SALVIA LUTEA HERBA

**Definition**

Salvia Lutea Herba consists of the fresh or dried flowering tops of *Salvia africana-lutea* L. (Lamiaceae).

**Synonyms**

*Salvia aurea* L.  
*Salvia eckloniana* Benth.

**Vernacular names**

bruinsalie, strandsalie, geelbloomsalie (A), dune sage

**Description**

**Macroscopical**

Branched woody shrub to 2 m, with densely leafy tomentose stems, dotted with orange-red glands; **leaves** simple, alternate, petiolate, grey-green, leathery, aromatic, 15-35 (-55) × 6-20 (-40) mm, elliptic to obovate, entire to crenate, tomentose; **flowers** (Jun-Dec) borne in a usually dense inflorescence of 3-12 verticils, each comprising 2-4 flowers and subtended by persistent bracts; **calyx** campanulate, expanding to 30mm long in fruit, purplish, membranous, with short spreading hairs and orange-red glands; **corolla** golden-brown to red-brown ±35-45 mm long with upper lip twice the length of the lower lip; **fruit** a nutlet.

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**Microscopical**

Characteristic features are: the numerous uniseriate 2-3 celled clothing hairs of upper and lower leaf epidermis and stem, more numerous on lower leaf surface, forming a dense carpet-like layer; individual hairs are thick-walled, warty and ± 100m in length (1); the glandular trichomes of leaf and stem, with unicellular stalks and 2-4 celled heads ± 25m in diameter, with yellow-brown contents (3-5); the distinctive glandular hairs of the upper leaf surface with unicellular stalks and 8-celled heads ± 45-80m in diameter and

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yellow-brown contents (2); the occasional spherical pollen grains, ± 20m in diameter, with spiny exine (9); the cells of the leaf epidermis with sinuous walls, striated cuticle and stomata raised above the level of the surrounding cells (7); the cells of the mesophyll with granular contents; the absence of calcium oxalate crystals and palisade layer; the starch grains of the leaf mesophyll (8).

**Crude drug**

Collected fresh when needed or sold in bundles of dried to semi-dried material comprising mainly leaves with occasional flowers and fruits. The leaves are grey-green, pungently aromatic and leathery.

**Geographical distribution**

![Figure 4 – distribution map](image)

Occurs in coastal dune scrub and arid fynbos on rocky slopes to 800m, from Namaqualand to the Cape Peninsula and eastwards to Port Alfred (Eastern Cape Province).

**Quality standards**

**Identity test**

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: 0.14 (light purple); 0.22 (blue); 0.53 (blue-green); 0.58 (purple); 0.64 (brown-mustard yellow); cineole: 0.8 (light blue)

HPLC on C$_{18}$ column, method according to Appendix 2b.

**Major compounds:**

![Figure 5 – TLC plate](image)

![Figure 6 – HPLC spectrum](image)
Methanol extract (Figure 6)
Retention times (mins): 19.69; 21.45; 24.51

Note: The peaks for which retention times are given have not at the time of writing been confirmed as co-identical. Peak 1 represents more than one co-eluting compound.

Ethanol (70%) soluble extractive value:
not less than 21.6% (range: 21.59-24.54%)

Volatile oil content:
not less than 0,67% (0,67-1,5%)

Purity tests
Assay
Not yet available

Major chemical constituents

![Chemical Constituents Image]

Figure 7 – chemical constituents

Little is known of the secondary chemistry of this species. Microchemical tests carried out in our laboratories indicated the presence of tannins, alkaloids, triterpene steroids and quinones. Cyanogenic glycosides and saponins were not detected. The chemistry of many other members of the genus Salvia (±900 species), particularly those used medicinally or as culinary herbs, has been well researched. Compounds isolated include diterpene abietanes, isopimarene derivatives and steroids. The essential oil of Salvia officinalis is known to contain camphor as well as α- and β-thujones.

Dosage forms

An aqueous decoction or infusion is taken orally or applied locally as a skin wash.

Medicinal uses

Taken orally to treat respiratory tract problems, influenza, fever, headache, digestive disorders; used externally as a wash to treat minor burn wounds.

Pharmacology/bioactivity
Brine shrimp lethality assay:
Activity was shown by extracts prepared from dried leaf material by decoction, at a concentration of 1 000mg/ml.

Antibiotic activity assay

In vitro antimicrobial activity against Staphylococcus aureus was shown by aqueous extracts prepared from dried leaf material by decoction, at concentrations of 10mg/ml and 5mg/ml. No activity was shown against Pseudomonas aeruginosa, Candida albicans or Mycobacterium smegmatis.

In vivo antipyretic activity of aqueous extracts of dried leaf against LP-induced increase of rectal temperature was demonstrated in rats (dose: 100mg/kg IP). Similar extracts showed analgesic activity in mice (dose: 100mg/kg IP), in both the hot plate test and the acetic acid–induced writhing assay.

Many Salvia species are used as traditional medicines in various parts of the world. Some have been shown to possess antibacterial, antioxidant, cardiovascular, antidiabetic and antitumour activity. See for a recent review of the bioactivity of the genus.


Contraindications

None known.

Adverse reactions

None reported. However, while the secondary chemistry of this species has not been the subject of much scientific study that of other *Salvia* species is well known. *Salvia officinalis* (BPC 1934; BHP 1996), in addition to various phenolic acids (e.g. ferulic, chlorogenic, rosmarinic acids) and tannins, contains 1-2.8% of volatile oil, of which the major components are α- and β-thujone and camphor. The convulsant activity of sage oil, attributable to these terpenoids, has been documented in both animals and humans⁴.

*In vivo* hypoglycaemic activity (rabbit) has also been reported for various *Salvia* extracts used in phyotherapy⁵ ⁶. Preparations of *Salvia africana-lutea* and *S. africana-caerulea* should therefore be used with caution in patients receiving hypoglycaemic or anticonvulsant therapy.

Sage is traditionally reputed to possess abortifacient activity and to affect the menstrual cycle⁷. This is attributable to the presence of thujones, which are known to be abortifacient and emmenagogic, in the volatile oil. Preparations of indigenous *Salvia* species should therefore be used with caution in pregnant women.

Precautions

None reported.

Dosage

An infusion may be made with two tablespoonsful (±7.0g) of dried ground herb to which is added one litre of boiling water. The mixture is strained when cold. If fresh herb is used, four tablespoonsful of chopped leaf are infused with one litre of boiling water.

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

**Children (6-12 years):** Quarter of a teacupful three times daily.

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