



# LAVENDER

## DESCRIPTION

**PART USED:** The flowers.

**BOTANICAL DESCRIPTION AND HABITAT:** Lavender is native to the Mediterranean. It is cultivated commercially in France, southern Europe, and India, and in gardens throughout the U.S. and other temperate regions. Harvest the buds when the flowers are open, preferably on a warm, dry, sunny day.



English lavender (*Lavandula angustifolia*) is a woody, evergreen perennial (30–90 cm tall and 60–90 cm wide).<sup>1,2</sup> It has an upright, spreading habit with many short, crooked, branches that become woody with age. Younger branches are herbaceous, square-stemmed, finely pubescent, and aromatic. The stems have many opposite, sessile, lanceolate to linear leaves that are somewhat tomentose on both surfaces, especially when young; they are also quite fragrant.<sup>2</sup> The inflorescences are spike-like verticillasters with many compact whorls of small bilabiate, perfect flowers arranged along a tall stem. The color of the connate, five-petalled corolla ranges from blue to violet to lavender, with strongly fragrant connate calyx ranging from purple to grey. Most essential oil produced by the flower comes from oil glands on the calyx.<sup>1</sup> When mature, the flowers produce fruit common to the mint family, consisting of four small nutlets nestled in the persistent calyx.<sup>1,2</sup>

Spike lavender (*Lavandula latifolia*), also known as Portuguese lavender (50–100 cm tall), has broader, more spatulate leaves, and a more compressed inflorescence than *L. angustifolia*.<sup>3</sup> It yields three times more essential oil

### BOTANICAL NAMES:

*Lavandula angustifolia* (syn. *L. vera*, *L. officinale*),  
*L. latifolia*, *L. stoechas*, *L. dentata*,  
*L. × intermedia* (syn. *L. × hybrida*)

*Note:* Unless otherwise specified, this monograph refers to the uses of *L. angustifolia* (English lavender)

### COMMON NAMES:

English lavender, true lavender, lavender fine, spike lavender, lavandin, stoechas lavender, French lavender, Portuguese lavender, Spanish lavender, stickadove, elf lead, lavers, nard, spike  
*khuzaaama*, *lafand* (Arabic)  
*hoosam* (Armenian)  
*lavandula* (Bulgarian)  
*ljekovita lavanda* (Croatian)  
*levandule* (Czech)  
*lavendel* (Danish)  
*lavendel* (Dutch)  
*tupsupäälaventeli* (Finnish)  
*lavende* (French)  
*kopwehblume*, *lavendel*, *tabakblumen* (German)  
*lavanta* (Greek)  
*levendula* (Hungarian)  
*lofnarblóm* (Icelandic)  
*lavanda*, *nardo*, *spigot* (Italian)  
*rabenda* (Japanese)  
*rabandin* (Korean)  
*xun yi cao* (Mandarin)  
*lavendel* (Norwegian)  
*lawenda waskolistna* (Polish)  
*alfazema* (Portuguese)  
*lavanda* (Russian)  
*dharu* (Sanskrit)  
*espliego*, *lavanda alhuccema* (Spanish)  
*lavendel* (Swedish)  
*lawendeort* (Thai)  
*lavânta cicegi* (Turkish)  
*hoa oai huong* (Vietnamese)  
*lavendl* (Yiddish)

### FAMILY NAME:

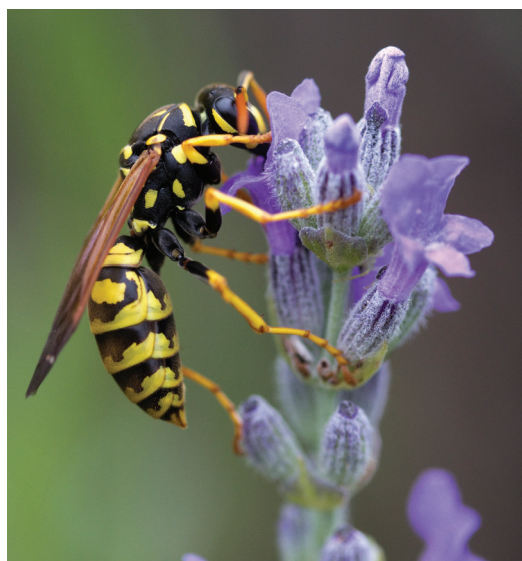
Lamiaceae (Labiatae)

than *L. angustifolia*, with a higher camphor and menthol content.<sup>3</sup> The aroma is sharper and lacks the delicate floral scent of *L. angustifolia*.<sup>1</sup> The inflorescence stalk is branched, often forming a trident shape (up to 25 cm tall).<sup>3</sup> The spike (5–8 cm long) is often interrupted.<sup>3</sup> Similar to *L. × intermedia* and *L. angustifolia*, the corolla is bilaterally symmetrical, with upper corolla lobes larger than the lateral lobes; inside is a bilobed stigma.

Lavandin (*Lavandula × intermedia* or *L. × hybrida*) is a naturally occurring, sterile hybrid of *L. angustifolia* and *L. latifolia*.<sup>3</sup> It is much larger than *L. angustifolia*, growing 60–150 cm tall.<sup>3</sup> The leaves average 7 cm long and 0.5 cm wide.<sup>5</sup> The inflorescence stalk is branched, and the spike is occasionally interrupted. Ovate bracts subtend the flowers. The corolla is lilac-purple to white and bilaterally symmetrical, with upper lobes larger than lateral lobes. The variety *Lavandula × intermedia* ‘Grosso’ is most often grown for essential oil production.<sup>3,4</sup> The volatile oil content is highly variable.<sup>3</sup>

Stoechas lavender (*Lavandula stoechas*), also known as Spanish lavender, French lavender, or topped lavender, grows 30–100 cm tall.<sup>3</sup> The linear to narrowly oblong leaves (1–4 cm long) are covered with a fine, grey down.<sup>3,6</sup> The corolla has blue to mauve lobes of similar size. The pink to dark purple flowers (6–8 mm long) are produced on short, compact spikes (2–3 cm long) with violet cordate-shaped bracts subtending each flower (4–8 mm).<sup>3,6</sup> At the apex of the spike are distinctive, long, purple bracts (10–50 mm long) arranged into an attractive corona.<sup>3</sup> Inflorescence stalks are 10–30 cm long.<sup>3</sup> This species is native to southwestern and south-central Europe, growing up to an elevation of 1,000 meters.<sup>3</sup> The essential oil is of low quality and very camphorous.<sup>3</sup>

**THE NAME:** *Lavandula* and lavender derive from the Latin *lavare* (“to wash”). The epithets have the following meanings: *angustifolia* (“narrow leaves”), *latifolia* (“broad leaves”), and *vera* (“true”). Two etymological origins have been identified for the epithet *stoechas*. First, *stoechas* was Dioscorides’ name for lavender that grew on islands off the coast of France, now called the Ile de Hyeres.<sup>7</sup> Secondly, the Greeks named those islands *Stoichades*, meaning “the rows,” due to the lavender rows seen by sailors when



they entered the island. The epithet *dentata* refers to the dentate leaves.

The following common names correspond with the Latin binomials: English lavender, true lavender, and lavender fine (*Lavandula angustifolia*, syn. *L. vera*, *L. officinale*); Portuguese lavender and spike lavender (*L. latifolia*); Lavandin (syn. *L. × intermedia* or *L. × hybrida*); stoechas lavender, Spanish lavender, French lavender, and stick-adove (*L. stoechas*); French lavender is also a common name for *L. dentata*.

**HISTORICAL USES:** Lavender has been used extensively throughout Europe and the Mediterranean. Romans and Libyans scented their bathwaters with lavender (likely *L. stoechas*).<sup>1</sup> On festive occasions, lavender flowers were strewn on the floors of Portuguese and Spanish churches and homes.<sup>1</sup> Lavender flowers were burned in bonfires on St. John’s Day for protection from evil spirits.<sup>1</sup> *Lavandula stoechas* was one of four ingredients in “four thieves’ vinegar” used in the Middle Ages as protection from the plague.<sup>1</sup> The rural French and Spanish applied an infused oil of lavender flowers to wounds.<sup>1</sup> Arabs administered lavender flowers as an antispasmodic and expectorant.<sup>1</sup> Lavender sachets were placed in dresser drawers and closets to scent linens, apparel, gloves, and feathers, and protect them from moth and insect damage.<sup>1</sup> Bees frequent lavender flowers providing a good source of nectar for honey.<sup>1</sup>

Eclectic physicians administered essential oil of *Lavandula angustifolia*, spirits of lavender, and compound spirit of lavender as a carminative and antispasmodic for the digestive tract.<sup>8,9</sup> Lavender was also used for pectoral conditions, nervous debility, hysteria, seizures, and fainting.<sup>9</sup>

The delicious “Compound Spirit of Lavender” consisted of lavender and rosemary essential oils, cloves, nutmeg, Saigon cinnamon, and red saunders in a base of alcohol and water. This compound was administered as a carminative and digestive tonic to treat nausea, flatulence, and stomach and intestinal pain.<sup>8,9</sup> It was also added as a coloring and flavoring agent for unpleasant tasting medicines.<sup>9</sup> Creams and ointments containing lavender spirits or volatile oil were applied topically for headaches caused by fevers and debility.<sup>8,9</sup>



All types of lavender essential oils continue to be included as fragrances and antiseptics in perfumes, creams, lotions, ointments, oils, salves, soaps, detergents, and insect repellants.<sup>10</sup> Lavender oil and herb are also incorporated into food products, such as beverages, desserts, candies, baked goods, gelatins, syrups, honeys, and aromatic vinegars.<sup>10</sup>

## CONSTITUENTS

**ENGLISH LAVENDER:** English lavender contains up to 1.5% volatile oil (linalool, linalyl acetate, lavandulyl acetate, 1,8-cineole, terpinenol-4-ol, camphor, borneol, pinene, cymene, and limonene), tannins (rosmarinic acid and other caffeic acid derivatives), coumarins (coumarin, umbelliferone, and herniarin), flavonoids (luteolin), and triterpenoids (ursolic acid).<sup>10</sup>

**ENGLISH LAVENDER ESSENTIAL OIL:** English lavender essential oil contains linalool, linalyl acetate, lavandulyl acetate, terpinen-1-ol-4, 1,8-cineole, camphor,  $\beta$ -phellandrene, terpinolene,  $\alpha$ -thujene, *n*-hexanol, *n*-heptanal, methyl amyl ketone, ethyl amyl ketone, perillaldehyde, perillyl alcohol, *D*-borneol,  $\alpha$ -terpineol,  $\alpha$ -pinene, limonene, lactones (4-butanolide, dihydrocoumarin, 4-methyl-4-vinyl-4-butanolide, 5-pentyl-5-pentanolide, and 4,4-dimethyl-2-buten-4-olide), sesquiterpenes (caryophyllene and cadinene), fatty acids (propionic acid, isobutyric acid, caproic acid, and *p*-coumaric acid), and others.<sup>10</sup>

**SPIKE LAVENDER ESSENTIAL OIL:** Spike lavender and lavandin essential oil contain many constituents similar to English lavender; their difference is based on their relative content of linalool, 1,8-cineole, terpene ketone (camphor), and linalyl acetate. For more information, review the descriptions of essential oils in the *Medicinal Uses* section.

**NUTRITIONAL PROPERTIES:** English lavender flowers contain vitamin A, calcium, and iron.

**MEDICINAL PROPERTIES:** Lavender is an anti-inflammatory, antimicrobial, anxiolytic, aromatic, astringent, bitter tonic, carminative, cholagogue, choleric, nervine, mild sedative, stomachic, smooth muscle antispasmodic, and mild counterirritant.

**TEMPERATURE AND FLAVOR:** Cool, bitter, pungent, and astringent. Some sources classify lavender as warm.

## MEDICINAL USES

English lavender has nervine, anxiolytic, and mild sedative actions that calm the central nervous system. It aids in treating nervous tension, anxiety, stress, insomnia, and irritability. Lavender also has mood elevating properties, and is beneficial for treating depression, melancholy, and mood swings. In some cases, lavender aids in relieving headaches, migraines, and neuralgia. Lavender can be

uplifting and refreshing, with a stimulating, restorative, and regenerative effect on the nervous system. It aids in treating hormone-related nervous system imbalances, and reduces irritability associated with premenstrual syndrome and perimenopause. Extracts of chamomile (*Matricaria*), lemon balm (*Melissa*), wild oats (*Avena*), and/or St. John's wort (*Hypericum*) can be combined with small quantities of lavender for their calming and antidepressant effects.

Lavender has smooth muscle antispasmodic and carminative properties that relieve flatulence, upper and lower gastrointestinal spasms, and menstrual cramping. It also aids in treating nerve-related digestive conditions, including Crohn's disease, colitis, and irritable bowel syndrome. It is mildly astringent and drying to the mucous membranes. Aromatic herbs such as orange peel (*Citrus sinensis*), lemon grass (*Cymbopogon*), lemon balm (*Melissa*), chamomile (*Matricaria*), and spearmint (*Mentha spicata*) can be combined with small amounts of lavender to ease digestive cramping.



Lavender stimulates digestive secretions, increasing the efficiency of digestion. It has choleric and cholagogue effects primarily attributed to the caffeic acid derivatives.<sup>11</sup>

Apply lavender poultices, fomentations, essential oils, or salves topically to treat sore muscles, neuralgia, rheumatic joints, sprains, strains, and bruises. Lavender reduces irritation and itching associated with poison oak, eczema, dermatitis, and psoriasis. For more information about topical uses, review the information on essential oils below.

#### LAVENDER ESSENTIAL OIL:

While there are many similarities in essential oils of various lavender

species, there also are important differences.

#### ENGLISH LAVENDER (*LAVANDULA ANGUSTIFOLIA*)

Essential oil of English lavender is superior to essential oils of other lavender species for medicines and perfumes. Lavender acts as a harmonizer in essential oil blends. It contains a higher linalool and linalyl acetate content than other *Lavandula* species.<sup>10</sup> Linalool, and to a lesser extent, linalyl acetate are the components with sedative actions.<sup>12</sup> Lavender has calming, spasmolytic, and restorative properties. In rodent studies, lavender oil had CNS-depressant effects.<sup>10</sup>

Consuming one to two drops of lavender spirits (lavender essential oil diluted in alcohol) 15–30 minutes prior to a meal reduces appetite and decreases colic, gas, and bloating.<sup>12</sup> It also helps to normalize hepatic blood sugar output.<sup>12</sup>

Lavender oil is a vulnerary agent that promotes cell regeneration.<sup>13</sup> Apply lavender essential oil neat (directly) or diluted as a first-aid remedy for bee stings, wasp stings, spider bites, mosquito bites, poison oak, poison ivy, cuts, and abrasions. Topical applications are excellent for reducing pain and inflammation from thermal burns and sunburns.<sup>12</sup> Combine lavender with peppermint essential oil to increase the anti-inflammatory and cooling effect that relieves burns. Apply lavender cream, diluted essential oil, or hydrosol to treat sun-damaged skin or to delay wrinkle formation.<sup>13</sup> Lavender oil also prevents scarring and stretch marks.<sup>13</sup>



Lavender essential oil has antimicrobial properties that can benefit the healing of wounds, acne, boils, and infected hair follicles.<sup>10</sup> Inhaling essential oil aids in treating sinus and lung congestion.<sup>13</sup> Topical applications have counterirritant effects that help to reduce muscle pain. Suppositories containing lavender aid in treating vaginal infections including candida and bacterial vaginosis.<sup>13</sup>

### **SPIKE LAVENDER (LAVANDULA LATIFOLIA)**

Spike lavender or aspic oil contains higher amounts of 1,8-cineole, terpene ketone (camphor), and terpene alcohols, with smaller amounts of linalyl acetate than English lavender.<sup>10,12</sup> However, the quantity of linalool is higher in spike lavender than in true lavender.<sup>10</sup> Spike lavender has antiviral and expectorant actions for colds and respiratory infections.<sup>12</sup> The pungent camphorous compounds act as a mucolytic, alleviating congestion. In laboratory animals, spike lavender has spasmolytic effects on smooth muscles.<sup>10,12</sup> Apply spike lavender essential oil as a mild antiseptic for acne, pimples, blackheads, boils, infected hair follicles, and wounds. The camphor also aids in repelling insects and moths. Most spike lavender essential oil is produced in Spain.<sup>13</sup> *Note:* Due to the potential neurotoxic effects of the terpene ketone (camphor), epileptics, small children, and pregnant or nursing women should completely avoid internal use, and consult an aromatherapist before applying externally.<sup>12,14</sup>

### **LAVANDIN (LAVANDULA × INTERMEDIA)**

Lavandin essential oil is obtained from *Lavandula × intermedia* (syn. *L. × hybrida*), a naturally occurring hybrid of *L. angustifolia* and *L. latifolia*. The chemotype of lavandin grown in Croatia has similar disinfectant properties; however, it is higher in borneol and terpenes.<sup>12</sup>

There are numerous strains of lavandin, including Abrial, Super, Grosso, Standard, and Maime Epis Tête.<sup>13</sup> Lavandin yields much higher volatile oil content than lavender and spike lavender; therefore, it is less expensive than English lavender, although it is considered a lower quality. It is also used to dilute English lavender and spike lavender essential oils.<sup>10</sup>

Lavandin contains linalool (20 – 60%), linalyl acetate (15 – 50%), 1,8-cineole (5 – 25%), and terpene ketone (camphor)(5 – 15%) ranging between those of English lavender and spike lavender.<sup>10,14</sup> Because the content of cineole and camphor is higher than lavender, lavandin is a more potent counterirritant, disinfectant, and deodorant. *Note:* Due to the potential neurotoxic effects of the terpene

ketone (camphor), epileptics, small children, and pregnant or nursing women should completely avoid internal use, and consult an aromatherapist before applying externally.<sup>12,14</sup>

### **STOECHAS LAVENDER (LAVANDULA STOECHAS)**

Stoechas lavender contains high amounts of the terpene ketone, camphor (15 – 30%) and fenchone (45 – 50%). The camphor content of stoechas lavender is higher than English lavender; therefore, the essential oil should only be applied topically. It has counterirritant, vulnerary, and anti-inflammatory properties.<sup>13,14</sup> *Note:* Due to the potential neurotoxic effects of the terpene ketone (camphor), epileptics, small children, and pregnant or nursing women should completely avoid internal use of stoechas lavender essential oil, and consult an aromatherapist before applying externally.<sup>12,14</sup>

## **CONTRAINDICATIONS**

Internal and topical uses of *Lavandula angustifolia* are considered safe during pregnancy and lactation, and in small children. However, due to the potential neurotoxic effects of the terpene ketone (camphor), avoid internal consumption of spike lavender, stoechas lavender, and lavandin in epileptics, small children, and pregnant or nursing women.<sup>12,14</sup> Consult an aromatherapist before applying those oils externally. Spike lavender, lavandin oil, and lavender absolute are generally non-irritating and non-sensitizing to human skin; however, one source reported lavender absolute to be skin sensitizing.<sup>10</sup> In rare cases, lavender essential oil can cause contact dermatitis.<sup>10</sup>





## PREPARATION AND DOSAGE

**TINCTURE:** Fresh flowers [1:2–1:3+, 60–95% alcohol]; dry flowers [1:5–1:6+, 50–60% alcohol]; 10–60 drops, up to three times daily.

**GLYCERITE:** Fresh flowers [1:2–1:3+, 50% glycerin and 50% alcohol]; dry flowers [1:5–1:6+, 40% glycerin, 30% water, and 30% alcohol]; consume 5–30 drops, up to three times daily.

**ACETUM EXTRACT:** Infuse fresh or dry lavender into vinegar; use sparingly in culinary preparations and for digestive properties.

**CAPSULES:** Consume 1–3 drops of *L. angustifolia* essential oil in a capsule with a binder such as marshmallow or kudzu, up to three times daily.

**TEA:** Prepare a hot or cold infusion; consume 6–12 ounces, up to four times daily.

**HONEY AND SYRUP:** Infuse fresh or dry lavender flowers in honey, then strain and consume one teaspoon in hot water or tea. Stir 1–2 drops of *L. angustifolia*

essential oil into 1 teaspoon to 1 tablespoon of honey, and add to hot water or tea. Apply the essential oil neat or lavender honey topically for burns.

**TOPICAL USE:** Apply the poultice or fomentation topically. Apply the hydrosol or essential oil neat, or add to creams, salves, massage oils, baths, soaps, perfumes, and aftershaves. Add essential oil to a spritzer or diffuser, or in hot water when inhaling steam.

**CULINARY USE:** Layer lavender flowers in coarse salt and drizzle with olive oil; use a pinch in culinary preparations. Lavender flowers can be incorporated into a variety of recipes, including scones, biscuits, cookies, and other confections. Infuse lavender flowers in oil or butter, and use sparingly in cooking.

**ESSENTIAL OIL:** Place 1–3 drops of essential oil on a sugar cube, then dissolve in hot water and consume. Consume 1–3 drops of *L. angustifolia* essential oil in a capsule with a binder such as marshmallow or kudzu, up to three times daily. To prepare lavender spirits, combine one part *L. angustifolia* essential oil with ten parts alcohol [1:10]; consume 1–3 drops.