

Lavandula stoechas L.
Labiatae



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■ Morphological description

An evergreen shrub from 1/2-1 m. tall (depends upon subspecies or cultivar). The narrow, linear, stalkless leaves are untoothed, with (rolled) margins, covered with a fine grey down, usually giving a grey-green overall appearance. The habit is stiffly branched and more open than other species of *Lavandula*. The flower stalk (peduncle) is usually shorter than the flower spike (in *L. stoechas subsp. stoechas*) but is often longer as in *L. stoechas atlantica* and *L. stoechas pedunculata* and cultivars derived from these. The *squarish* flower spike is composed of closely set fertile bracts that house the corollas (actual flowers) and is topped by a tuft of large, showy, sterile bracts, which are the more conspicuous part of the inflorescence.

L. stoechas Otto Quast is a usual cultivar.

L. stoechas pedunculata Atlas: From the Atlas Mountains in Morocco, this lavender grows to about 3ft, x 3ft; it is similar to *L. stoechas* Otto Quast, but is taller, more upright and with narrower leaves and longer and thinner flower spikes of smaller plum-purple bracts, which appear between spring and autumn.

L. stoechas atlantica: A Moroccan endemic, closely related to *L. stoechas pedunculata*, is usually found growing at high altitudes on calcareous soils. Compact in form, with long peduncles and comas (tuft of sterile bracts), this is quite a spectacular plant.

■ Geographical distribution

Global: Southwest Europe, the Near East and North Africa.

Lavandula stoechas L.

Lavandula is derived from the Latin lavare, to wash, and was probably the lavender so extensively used in classical times by the Romans and the Libyans, as perfume for the bath. 'Stoechas' is the ancient Greek name for some islands off the Marseilles coast, where this species is abundant.

Arabic: Halhal, moqif rwah, astuhudus, meharga.

حلل - موقف - ارواح - استخدوس - محرك

Berber: Amezzir, timerza, imezzir.

English: Spanish lavender (in America), French lavender (in Europe), Italian lavender, top lavender

French: lavande stoechade, lavande papillon, lavande stéchas, lavande à toupet

■ Ecology

L. stoechas is native to dry hills, garrigue, maquis, or open woodlands, on limestone or granite soils, often among rockroses. This almost year-round bloomer has a long history of cultivation. Heat tolerance: good. Sun exposure: full sun. Watering needs: little water when established. Propagation: seeds, stem cuttings in summer of half ripened shoots with heels.

■ Status

Not an IUCN threatened species.

■ Part used

The flowering tips, dried flowers gathered just before fully unfolding, leaves.

■ Constituents

L. stoechas collected in Morocco was studied for its essential oil content. The yields were from 0.9 to 1.4 depending on the region of collection. Fenchone and camphor represent 47 to 84.3 %; one or the other compound may be dominant depending on the sample's origin. The other constituents are alpha-pinene, beta-pinene, camphene, eucalyptol, para-cymene, linalol, borneol, borneol acetate, carvacrol, iso-eugenol, iso-eugenol-methylether. The sample from Idni (High Atlas) gave a good yield after distillation (1.4 %) and have high levels of camphor (72.8 %). They may be used as a source of

natural camphor. The essential oil composition is qualitatively similar to that found in other Mediterranean countries.

The roots of *L. stoechas* ssp. *stoechas* from Turkey were investigated and afforded triterpenes: 18-hydroxy-27-norolean-12,14-dien-30-al-28-oic acid, 3beta-hydroxy-1-oxo-olean-12-ene-30-al-28-oic acid, 16beta-hydroxy-lupeol-3-O-palmitate, 16 beta-hydroxy-lupeol-3-O-myristate, 11-oxo-beta-amyrin, monogynol A cis-coumaryl ester, monogynol A trans coumaryl ester, 18-hydroxy-27-norolean-12,14-dien-30-al-28-oic acid and 3 beta-hydroxy-1-oxo-olean-12-ene-30-al-28-oic acid, aromatics : cis-4-O-methyl caffeic acid octanol ester and trans-4-O-methyl caffeic acid octanol ester, and two steroids.

■ Pharmacological action and toxicity

Lavender's popularity in aromatherapy means that most people are aware of its relaxing and sedative effects. Results of several studies support its efficacy as a relaxant. Researchers tested the sedative properties of lavender essential oil and its main constituents, linalool and linalyl acetate, on mice. After inhaling lavender essential oil, the activity levels of the mice, previously injected with caffeine to induce hyperactivity, returned to near-normal levels. Also it was shown that aqueous-methanolic extract of *L. stoechas* flowers (600-mg./kg. dose) exhibited anti-convulsant and anti-spasmodic activities in laboratory mice. Another study reported results of a test of lavender essential oil's local anaesthetic activity. A lesser-known application for lavender essential oil is pain relief. It has traditionally been used on bee stings and burns. There have been several studies evaluating lavender's anti-septic, healing and pain-relieving properties. The insecticidal activities of essential oil extracts from leaves and flowers of *L. stoechas* and other aromatic plants against fourth-instar mosquito larvae were determined. Pure components (1,8-cineole, menthone, linalool, terpineol, carvacrol, thymol, (1S)-(-)-alpha-pinene and (1R)-(+)-alpha-pinene) were tested on the larvae. Thymol, carvacrol, (1R)-(+)-alpha-pinene and (1S)-(-)-alpha-pinene were the most toxic (LC50 = 36-49 mg. litre-1), while menthone, 1,8-cineole, linalool and terpineol (LC50 = 156-194 mg litre-1) were less toxic.

Actions: It is reported to be analgesic, antibacterial (*in vitro*), anticonvulsant, antidepressant, antiflatulent, antihyperglycaemic (oil), antihypertensive (animal studies), antirheumatic, antiseptic, antispasmodic, carminative, cholagogic, diuretic, emmenagogic, a flavoring agent, an insect repellent, a mild sedative, a perfume, rubefacient (oil), sedative, spasmolytic, stimulant, stomachic, sudorific, tonic, uterine stimulant and vermifuge.

Toxicity: Large doses of the essential oil are considered to be a narcotic poison. Contrary to common belief, any essential oil including lavender must not be used neat (undiluted). Oil can cause dermatitis. *L. stoechas* oil is said to be more toxic than other lavenders-so use cautiously. Use oil under supervision only. *L. stoechas* oil should be contraindicated in babies, children, and pregnant women.

Drug interactions: Due to the diuretic action of this herb the following drug interactions are possible: may potentiate other diuretics and increase the risk of hypokalemia. When taken with corticosteroids there is a risk of hypokalemia; if hypokalemia occurs, there is possible antagonism with antiarrhythmics and potentiation of muscle relaxants; there is increased risk of toxicity with anti-inflammatory analgesics; it antagonises antidiabetic (hypoglycaemic) drugs; and it may potentiate and/or interfere with antihypertensives. Due to the antihypertensive (hypotensive) action of this herb the following interactions are possible: When taken with anesthetics, an increased hypotensive effect can occur, as it potentiates antihypertensives; when taken with diuretic drugs, difficulty with diuresis and hypertension may result (antagonism of sympathomimetics).

■ Traditional medicine and local knowledge

The main uses all around Morocco of *L. stoechas* in a decoction are for : catarrh of the upper respiratory tract, sneezing, cough, asthma, bronchitis, and all colds (rheumatism, lumbago, etc.). A decoction may also be used for abdominal pain. A decoction of the flowering tips (two tablespoons in about 0.5 litres of water) is drunk hot once a day. The flowers may also be smoked alone or with Tobacco. In Marrakech, the mixture of one teaspoon of the powder of: *L. stoechas*, *Rosmarinus officinalis*, *thymus ciliatus*, *Artemisia herba alba*, *Mentha*

pulegium, *Corrigolia telephiifolia* is macerated in a glass of water for about 5 minutes and filtered. The filtrate is then given orally to babies suffering from gastro-intestinal disorders.

The plant may be applied to wounds and contusions as a vulnerary. In the Middle Atlas *L. stoechas* is used to aromatize the *Lben* (skim milk).

An infusion of flowering tips is used as a tonic, resolvent, stomachic, vulnerary, for headache, for cases of irritability, epilepsy, blenorragia, and as diaphoretic, pectoral, diuretic, antispasmodic and antirhumatic.

History: Used for its aromatic qualities by Greeks and Romans, lavender has scented washing water and baths ever since the Romans named it after lavare, to wash. *Lavandula vera* is known as "el *khzama*" in Morocco, where the dried flowers are an important ingredient in a herb and spice mixture known as "top of the shop." Ancient Egyptians created mummification casts that would last indefinitely by soaking linen in oil of lavender containing asphalt, wrapping the bodies with this and drying them in the sun until the casts were hard.

Diseases: It is used for catarrh of the upper respiratory tract, sneezing, coughs, asthma, bronchitis, rheumatism, lumbago, abdominal pain, gastro-intestinal affections headache, irritability, epilepsy blenorragia;

Used as resolvent, stomachic, vulnerary, diaphoretic, pectoral, diuretic, antispasmodic and antirhumatic.

Other indications: Abdominal distension, anxiety, colic, common cold, cough, depression, depressive headache, exhaustion, flatulent indigestion, gastritis, hyperglycemia, hypertension, inappetence, insomnia, migraine, nausea, neuralgia, restlessness, stress, toothache, vomiting. Topical Oil: Acne, burns, rheumatic pain, sores, stings.

■ Other uses of the plant (Ethnobotany)

All the forms of lavender are much visited by bees and are a good source of honey.

French oil, used for air fresheners, deodorants, disin-

fectants, and insecticides is extracted from this lavender.

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