

HIPPIA FRUTESCENS HERBA

Definition

Hippia Frutescens Herba consists of the fresh or dried aerial parts of *Hippia frutescens* (L.) L. (Asteraceae).

Synonyms

Tanacetum frutescens L.

Vernacular names

Rankals, kanferbossie (A)

Description^{1 2}

Macroscopical



Figure 1 – Live plant

Shortly hairy erect to straggling weakly-branched shrublet reaching a height of 60cm; **leaves** soft, pectinate-pinnatifid, up to 60mm long, crowded on hairy branches, lobes oblong to linear; **flowers** (Sept-Mar) yellow, borne in discoid heads up to 6mm in diameter and arranged in a branched corymb; each head subtended by 2 rows of green bracts; **fruit** a winged achene.

¹ Harvey, W. (1865). The genus *Hippia*. *Flora Capensis* 3: 170.

² GR 3



Figure 2 – line drawing

Microscopical

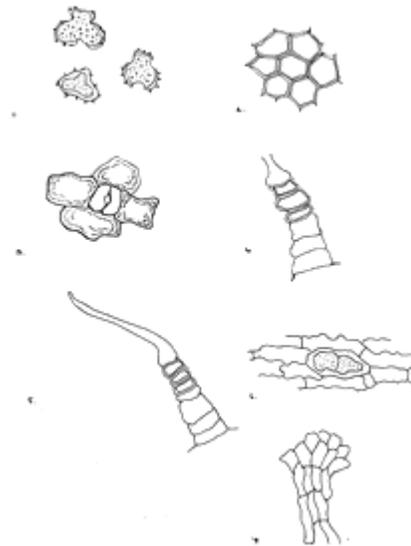


Figure 3 – microscopical features

Characteristic features are: the cells of the upper epidermis with sinuous walls, and striated cuticle (3); the numerous anomocytic stomata present on both leaf surfaces; the small polygonal cells of the lower epidermis with thickened walls (2); the sessile glandular hairs of the upper leaf surface (6); the clothing hairs of both leaf surfaces (6); the clothing hairs of both leaf surfaces, up to 480 μ long, with base of up to 3 large cells, median section of 3-4

smaller cells and single terminal cell tapering to an acute apex (5); the walls of all but the apical cell stain red with Soudan IV; the fairly numerous yellow-brown pollen grains up to 200 μ in diameter, (1); the papillose cells of the stigma (7) .

Crude drug

Gathered as needed or available in the marketplace as fresh to semi-dry material; colour bright green, texture soft hairy, odour aromatic.

Geographical distribution



Figure 4 – distribution map

Sandstone slopes of the Western Cape Province and extending into the Eastern Cape Province, from the Cedarberg mountains to Storms River and Uitenhage, in shady or damp places from sea level to 2000m.

Quality standards

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: 0,16 (grey-green); 0,23 (grey-green); 0,82 (purple); cineole marker 0,78 (blue-purple)

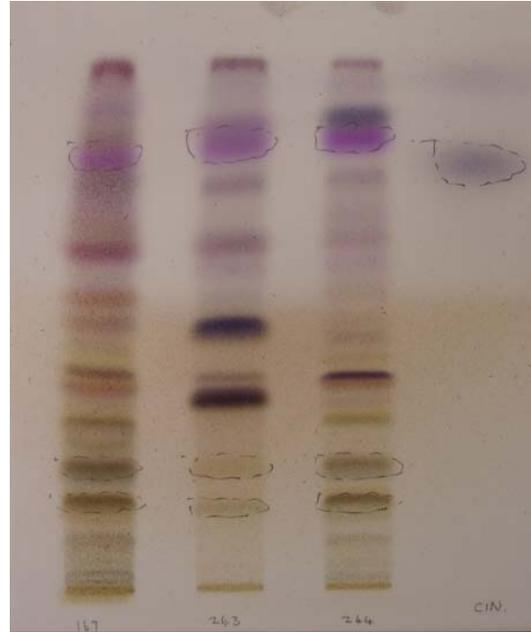


Figure 5 – TLC plate

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

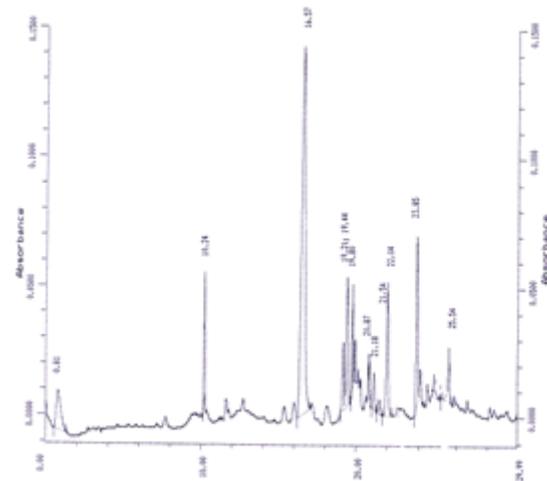


Figure 6 – HPLC spectrum

Major compounds:

Methanol extract: Retention times (mins): 10.24; 16.57; 23.85

Ethanol (70%) soluble extractive value:
not less than 27.0% (range: 27.33-30.20%)

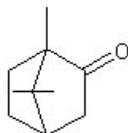
Purity tests

Assay

Not yet available

Major chemical constituents

Microchemical tests in our laboratories indicated the presence of tannins, saponins and alkaloids (2/3 collections) but not of cyanogenic, cardiac or anthraquinone glycosides. Analysis of a South African collection of the essential oil of this species³ showed major constituents to be camphor (11.0%), trans β -farnesene (7.5%), linalool (10.6%), linalool acetate (6.8%), terpenen-4-ol (8.1%) and α -terpineol (7.0%).



Camphor

Figure 7: chemical constituents

Dosage forms

An aqueous infusion is taken orally.

Medicinal uses

Used mainly in the Montagu district for the treatment of upper respiratory tract infections and also for toothache.

Pharmacology/bioactivity

In vitro assays for antimicrobial activity (aqueous extract), conducted in our laboratories, demonstrated no inhibitory activity against *Pseudomonas aeruginosa*, *Mycobacterium smegmatis* or *Candida albicans*, in the concentrations used. Moderate to good inhibitory activity was recorded against *Staphylococcus aureus*.

Contraindications

None known

Adverse reactions

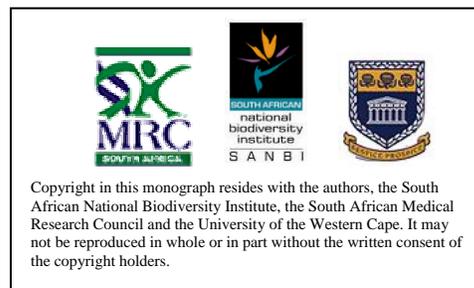
None recorded

Precautions

No special precautions

Dosage

To be determined



³ Campbell, W.E. (1997). Composition of the essential oil of *Hippia frutescens* (L.) L. *Journal of Essential Oil Research* **9(6)**: 703-704.