ONCOSIPHON SUFFRUTICOSUM HERBA

Definition

Oncosiphon Suffruticosum Herba consists of the fresh or dried leaves and smaller stems of *Oncosiphon suffruticosum* (L.) Källersjö (Asteraceae).

Synonyms

Cotula tanacetifolia L.
Pentzia suffruticosa (L.) Hutch. ex Merxm.
Pentzia tanacetifolia (L.) Hutch.
Tanacetum suffruticosum L.

Vernacular names
Stinkkruid, wurmstinkkruid, wurmbossie (A)

Description

Macroscopical [1], [GR3]

Bushy aromatic annual herb to 500mm; **leaves** finely dissected, bipinnatisect, up to 40mm long, with narrow leaf lobes; **flowers** (Jul-Dec) discoid, borne on a conical receptacle in dense many-headed corymbs; individual heads 3-7mm in diameter, on slender peduncles; florets yellow with glabrous involucral bracts.

Figure 1: Live plant

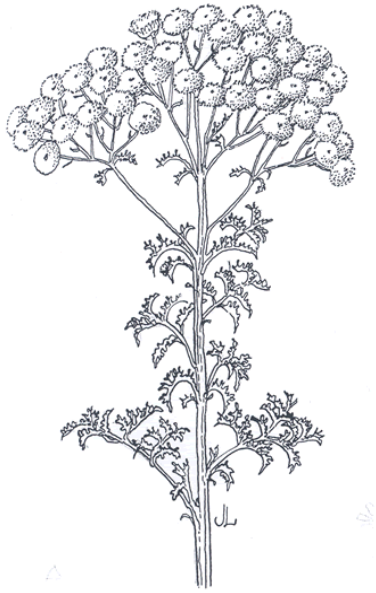


Figure 2: line drawing

Microscopical

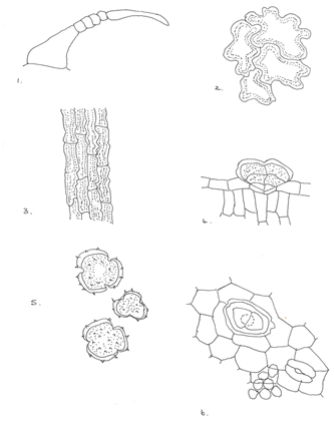


Figure 3: microscopical features

Characteristic features are: fragments of leaf lamina with clothing and glandular hairs; the clothing hairs more numerous in young leaves, multicellular, adpressed, with swollen base, several (3-6) small beadlike intermediate cells and a long tapering terminal cell, the latter often shrunken and twisted (1); the numerous glandular hairs, 2-celled, sessile, up to 70µ in diameter (4); pollen grains up to 20µ in diameter, globose with sculpted exine (5); fragments of yellow anthers with minute calcium oxalate cluster crystals at the junction of anther and

[1] Källersjö, M. (1988). A re-classification of *Pentzia* (Asteraceae). *Botanical Journal of the Linnean Society* **96**: 299-322.

filament, each crystal 4-5µ in diameter; the epidermal cells of the leaf lamina with sinuous walls, anomocytic stomata and single palisade layer below upper epidermis (2+6); the fragments of the corolla (3); the abundant oil globules, staining red with Soudan IV.

Characteristic features are: fragments of leaf lamina with clothing and glandular hairs; the clothing hairs more numerous in young leaves, multicellular, adpressed, with swollen base, several (3-6) small beadlike intermediate cells and a long tapering terminal cell, the latter often shrunken and twisted; the numerous glandular hairs, 2-celled, sessile, up to 70µ in diameter; pollen grains up to 20µ in diameter, globose with sculpted exine; fragments of yellow anthers with minute calcium oxalate cluster crystals at the junction of anther and filament, each crystal 4-5µ in diameter; the epidermal cells of the leaf lamina with sinuous walls; the fragments of the corolla; the abundant oil globules, staining red with Soudan IV.

Crude drug

Collected as required or obtainable in the marketplace as bundles of dark green leafy twigs with flowers in season; taste bitter, acrid; scent pungent aromatic; texture sticky.

Geographical distribution

Widespread on dry sandy flats and slopes, coastal and inland, from Southern Namibia south to the Cape Peninsula and the western Karoo, and eastwards as far as Gansbaai in the Western Cape. Often forms large stands on disturbed sites.

Figure 4: distribution map

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: 0,13 (yellow); 0,24 (yellow); 0,27 (blue-grey); 0,37 (pink); 0,41 (purple); 0,46 (purple); 0,82 (purple).

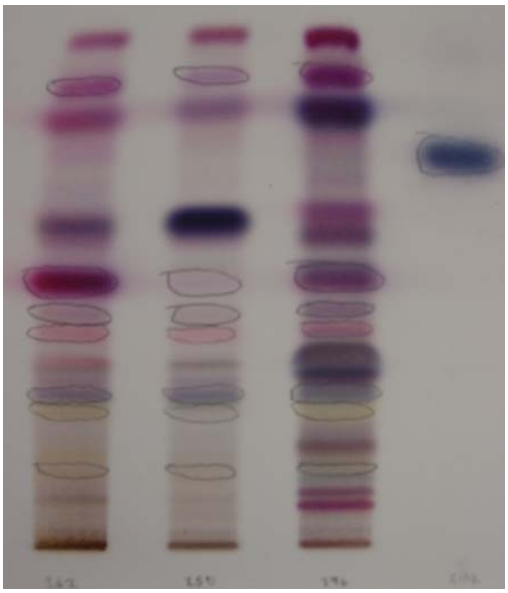


Figure 5: TLC plate

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

Major compounds:
Methanol extract:
Retention times (mins): 5.50; 6.14; 6.34; 7.91; 8.06; 8.29

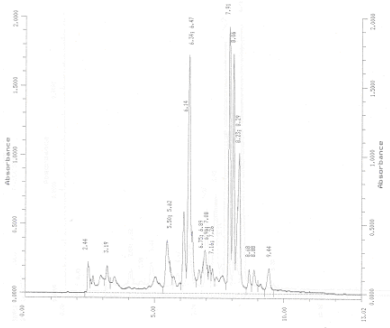


Figure 6: HPLC spectrum

Ethanol (70%) soluble extractive value: not less than 29.0% (range: 29.72-32.54%)

Volatile oil content: not less than 0.5% (dark yellow-green)

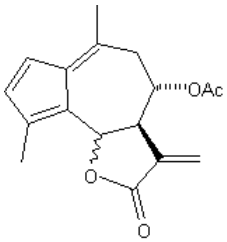
Purity tests

Assay

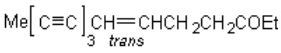
Not yet available

Major chemical constituents

The secondary chemistry of *Oncosiphon suffruticosum* (formerly *Pentzia suffruticosa*) has not been studied. Investigations of the aerial parts of other *Pentzia* species [2, 3] have revealed the presence of sesquiterpene lactones: fulvenoguaianolides, glaucolides and germacranolides, as well as C_{14} acetylenic compounds and monoterpene derivatives. (figure 7)



Pentziafulvenolide



typical *Oncosiphon*acetylene

Figure 7: chemical constituents

Dosage forms

An aqueous infusion or dried ground powder are taken orally; a leaf poultice is applied externally.

Medicinal uses [GR1, 11, 19, 20]

Originally a Khoi-khoi and San remedy, this species, said to be both diuretic and diaphoretic, is today used as a tonic, antispasmodic and anthelmintic and to treat flatulence, gout, amenorrhoea, fever, asthma, diabetes and convulsions. A leaf poultice is said to reduce inflammation.

Pharmacology/bioactivity

No information is available in the published literature concerning the bioactivity of this species. *In vitro* antimicrobial activity of aqueous extracts against *Staphylococcus aureus* and *Pseudomonas aeruginosa* was observed, in the concentrations used for disc assays in our laboratories. No activity was noted against *Candida albicans* or *Mycobacterium smegmatis.*

Contraindications

None known.

Adverse reactions

None reported.

Precautions

This species should be used with caution by individuals prone to allergy.

Dosage

To be determined.

[2] Bohlmann, F. and Zdero, C. (1978). New sesquiterpenes and acetylenes from *Athanasia* and *Pentzia* species. *Phytochemistry* **17**: 1595-1599.

[3] Zdero, C. and Bohlmann, F. (1990). Glaucolides, fulvenoguianolides and other sesquiterpene lactones from *Pentzia* species. *Phytochemistry* **29(1)**: 189-194.