

CHIRONIA BACCIFERA HERBA

Definition

Chironia Baccifera Herba consists of the fresh or dried aerial parts of *Chironia baccifera* L. (Gentianaceae).

Synonyms

Vernacular names

aambeiebessie, bitterbos (A), Christmas berry

Description

Macroscopical¹



Figure 1 –Live plant



Figure 2 – line drawing

A neat rounded, much-branched perennial shrub to 70cm in height; **leaves** sessile, linear, soft to slightly succulent, 5-20mm long × 1-2.5mm wide, glabrous, bright green; **flowers** (Nov-Jan) solitary, terminal, deep pink, shortly tubular, up to 20mm in diameter with prominent yellow stamens inserted in the mouth of the tube; **fruit** (Jan-Mar) a glossy red berry, ± 7mm in diameter, with many black seeds.

Microscopical

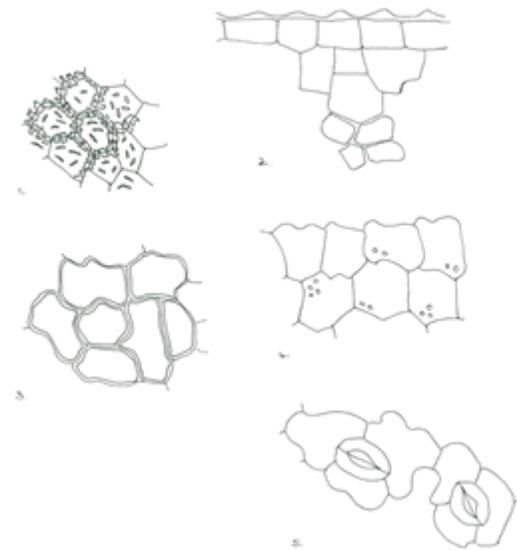


Figure 3 – microscopical features

Characteristic features are: the absence of hairs or calcium oxalate crystals of leaf and stem; the papillose cells of the leaf epidermis, with sinuous thickened and cuticularised walls (3), brick-shaped in sectional view (2); the crystalloid bodies of the epidermal and subepidermal layers (4); the large stomata of the leaf lamina, up to 150µ in diameter (5).

Crude drug

Collected as needed or found in the marketplace as bundles of fresh or dried twigs, often with flowers and fruit; colour bright green-yellow, odour faint bitter-aromatic; texture soft when fresh.

Geographical distribution

¹ Marais, W. and Verdoorn, I.C. (1963). Gentianaceae. *Flora of Southern Africa* 26: 171-243. Botanical Research Institute, Pretoria.



Figure 4 – distribution map

Widespread in the Western and Eastern Cape Provinces, from Namaqualand south to the Cape Peninsula and eastwards into KwaZulu-Natal, in dry sandy soil from sea-level to lower mountain slopes, often as an undershrub on dunes or at forest margins.

Quality standards

Identity tests

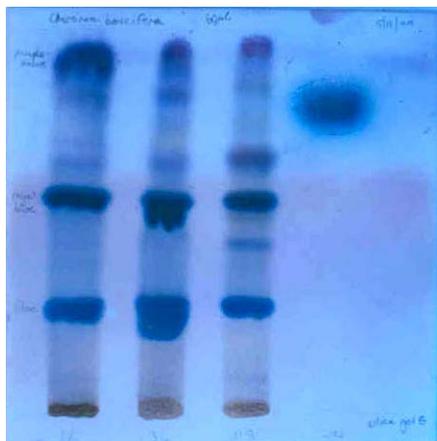


Figure 5 – TLC plate.

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: 0,28 (lilac); 0,55 (royal blue); 0,94 (purple-mauve); cineole: 0,82 (blue-purple)

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

Major compounds:

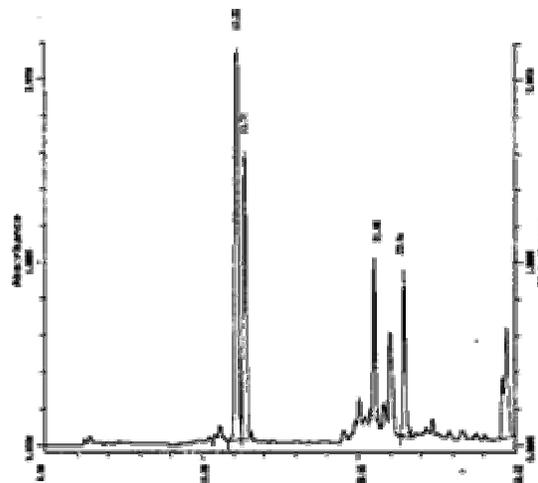


Figure 6 – HPLC spectrum

Methanol extract: (figure 6)
Retention times (mins): 12.23; 12.76; 21.05; 22.96

Ethanol (70%) soluble extractive value:
not less than 33,0% (range: 33.63-41.60%)

Purity tests

Assay

Not yet available

Major chemical constituents

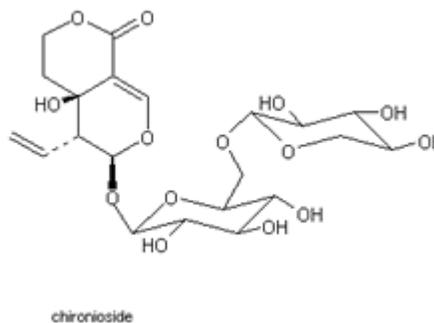


Figure 7 – chemical constituents

Microchemical tests in our laboratories indicated the presence of tannins and saponins but not of alkaloids nor of cardiac, cyanogenic or anthraquinone glycosides. The detection of tannin confirms the results

of earlier studies². The roots of this species have been shown to contain various secoiridoids: chironioside, eustomoside, gentiopicroside, sweroside and swertiamarin³. These are bitter principles, some of which occur in other members of Gentianaceae used in medicine e.g. the yellow gentian *Gentiana lutea*, which was at one time used as an appetite stimulant. It is not known whether secoiridoids are also present in the above-ground parts of this species. The triterpene saponin oleanolic acid has been reported from the leaves of this species⁴.

Dosage forms

Used mainly as an aqueous infusion, taken orally or applied externally. The leaves may be made into a poultice with fat, butter or oil.

Medicinal uses

Taken orally, an infusion of this herb is used as a purgative in the treatment of haemorrhoids and as a blood purifier in cases of recurrent boils, acne or veld sores. For the latter, a leaf poultice may also be applied to the affected area. Combined with *Leonotis leonurus* and *Helichrysum petiolare*, an infusion is said to be beneficial in the treatment of hypertension. Pappe (see GR¹⁹) reported that *Chironia baccifera* was an effective remedy for syphilis.

Pharmacology/bioactivity

Little information is available regarding the pharmacology of this herb.

Contraindications

None reported

² Bate-Smith, E.C. (1972). Ellagitannin content of leaves of *Geranium* species. *Phytochemistry* **11**: 1755-1757.

³ Wolfender, J-L, Hamburger, M., Hostettmann, K., Msonthi, J.D. and Mavi, S. (1993). Search for bitter principles in *Chironia* species by LC-MS and isolation of a new secoiridoid diglycoside from *Chironia krebsiana*. *Journal of Natural Products* **56(5)**: 682-689.

⁴ Fourie, pers. Comm.. (1985).

Adverse reactions

Prolonged or excessive use of this herb are said to induce sleepiness and promote heavy perspiration.

Precautions

No special precautions

Dosage

Fresh herb (30g) is infused until cold with one litre of boiling water. If dried herb is used, 15g should be infused with one litre of boiling water.

Internal use

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

Children 6-12years: one quarter of a teacupful (45ml), diluted with boiled water, three times daily.

External use

The aqueous infusion, prepared as described above, may be applied with a clean cloth or cotton wool to sores, boils, acne, eczema or external haemorrhoids. For the same purpose, fresh herb, softened by heating with a little fresh cooking oil, may be applied as a paste on clean lint or cloth and held in place with a bandage.

