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Lavenders for California Gardens

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Lavender is a delightful and useful garden plant. It can be used as a drought-tolerant low hedge, a specimen plant, a cut flower, and an herb that provides a fragrant addition to many herbal projects. As garden ornamentals, lavenders have attractive gray-green foliage and eye-catching, long lasting blooms.

The name “lavender” comes from the Latin *lavare*, meaning “to bathe.” Hence it has a strong association with cleansing, with pleasures of the bath, and burning of incense to clean the air in places such as hospitals and public buildings.

In terms of its herbal uses, the flower consists of 0.5 to 2 percent by weight volatile oil that contains constituents such as linalyl acetate, linalol, geraniol, cineole, limonene, and sesquiterpens. Medicinally, these chemicals act to aid digestion, increase superficial blood circulation, and have been used as antispasmodics and antidepressants. Lavender is also used, especially combined with other herbs, as a natural sleep aid. It has a cool, relaxing scent and may be restorative when one is mentally or physically exhausted.

In culinary use, flowers from the English lavenders can be used in herbal teas, cookies, lavender ice cream, as a flavorful addition to wine, and even as a spice rub for beef and lamb. Lavender’s best uses, however, are in cosmetics and fragrances. It is this use that has provided the foundation of a very successful industry. Lavender is used in aromatherapy, as a relaxant, and as an antiseptic. Its oils are prized for soap fragrances, aromatic baths, potpourri and sachets, facial oil, massage oil, floral water, compresses, perfume, facial steam, and inhalation.

TAXONOMY

Lavender is in the mint family (Labiatae). Its genus (*Lavandula*) is divided into three sections: Spica, Stoechas, and Pterostoechas. Most of the lavender species with commercial significance belong to the Spica and Lavandin groups. They include the English lavenders (known synonymously as *L. angustifolia*, *L. latifolia*, *L. officinalis*, and *L. spica*) and interspecific hybrids of *L. angustifolia* and *L. latifolia*, which are called the Lavandins. Lavandins generally bloom later than English lavenders and are widely cultivated for both commercial oil and for garden plantings. Some of the cultivars of Lavandins used for oil production include Grosso, Standard, Super, and Abrialii. Other Lavandins used in the garden include Grappenhall, Goodwin Creek Gray, Provence, and Silver Grey. The Lavandin hybrids are seed-sterile and must be vegetatively propagated.

The numerous cultivars of English lavenders include dwarf forms (Compacta and Compacta Nana), pink-flowered (Jean Davis or Lodden Pink), blue-flowered (Graves, Grey Lady and Irene Doyle), and the large purple-flowered selections (Twickel Purple, Hidcote, Munstead, and Vera). Lavender Lady is excellent for garden use. It is unique because it can be grown fairly quickly from seed and will bloom in the first year.

Lavender cultivars grown for cut flower production should be selected for traits such as flower color, length of stem, and fragrance. The hybrid Lavandins produce

good-quality long-stemmed flowers, but they tend to turn grayish in color upon drying. English lavenders (*L. angustifolia*) yield shorter-stemmed flowers but retain an excellent blue color when dried. Specifically, Hidcote and Royal Velvet hybrids hold their color well when dried. Temperatures during the drying period have a significant effect on the final flower color, since higher ambient temperatures can cause a bleaching effect.

Garden varieties and less-hardy Mediterranean species abound. Most are not used for oil production but are lovely in the garden. They include species such as French lavender (*L. dentata*). *Lavandula dentata candicans* has larger leaves than traditional French lavender, with a grayish-white down on the leaves. Spanish lavender (*L. stoechas*), Spanish white lavender (*L. stoechas* 'Alba'), pinnata lavender (*L. pinnata*), yellow lavender (*L. viridis*), wooly lavender (*L. lanata boiss*), and sweet lavender (*L. heterophylla*) are also familiar garden varieties.

The nomenclature of lavenders is confusing. In the nursery trade, invalid names from the past are sometimes still used. For example, English lavender (now known as *L. angustifolia*) was previously referred to in the literature as *L. officinalis*, *L. vera*, and *L. spica*; *L. latifolia* is also known as *L. spica*. The correct names now in use describe the leaf shape. In Latin, *angustifolia* means "narrow-leafed," while *latifolia* means "broadleafed." When you see "*L. × intermedia*," it means the plant is a hybrid between *L. angustifolia* and *L. latifolia* and has intermediate leaf characteristics, hence its botanical name *intermedia*.

New varieties for all uses are frequently introduced. The varieties specifically listed in this publication should be considered suggestions only and not endorsements of specific varieties.

Most of the lavender grown worldwide is used for the production of essential oils. The hybrids or cultivars of lavender predominate because they produce great quantities of high-quality oil. However, selected forms of *L. angustifolia* are also grown for essential oil and provide a very high-quality oil used for perfumes. About 1,000 tons (907 T) of oil is produced annually worldwide—mostly in Europe, particularly eastern Europe, and Australia. Additionally, English lavender and its cultivars are grown for the production of dried flowers in bunches or loose for potpourri, scented sachets, and craft products.

Although the garden species contain essential oils, they are not used for production because they have very strong-smelling oils that do not meet the quality requirements for commercial use. They can, however, be used for drying, potpourri, or craft purposes.

GROWING

Lavenders that are of commercial importance are native to the Mediterranean areas of Europe, which experience warm, dry summers and cool, rainy winters. They are adapted to very well-drained soils and require a soil pH of 6.5 to 7.5 to grow well. They will not tolerate wet, poorly drained soils. In soils that have slower drainage, consider planting on mounds to drain excess water away from the root crown.

Irrigation, however, is needed in dry areas while the plants are being established. Proper irrigation while the flower heads are developing is also very important, since water stress during this time may decrease the number of flowers and oil yield. Drip irrigation systems are recommended, since overhead watering tends to break the plants apart and promotes disease.

Lavenders grow best in full sun in well-drained gravelly soils with low fertility. Excessive nitrogen encourages soft, succulent growth that is low in oils. Plants tend to break apart in the center under high fertility, although fertilizers may need to be

applied early in the development period. If necessary, incorporate a balanced fertilizer such as 10-10-10 at a rate of $\frac{1}{2}$ to 1 pound per 100 square feet (244 to 488 g per 10 sq m) prior to planting. If plants seem slow to develop, side-dress with 10-10-10 once during the early growing season to encourage growth. Avoid fertilizing during flower development.

Prune lavenders as you harvest the flower stalks. In a garden situation, even if you are not planning to harvest the crop, the best time to prune is just after the plants have completed their flowering cycle.

PEST CONTROL

The most frequent problems associated with lavenders are related to root and crown rots, usually the result of too much water or poor drainage in heavy soils. Excessive irrigation during the summer months, overhead watering, and too much moisture near the main stem can also lead to root, stem, and crown rot. When using drip irrigation, place the emitters several inches away from the stem. Practice crop rotation and avoid replanting lavender in areas where it was previously grown.

Lavenders are not often bothered by insect pests, although they may occasionally attract spittlebugs (*Philaenus spumarius*). These insects are not usually a problem unless the plants are being grown for cut flowers and the spittle is in the flower heads.

PROPAGATION

Lavenders can be propagated from seed, by cuttings, or by division from a mother plant. Except for a few selected varieties, growing from seed can be a slow process. Seed should be started indoors using bottom heat. Optimal temperatures for germination range from 75° to 80°F (23.9° to 26.7°C). Seed is available for named cultivars, including Hidcote, Munstead, Lavender Lady, and Mr. Thompson's Blend. Lavender Lady is an All American Selection and a very fine garden variety.



Figure 1. When making softwood lavender cuttings, bend down a stem and remove it from the main branch. Trim the cutting, leaving the "heel" attached.

Make softwood cuttings in the early spring or semihardwood cuttings in late summer to autumn before the first frost, using the past season's growth with the "heel" attached (fig. 1). Dip the heel end in a rooting hormone (for example, Rootone or Hormex), and place the cuttings in a soilless medium such as coarse sand, perlite, or vermiculite. Root under mist or high humidity. The cuttings should develop roots in 4 to 6 weeks. Some cultivars root more successfully than others.

As soon as the cuttings have rooted and hardened off, plant them directly into the garden. Space about 3 feet (1 m) apart in the row and 4 to 5 feet (1.2 to 1.5 m) between rows. The rows should be spaced far enough apart to facilitate irrigation and weed control and minimize diseases that result from insufficient aeration. In the home garden, spacing depends on the size of the plants and how they are being used. Plants should be productive for 6 to 8 years, though some can continue to produce for up to 20 years.

The seeded varieties of lavenders are somewhat short-lived and are often grown as annuals. Most of them will usually produce well only the first year.

HARVESTING AND PROCESSING

Harvesting is usually done by hand for flower production; for oil, mechanical harvesting is appropriate. For dried use, the flowers should have only a few of the florets open. The stem should be cut back to just below the first set of leaves. For essential oil, delay cutting the spikes until $\frac{1}{3}$ to $\frac{1}{2}$ of the florets are open.

Essential oil of lavender is obtained by steam distillation of the fresh or wilted flower heads. However, some growers distill the oil using the dried flower buds. English lavender may yield only $\frac{1}{4}$ teaspoon of oil per pound (1.25 ml/kg) of fresh flower heads, since the oil content is just 0.1 to 0.5 percent, while Lavandin cultivars yield significantly more oil. Oil yield is quite variable, depending upon the cultivar, production, and distillation methods. Essential oil is difficult to process at home, since large quantities of flowers and special equipment are required. Small-scale steam distillation units are available for sale, as are larger commercial models from sources such as Floragenics Distillation Systems, Pescadero, California.

Dried flowers are sold either by stems or by the separated flower heads. The flowers should be dried rapidly and under low-light conditions to reduce flower discoloration. Hang the bunches upside down to maintain straight stems in areas with good air circulation. Bunches take approximately 1 to 2 weeks to dry. The yield for cut flowers from mature plantings is also variable, but conservatively, 4 bunches of 50 stems each per plant can be expected.

To determine crop maturity, visually assess the degree of maturity on at least 50 individual flower heads using the following scale developed by the Redbank Research Station in New Zealand. Rate each flower stalk from the list below, based on maturity. An average score of 2 for the 50 flower heads is the optimal time to cut the crop for dried flower production. Essential oil crops should be harvested when the average score is between 5 and 6.

- Flower heads with no open flowers
- First one or two florets open
- Several florets open but none withered
- Several florets open, a few beginning to wither
- Approximately one-third of the florets open, one-third withered, and one-third remaining as buds
- Very few buds left, few open florets, most florets withered
- No buds left, few open florets, most florets withered
- All florets withered
- Capsules starting to open and shed seed

FOR MORE INFORMATION

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