



# Lavender

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## Introduction

Lavender (*Lavandula*) is among the best-known of aromatics. Lavender has been used since ancient times for aromatic and medicinal purposes, and it maintains popularity because of lavender ingredients in essential oils, perfumes and other personal care products. There are more than 20 commercially important lavender cultivars, with climate and plant culture requirements varying among some of the major lavender types. Large-scale lavender production in Kentucky is limited by climatic requirements (low humidity and low winter temperatures), poorly drained soils and the scale requirements for essential oils processing. Lavender could be suited as a specialty/niche crop for some Kentucky farms, especially those with ongoing agritourism enterprises.

## Marketing

Marketing constraints and the scale requirements for essential oils processing make lavender more likely suited as a crop for ornamental or on-farm agritourism potential (lavender festivals) in Kentucky. Kentucky-grown lavender also has potential as an ingredient for small-scale producers of value-added products, such as soaps and floral arrangements. Other marketing possibilities for lavender include fresh and dried cuttings for floral arrangements; flowers for cooking or food garnishes; and as an ingredient in a wide range of other value-added products, from potpourri to candles.

Lavender and lavender products could be sold across the range of farm direct marketing channels, including on-farm stands, agritourism, community supported agriculture and farmers markets. Wholesale marketing to retailers, florists and restaurants is also possible. Because



of the wide availability of lavender products, especially personal care products, local lavender producers must be able to differentiate their product greatly to obtain profitable prices.

## Market Outlook

The three major potential markets for lavender in Kentucky are 1) for agritourism, as a crop that can anchor seasonal attractions at a farm or other location; 2) as an ingredient in value-added products; and 3) as culinary lavender to local chefs and restaurants. Markets may also be available for fresh or dried lavender for floral and decorative uses.

Events focused on lavender, such as festivals and field days, have contributed to growth in the agritourism industry, rated among the fastest-growing tourism industry segments. Lavender-focused events can be a way for farms and farm wineries to add another customer visit to their season. Adding lavender beds can provide a “cut-your-own” sales opportunity, potentially increasing



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average purchases at existing farm markets.

Globally, lavender is an important part of the essential oils industry. This industry is dominated by large-scale processors with industrial-scale equipment, though small-scale production of lavender for the oil market is possible. Commercial lavender oil is readily available to purchase as an ingredient for personal care items such as soaps, which are often viewed as an affordable luxury.

## **Production considerations**

### *Lavender Types*

Different lavender cultivars are more suitable for fragrance, flowers or oil production. The most fragrant lavenders are English lavenders (*L. angustifolia*) and French lavenders (*L. dentata*). Other types include spike lavender (*L. latifolia*) and *L. stoechas*, commonly called Spanish or French lavender.

Lavandins, hybrids of English and spike lavenders, are the most common types produced in the U.S. for floral usage. Lavandins include the popular cultivars ‘Provence’ and ‘Grosso.’ According to the National Center for Appropriate Technology (NCAT), oils extracted from lavandins may be blended with distillates from ‘Grosso’ to make “products of acceptable quality.”

### *Production Methods*

Lavender is best established on sandy loam soils with a pH from 6 to 8. Kentucky plantings will be most successful when established in well-drained soil, usually on raised beds. Amending soil to improve drainage will be necessary for long-term lavender production from most soil types in Kentucky because lavender is prone to root rotting diseases.

Lavender can be successfully propagated through softwood cuttings. Propagation of lavandins from seed is not usually recommended in order to produce plants true to type. Removing flowers during the first growth years can help establish healthy plants.

Supplemental water and fertilizer are necessary during establishment years. Spring irrigation is necessary for young plants. Drip irrigation helps reduce foliage moisture. Dry foliage and good air circulation around lavender plants helps reduce disease, which can reduce yields and foliage quality. Lavender has few insect

pests, and lavender plants may help attract beneficial insects to other nearby crops.

Fertilizer requirements are less for lavender types grown for oil. Spring nitrogen applications applied through fertigation can improve lavender spike growth and flowering.

Lavender is susceptible to freezing injury. On-farm research has shown that the use of windbreaks, hoop houses or other protective structures can reduce winter injury and increase plant survival.

### *Harvest, Post-Harvest Processing and Labor*

The majority of lavender is hand-harvested, and timely harvests are necessary to maintain product quality. Harvest times vary for lavender intended for essential oils and flowers. Harvest of lavender types for essential oils occurs when flowers are less open than harvest for fresh and dried flowers. Lavender flowers may be dried on the stem and either sold as flower bundles or as dried buds.

Essential oils require distillation of lavender buds after harvest. This requires flower bud removal from stems, followed by distillation of the buds. Lavender buds are usually distilled by steam. Essential oils may also be extracted from buds by the use of organic solvents or carbon dioxide.

## **Economic considerations**

Lavender profitability will depend on yields and marketing. Most Kentucky locations will only be suited for small-scale production, whether for flowers or oil. Adding value to the lavender harvest through agritourism or using lavender in value-added products is necessary to generate positive returns to labor and management from lavender.

According to information from the Washington State University small farms program, gross returns (income before expenses) from essential oils at wholesale prices can range from \$300 to \$2,000 per acre. Such returns are highly unlikely to produce positive economic profits when accounting for the cost of plant establishment and the value of the operator’s labor. While gross returns from lavender produced for dried flower production can be greater, producers may incur higher harvest labor and marketing costs.

Lavender plantings in Kentucky are likely to be much smaller than an acre. Establishment costs are estimated at \$800 to \$1,500 for a 100-foot row with 45 lavender plants for dried flower bundle production. The main costs are plant costs, weed control (mulch and hoeing) and the irrigation system. Costs at the higher end of this range will occur when more extensive soil preparation, soil amendments and irrigation installation are required.

Annual production costs for a 100-foot lavender bed after establishment range from \$600 to \$1,000, with major costs for harvest labor and weed control. Some lavender can be harvested in the first years after establishment. Projected annual returns from a 100-foot row, based on a wholesale price of \$5 per bundle, indicate a positive cash flow in the second year of production. Repayment of establishment costs will occur between years 3 and 5, depending on total costs and lavender price.

A 100-foot bed producing approximately 270 bundles sold at \$5 per bundle will result in \$1,000 to \$1,500 in gross sales. Returns to land and management will range from \$400 to \$900. These numbers assume that some facility to dry lavender flower bundles already exists on the farm; establishment of a structure solely dedicated to drying lavender will require higher prices and greater annual returns to justify that initial investment.

In short, lavender has economic profit potential in Kentucky and surrounding regions if there is a sound marketing plan and if the fixed costs of drying lavender (processing/drying, essential oil distillation and land

costs) can be distributed over other farm enterprises. Higher hourly labor costs will also impact profitability, due to the amount of labor needed for weed control, harvest and bundling.

### Selected Resources

- Lavender Production, Products, Markets and Entertainment Farms (ATTRA, 2006)  
<https://attra.ncat.org/attra-pub/summaries/summary.php?pub=41>
- Increasing lavender production and oil producers through the use of hoop housing and soil amendments (Ohio SARE Project Report, 2011)  
[http://mysare.sare.org/sare\\_project/FNC10-819/](http://mysare.sare.org/sare_project/FNC10-819/)
- Lavender: History, Taxonomy and Production (NC State University, 2007)  
[https://www.ces.ncsu.edu/fletcher/programs/herbs/crops/culinary/lavender\\_mccoy.html](https://www.ces.ncsu.edu/fletcher/programs/herbs/crops/culinary/lavender_mccoy.html)
- Lavender Production (Republic of South Africa Agriculture, Forestry and Fisheries Department, 2009) contains useful international essential oils production data and perspectives  
<http://www.nda.agric.za/docs/Brochures/EssOilsLavender.pdf>
- Projected Startup Costs – Lavender Production (Colorado State University, 2014)  
<http://www.foodfarmforum.org/wp-content/uploads/2014/01/Lavender-production-budget-Swift.pdf>

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