

CISSAMPELOS CAPENSIS HERBA

Definition

Cissampelos Capensis Herba consists of the fresh or dried leaf of *Cissampelos capensis* L.f. (Menispermaceae)

Synonyms

Antizoma capensis (L.f.) Diels
Antizoma capensis (L.f.) Diels var. *pulverulenta* (harv.) Diels
Cissampelos fruticosa L.f.
Cissampelos humilis Poir.

Vernacular names

Dawidjieswortel (A); mayisake (Xh)

Description

Macroscopical ¹



Figure 1 – Live plant

Dioecious perennial sprawling or twining shrublet; **leaves** entire, alternate, almost without hairs, ovate to heart-shaped, up to 2.5cm wide x 2.5cm long, on thin petioles up to 3cm long; **flowers** (Feb-May) axillary, velvety-hairy, greenish, females 1-2 with 1 sepal and petal, males in cymose inflorescences; **fruit** a small fleshy orange berry; **root** up to 2.5cm in diameter with

¹ Botha, D.J. (1980). The identity of *Antizoma harveyana* Miers ex Harv. and *A. capensis* L.f. Diels. *Journal of South African Botany* **46**(1): 1-5.

grey-brown bark, cream in T/S with distinct brown medullary rays.



Figure 2 – line drawing

Microscopical

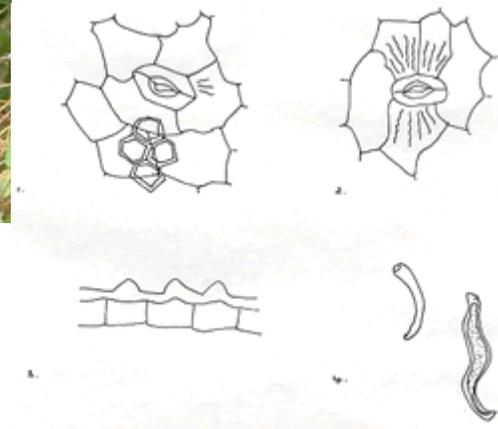


Figure 3 – microscopical features

Characteristic features are: the absence of calcium oxalate crystals in the leaf lamina; the occasional unicellular clothing hairs of leaf and stem, up to 240µ long, usually loose in the powdered drug, with thin slightly roughened walls (4); the cells of the leaf epidermis with striated cuticle and thickened walls (1 and 2); the anomocytic stomata of

both leaf surfaces; the papillate cells of the leaf margin (3).

Crude drug

Collected as required or available in the marketplace as bundles of fresh or dried leaf and stem; texture thin and soft, odour faint characteristic, colour light green.

Geographical distribution

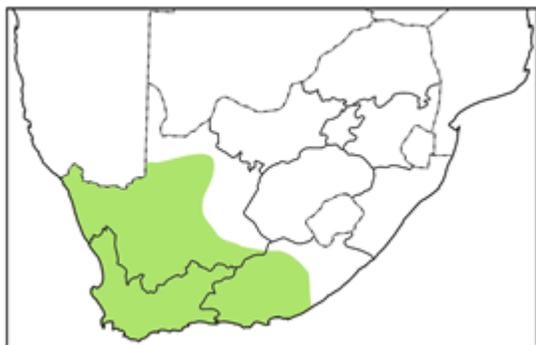


Figure 4 – distribution map

Sandy slopes and scrub of the Northern, Western and Eastern Cape Provinces, northwards into Namibia.

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) R_f values of major compounds: 0.42 (sage green); 0.63 (green); 0.69 (purple); 0.98 (purple-brown); cineole: 0.83 (blue-purple).

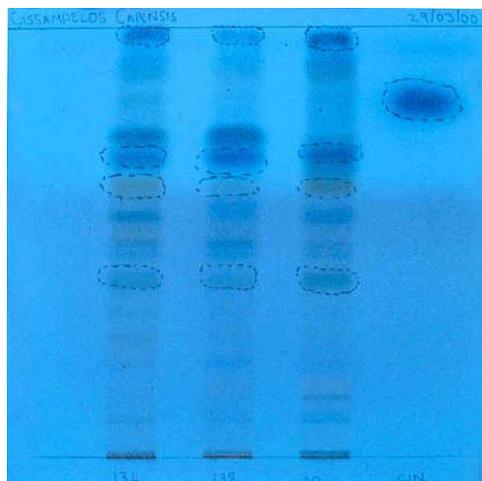


Figure 5 – TLC plate.

HPLC on C_{18} column, method according to Appendix 2b.

Major compounds:

Methanol extract: (figure 6a)

Retention times (mins): 2.71; 11.42; 26.98; 28.06

DCM extract: (figure 6b)

Retention times (mins): 1.31; 3.33; 6.55

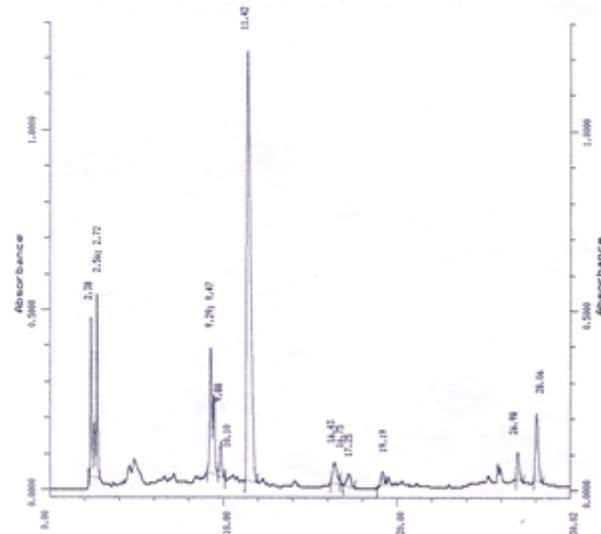


Figure 6 a – MeOH HPLC spectrum

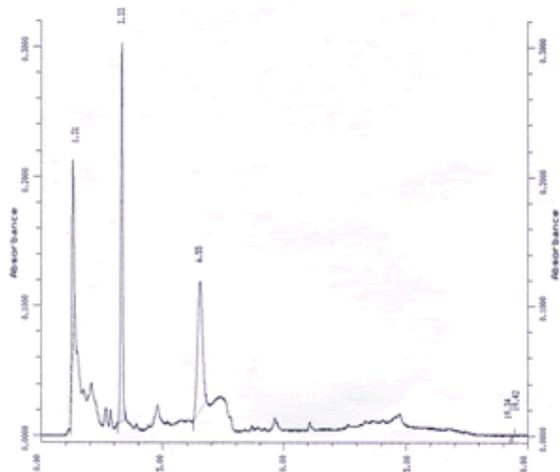


Figure 6 b – DCM HPLC spectrum

Ethanol (70%) soluble extractive value: not less than 25% (range: 25.07-31.51%)

Purity tests

Assay

Not yet available

Major chemical constituents

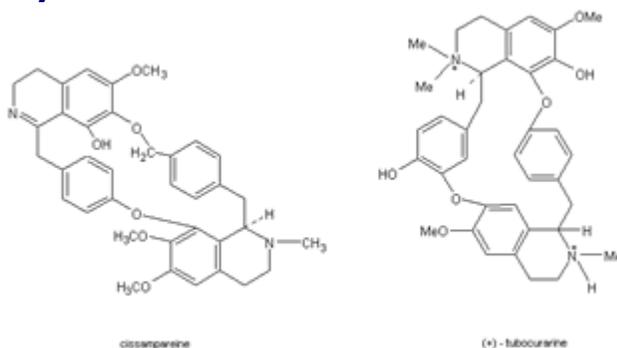


Figure 7 – chemical constituents

Phytochemical tests in our laboratories indicated the presence of alkaloids, saponins, tannins and reducing sugars but not of cardiac nor of anthraquinone glycosides. There is nothing in the published literature concerning the secondary chemistry of this species. The chemical profile of the family typically includes benzylisoquinoline, bisbenzylisoquinoline (e.g. tubocurarine, cisampareine), diterpene and triterpene alkaloids, as well as saponins.

Dosage forms

A leaf infusion or tincture is taken orally and a poultice or paste applied externally. Preparations of the root of this species are also extensively used, both internally and externally, and are the subject of a separate monograph.

Medicinal uses

Leaf preparations are taken orally for the treatment of upset stomach, bladder ailments, diarrhoea and colic and applied externally to heal wounds and sores, including venereal lesions and snakebite. Mixed with *Pentzia incana* and *P. globosa*, preparations of this species have been used both internally and externally to treat erysipelas.^{GR1, 20}

Pharmacology/bioactivity

No pharmacological information is available for this species. The related *Cissampelos pareira* is used in Asian traditional medical practice for the treatment of intermittent fever, heatstroke and colic and *Cissampelos* species are known to have been used as ingredients in South American *curares* (arrow poisons).^{GR9} The mode of action in the latter case is presumably to do with muscle relaxation and may resemble that of tubocurarine.

No activity against *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Candida albicans* or *Mycobacterium smegmatis* was shown by aqueous leaf extracts used in preliminary assays for *in vitro* antimicrobial activity in our laboratories.

Contraindications

None known at present

Adverse reactions

None recorded

Precautions

In view of the likely presence of highly bioactive alkaloids of this species, it would be prudent to undertake basic pharmacological studies and/or a survey of current traditional practice, in order to establish a suitable treatment regimen.

Dosage

To be established.



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