

# NYLANDTIA SPINOSA HERBA

## Definition

Nylandtia Spinosa Herba consists of the flowering tops of *Nylandtia spinosa* (L.) Dumort. and of *N. scoparia* (Eckl. and Zeyher) Goldblatt and J.C.Manning.

## Synonyms

*Mundia spinosa* (L.) DC

### Vernacular names

Skilpadbessie, bokbessie, duinebessie (A), mmaba (Ts)

## Description

### Macroscopical



Figure 1a – Live plant flowers



Figure 1b – Live plant fruits

*Nylandtia scoparia* has recently been recognised as a new species and distinguishable from *N. spinosa*, of which it was formerly considered an ecological race,

by its taller habit, weak spinescence and later flowering season<sup>GR3</sup>.

Erect or rounded, stiff, spinescent, sparsely leaved deciduous shrub reaching 2.5m in height; **leaves** borne on short stalks on spine-tipped branches, oblong, subsessile, 3-7 × 2-3mm; **flowers** (June-Aug) solitary, axillary, purple, lilac, pink, occasionally white, small (±5mm long), pea-like, with fringed crest on lower petal; **fruit** (Oct-Dec) an edible glossy red berry.



Figure 2 – line drawing

### Microscopical

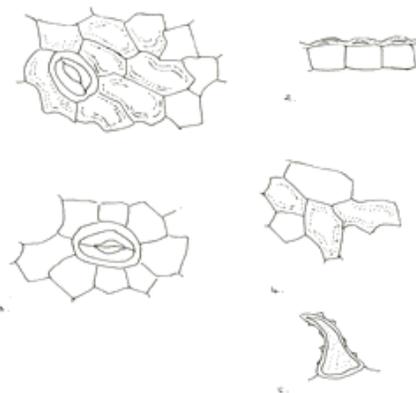


Figure 3- microscopical features

Characteristic features are: the polygonal cells of the leaf epidermis with thick striated cuticle and actinocytic stomata (1 - 4); the unicellular curved clothing hairs of the leaf lamina, up to 100 $\mu$  long, with warty walls and acute apex (5); the absence of calcium oxalate crystals.

### Crude drug

Collected when needed or available in the marketplace as bundles of fresh or dried young stems and leaves. Flowers and fruit may be present. Odour faint pleasant, texture stiff, thorny.

### Geographical distribution

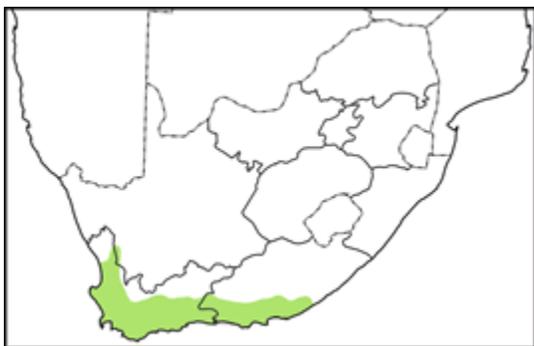


Figure 4 – distribution map

*Nylandtia scoparia* is confined to the Western Cape Province, from the Bokkeveld Mountains to Darling, while *N. spinosa* is more widespread, occurring in the Western and Eastern Cape Provinces and Namaqualand. Both grow on sandy flats and slopes, sometimes side by side.

### 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.

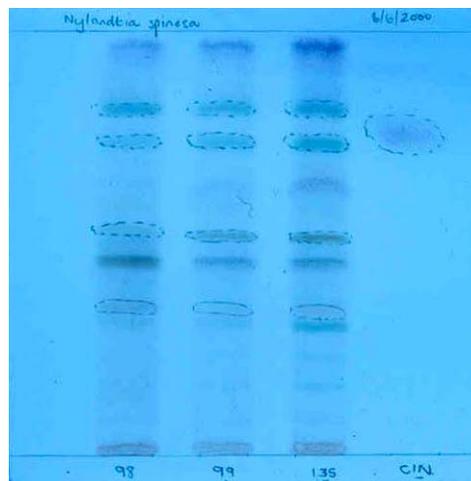


Figure 5 – TLC plate

R<sub>f</sub> values of major compounds: 0,36 (tawny brown); 0,52 (acid green); 0,74 (sage green); 0,81 (sage green); cineole: 0,77 (blue-purple)

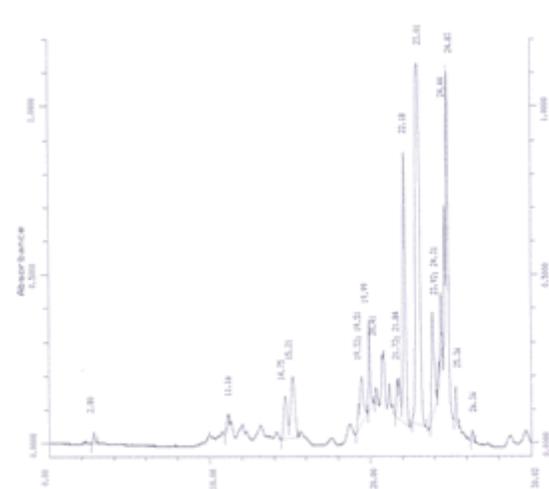


Figure 6 – HPLC spectrum

HPLC on C<sub>18</sub> column, method according to Appendix 2b.

#### Major compounds:

Methanol extract  
Retention times (mins): 22.18; 23.01

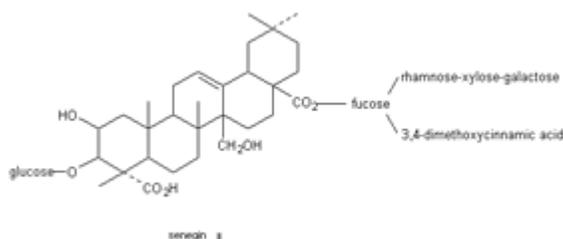
Ethanol (70%) soluble extractive value: not less than 32.58% (range: 32.58-39.95%)

#### Purity tests

#### Assay

Not yet available

#### Major chemical constituents



**Figure 7 – chemical constituents**

There is nothing in the published literature concerning the secondary chemistry of this species. Phytochemical tests in our laboratories indicated the presence of saponins, tannins and reducing sugars but not of alkaloids nor of anthraquinone glycosides. Cardiac glycosides were recorded as present in 1/3 collections. Triterpenoid saponins e.g. senegin (*Polygala senega*) are characteristic of the family <sup>GR9</sup>.

### Dosage forms

A leaf decoction or infusion is taken orally.

### Medicinal uses

This herb is currently used as a remedy for stomach ache, acidity and flatulence in children. It is regarded as having narcotic properties and being of value in the treatment of sleeplessness and nervous disorders. The root is used by the Tswana people as a malaria remedy and is reputed to promote sweating <sup>GR1</sup>. It was formerly used as a treatment for phthisis <sup>GR19</sup>.

### Pharmacology/bioactivity

Little is known of the pharmacology of this species. Other species in the family, notably those belonging to the large genus *Polygala*, are used as expectorants, diaphoretics, sedatives and tonics in both traditional and allopathic systems of medicine.

### Contraindications

None known

### Adverse reactions

None recorded

### Precautions

No special precautions

### Dosage

To be determined

