests in our laboratories indicated the presence of tannins and saponins but not of alkaloids nor of cardiac, cyanogenic or anthraquinone glycosides. Little is known of the secondary chemistry of this species; several other members of the genus *Stachys* (± 300 species) are however used medicinally in various parts of the world. Analyses of essential oils of some of these species suggest that sesquiterpenes e.g. caryophyllene, germacrene, pinene and cadinene predominate².

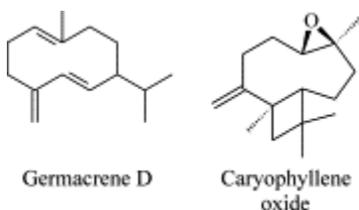


Figure 7 – chemical constituents

Dosage forms

Used as an aqueous infusion, taken orally.

Medicinal uses

Used for the treatment of internal haemorrhoids, influenza, gynaecological problems and liver disorders.

Pharmacology/bioactivity

No *in vitro* antimicrobial activity of aqueous extracts of *Stachys aethiopica* against *Pseudomonas aeruginosa*, *Candida albicans*, *Staphylococcus aureus* or

Mycobacterium smegmatis was observed, in the concentrations used for disc assays in our laboratories. A recent *in vitro* study of the volatile oils of other *Stachys* species² showed these to possess antimicrobial activity against a range of pathogenic bacteria and fungi.

Contraindications

None recorded.

Adverse reactions

None reported

Precautions

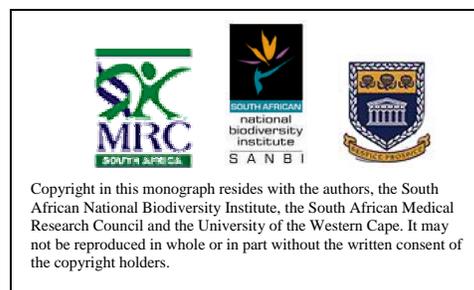
No special precautions.

Dosage

Ten grams of dried leaf (20g fresh leaf) infused with one litre of boiling water in a closed vessel until cold.

Adults: half a teacupful (90ml) three times daily.

Children: not recommended.



² Skaltsa, H.D., Demetzos, C., Lazari, D. & Sokovic, M. (2003). Essential oil analysis and antimicrobial activity of eight *Stachys* species from Greece. *Phytochemistry* **64**(3): 743-752.