

GALENIA AFRICANA HERBA

Definition

Galenia Africana Herba consists of the fresh or dried aerial parts of *Galenia Africana* L. var. *africana* (Aizoaceae).

Synonyms

Galenia namaensis auct. non Schinz

Vernacular names

kraalbos, geelbos, perdebos (A), d/kooi dabee

Description

Macroscopical¹



Figure 1 – Live plant

Erect aromatic green to yellow-green softly woody shrublet 0.5-1.5 m high, stems pale coloured, glabrous except when young; **leaves** opposite, bright green when young, yellow to orange when older, flat, linear to narrowly oblong, 15-50 mm long × 2-5 mm wide, with acute apex; **flowers** (Oct-Dec) inconspicuous, numerous, tetramerous, yellow-green, borne in terminal panicles 3-10 cm long × 2-12 cm wide.



Figure 2 – line drawing

Microscopical

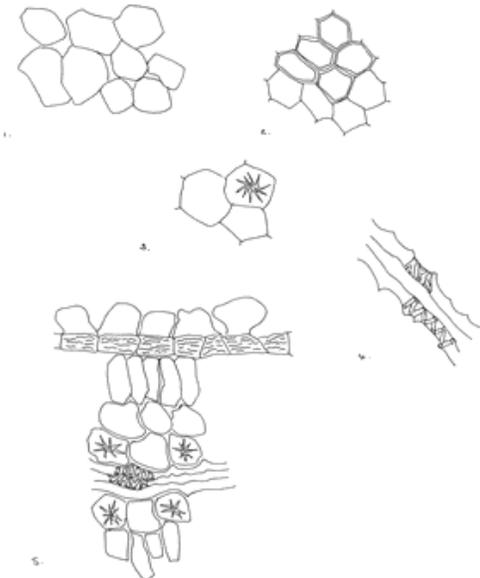


Figure 3 - microscopical features

Characteristic features are: the globose thin-walled transparent cells of the leaf epidermis (1), the closely packed cells of the palisade

¹ Adamson, R. (1956). The genus *Galenia*.
Journal of South African Botany **22(3)**: 88-123.

layer with thickened walls, polygonal in surface view (2), the small calcium oxalate rosette aggregates (cluster crystals) in cells of the mesophyll, each up to 30 μ in diameter (3), the vessels of the leaf lamina with sharply dentate walls (4); the absence of epidermal hairs except in very young material.

Crude drug

Collected as needed or available in the marketplace as bundles of yellow to yellow green leafy stems, soft when fresh, odour faintly aromatic.

Geographical distribution

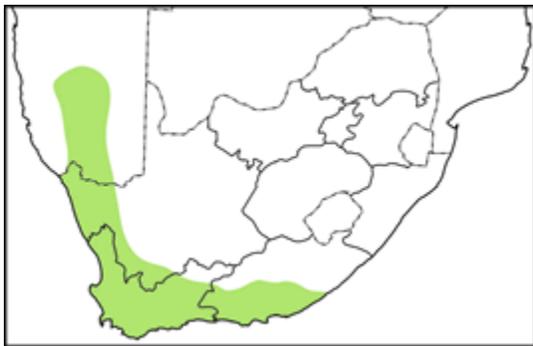


Figure 4 – distribution map

Wide distribution on dry flats and lower slopes from the Northern Cape and Namaqualand to Uniondale, the Karoo and Eastern Cape Province; often on disturbed ground and road verges.

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.

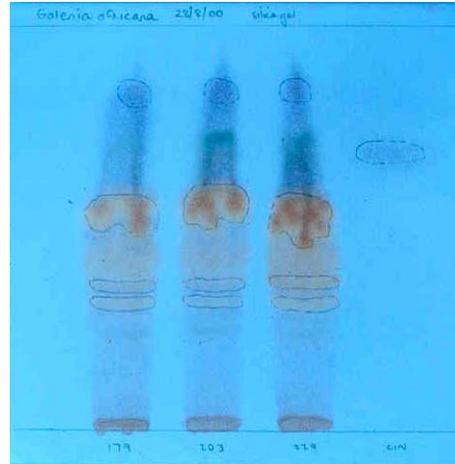


Figure 5 – TLC plate

R_f values of major compounds: 0.31 (pale yellow); 0.36 (mustard yellow); bright orange yellow 0.53 (broad diffuse band); 0.69 (purple); cineole: 0.83 (blue-purple)
HPLC on C₁₈ column, method according to Appendix 2b.

Major compounds:

Methanol extract: (figure 6a)

Retention times (mins): 14.44; 15.79

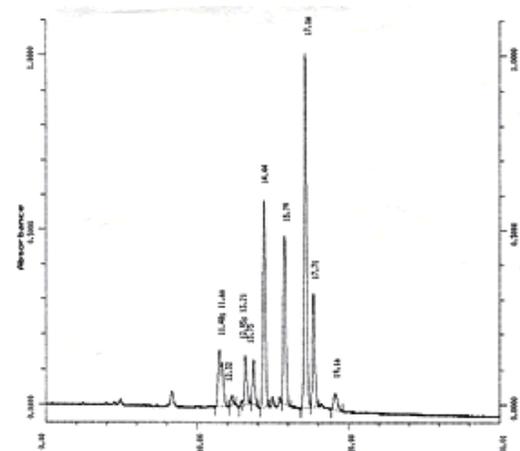


Figure 6 a – MeOH HPLC spectrum

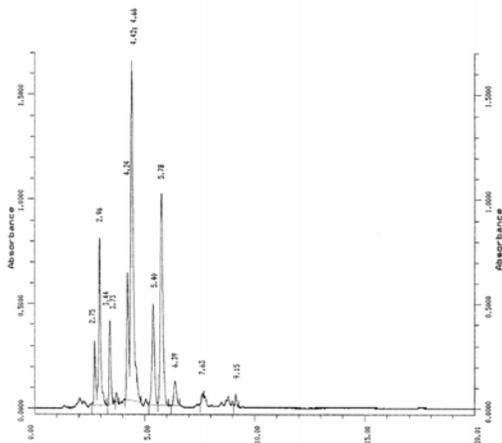


Figure 6 b – DCM HPLC spectrum

DCM extract: (figure 6b)
Retention times (mins): 2.75; 2.96; 3.44;
4.23; 4.65; 5.40; 5.78

Ethanol (70%) soluble extractive value: not less than 26.0% (range: 26.53-36.81%)

Purity tests

Assay

Not yet available

Major chemical constituents

Preliminary chemical tests in our laboratories demonstrated the presence in 2/3 collections of alkaloids, but not of saponins, tannins and reducing sugars nor of cardiac, cyanogenic and anthraquinone glycosides. There is currently no information regarding the secondary chemistry of this species available in the published literature.

Dosage forms

Preparations of this species are used externally in the form of an aqueous decoction as a lotion or eyewash, or as an ointment prepared in a fatty base such as butter or lard. An aqueous infusion may be taken orally.

Medicinal uses

Galenia africana is used to treat venereal sores, wounds, eye infections and skin diseases. For this purpose, it is often

combined with other species, *Melianthus major*, *M. comosus* and *Lobostemon fruticosus* being common co-ingredients^{GR1}. In the Montagu district an infusion is taken for bladder infections and prostate disorders^{GR20}. There are records of its use to relieve toothache, a small leaf plug being chewed and held in the mouth^{GR11}.

Pharmacology/bioactivity

No information appears to be available in the literature. Preliminary *in vitro* assays for antimicrobial activity carried out in our laboratories, using aqueous extracts of dried material, did not indicate inhibition of the growth of *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Candida albicans* or *Mycobacterium smegmatis*.

Contraindications

None known.

Adverse reactions

None recorded by current users. Early records mention blistering of the oral mucous membranes following the chewing of fresh leaf to relieve toothache.

Precautions

No special precautions

Dosage

To be established

