University of Kentucky
College of Agriculture, Food and Environment
*Cooperative Extension Service*

**Center for Crop Diversification Crop Profile**
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# Culinary Herb Production in Tennessee

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## Introduction

Culinary herbs – fresh or dried plant parts used to flavor food – show potential as profitable farm and food business enterprises in Tennessee. Consumers continue to show interest in purchasing locally grown herbs and vegetables as well as eating a more diverse diet, including fresh herbs. Culinary herb production appeals to many different sizes and scales of producers because of a wide range of marketing possibilities, from selling fresh and dried herbs to adding farm-grown herb ingredients to value-added products.

This fact sheet outlines common considerations for producing culinary herbs on Tennessee farms and market gardens. Culinary herbs successfully grown for local marketing in Tennessee include anise, basil, borage, caraway, chives, cilantro, coriander, dill, fennel, garlic, lemon balm, lemongrass, lovage, mints, parsley, rosemary, sage, sweet marjoram, summer savory, tarragon and thyme. Other herbs commonly established as perennial crops, such as lavender, also have potential in Tennessee. Indeed, the number of culinary herbs with possibilities for Tennessee production reflects the diversity of potential market channels and products into which the herbs might be used.

Rosemary

## Market Description

Culinary herbs can be sold in multiple forms and in multiple markets, and the diversity of markets helps sustain consumer and production potential. Broadly speaking, consumers continue to broaden their food interests and tastes, and culinary herbs help deliver flavors many consumers desire and discover. Certain culinary herbs also feature prominently in ethnic cuisines, and some producers may focus on herbs meeting ethnic demand.

Culinary herbs are sold in multiple forms. Fresh herb foliage is used in cooking, as are dried foliage, herb seeds and other parts of the herb plant. Some culinary herb plants are used fresh or dried for ornamental purposes. Culinary herbs may also be sold as live plants for gardeners to use in the home landscape. Herbs may also be processed to derive essential oils used in some value-added products.

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## Common Marketing Channels

Before producing a crop, a producer should always define the specific market into which he or she will sell the harvest. Because of the number of possible market channels – as well as the fact that the same herb could be sold into multiple market channels – defining more than one potential market may help increase the possibility of success for a culinary herb enterprise.

Community farmers markets, on-farm and roadside stands and community supported agriculture (CSA) programs are common direct marketing channels for fresh herbs. Fresh herbs can also be produced for wholesale to foodservice (restaurants and institutions) and food retailers. Demand for fresh herbs in these wholesale channels may vary considerably; chefs at standalone restaurants may grow their own herbs in a kitchen garden and only demand certain higher-use crops. Large food retailers, on the other hand, may require a continuous supply of packaged fresh herbs at very competitive wholesale pricing points.

Culinary herbs used either for ornamental purposes or in value-added products may be marketed through similar direct marketing channels as herbs for food. There are additional marketing channels that may be possible for herbs intended for non-food use. Direct sales through ecommerce, sales as a vendor at events such as craft fairs and festivals, and wholesaling ornamental herbs to floral arrangers are examples of marketing channels used for ornamental herbs and inedible products.

Many resources about designing a marketing plan for new products are available from the Center for Profitable Agriculture and UT Extension, including PB1796, Choosing Direct Marketing Channels for Agricultural Products (https://utextension.tennessee.edu/publications/Documents/PB1796.pdf).

## Production Systems

There are three production systems most commonly used for culinary herb production in Tennessee: field-grown, protected cultivation and container-grown.

Field-grown culinary herbs can be grown on bare ground and in raised beds, including raised beds with plastic mulch and drip irrigation. Sunny sites with well-drained soils high in organic matter are recommended. Planting is by direct seeding or transplanting,

Greenhouse production of basil

depending on the herb grown.

Protected cultivation, such as high tunnels and greenhouses, can be used in both small-scale and large-scale culinary herb production. Small farms may add specific herbs to a high tunnel based on customer demand, crop rotations or some combination of factors. Some larger-volume herbs supplied to food retailers may be field-grown, such as cilantro and parsley. However, many culinary herbs now offered at mid-sized and large retailers are greenhouse-grown to provide a year-round supply. Protected systems also offer some production advantages, such as potential benefits for preventing soil borne diseases and a physical barrier to discourage other pests and diseases.

Container-grown culinary herbs are usually produced in a greenhouse but may also be grown outdoors. Container-grown herbs are frequently sold at farmers markets and garden centers and have also become common offerings in the produce and floral sections of retail stores. Container-grown herbs are marketed to consumers desiring to raise their own culinary herbs in the home landscape, vegetable garden or as indoor container plants.

### *Planting and Transplanting*

Production system and herb species will influence whether culinary herbs are planted by direct seeding or transplanting. In all production systems, both direct seeded and transplanted herbs will benefit from good soil health. Planting culture, such as seeding depth, may differ between culinary herb crops. Some herb seeds may require shallow seeding (for example, thyme) or even exposure to sunlight (for example,

lemon balm, rosemary and sweet marjoram) for germination.

Crop rotations can also influence herb plantings, as some herbs may be in the same plant families as vegetables planted in the previous season(s). Using integrated pest management (IPM) and other preventative strategies will help growers identify ideal cultural techniques for culinary herb plantings.

*Pest Management*

Like other specialty crops, culinary herb production in Tennessee can be challenged by insects, diseases, weeds and other pests, such as birds and wildlife. An IPM program will be the main strategy for preventative pest management. State and regional IPM resources may be accessed at the Southern Integrated Pest Management Center website, https://southernipm.org/.

Herbs can be grown in both conventional and organic production systems. A lack of pest protection products labeled for field and greenhouse herb production can be a challenge for controlling pests in conventional systems. For organic production, avoid fields with a history of weed pressure. Herbs are often used as a pest control method in and of themselves, as the volatiles they produce can confuse insects and protect other plants from insect feeding. Companion planting or intercropping are great methods to utilize herbs in your IPM plan for your farm.

Providing adequate moisture and soil fertility, through fertilizers and soil amendments, will contribute to plant health and reduce plant stress, which also helps reduce disease and insect pressure.

Thyme

Chives

*Harvest and Postharvest Handling*

The culinary herbs best suited for production in Tennessee are all hand-harvested, although there are some medium-sized herb growers in the Southeast who have invested in small mechanical harvesters. Ideal harvest methods and postharvest handling practices may vary according to herb species and the herb's end use. Fresh cut herbs are cut and may be cleaned and packaged before being transported to market. Container-grown herbs are usually transported to market in trays containing multiple containers.

Producers washing and packaging culinary herbs for sale to consumers should understand all applicable food safety regulations. However, washing herbs is not recommended, as introducing free moisture will encourage decay and reduce the shelf-life of the product. Instead, growers should include a 'Wash before eating' statement on the package. More information on food safety for fresh produce in Tennessee may be found at: http://utvegetable.com/food-safety/.

Fresh herbs are delicate and perishable. They should be handled gently to avoid bruising. They should be cooled after harvest, but recommended temperatures for transport and storage vary among species. Basil, for example, should not be stored below 50 degrees F. Many herbs can be stored at 32 degrees F to optimize quality.

*Labor*

Harvest, including packing, is the largest labor component for fresh cut culinary herbs. Production labor, including seeding and/or transplanting, is the largest labor component for container-grown herbs. Production labor needs include pre-plant soil preparation, weed and pest management, and crop maintenance

## Example Cost Worksheet: Culinary Herbs

| Variable Costs | Quantity | Unit | Price per Unit | Total |
|---|---|---|---|---|
| Soil Amendments (Lime, compost, etc.) | | | | |
| Fertilizer | | | | |
| Seeds or Plants | | | | |
| Mulch | | | | |
| Irrigation Supplies | | | | |
| Weed Control | | | | |
| Disease and Insect Control | | | | |
| Machinery/Equipment* | | | | |
| Labor (Planting through Harvest) | | | | |
| Fuel, Electricity, Water, etc. | | | | |
| Containers** and Labels | | | | |
| Marketing Costs | | | | |
| **Total Variable Costs** | | | | |
| | | | | |
| **Fixed Costs** | **Quantity** | **Unit** | **Price per Unit** | **Total** |
| Depreciation of Machinery, Equipment* | | | | |
| Depreciation of Cooling and Harvest Equipment*** | | | | |
| Depreciation of Irrigation System | | | | |
| Insurance | | | | |
| Land Rent or Taxes | | | | |
| **Total Fixed Costs** | | | | |
| | | | | |

*Hand tools for harvest may need to be purchased in the first year and, with care, will last over multiple seasons.
**Containers that hold plants for sale; these are not reused.
***Cooling equipment and harvest containers may need to be purchased at the outset.

and management, including scouting for disease and pest pressure.

### Economic Considerations

This section summarizes two concerns for producers considering a culinary herb enterprise: the herb enterprise budget and pricing.

A crop enterprise budget lists the economic costs and returns of producing a certain amount of a crop. The two types of costs on an enterprise budget are variable costs (costs which change based on the quantity produced on a certain space) and fixed costs (costs which do not change with the quantity produced).

The typical variable costs for culinary herbs are machinery and equipment costs during seedbed preparation and cultivation (fuel, oil, rental, etc.), purchase of seeds or plants, mulch and weed control, insect and disease management materials, marketing containers and harvest labor.

Typical fixed costs include site preparation investments, the purchase of irrigation equipment, equipment purchase costs, and investments into a high tunnel or greenhouse structure.

A budget worksheet can be used to estimate the expenses of culinary herb production. A sample cost worksheet is included at the top of this page.

Once the total production costs are estimated, producers may look at the probable yields and prices that may be obtained for culinary herbs in possible market channels. Estimating production costs is important when negotiating or setting prices; producers must be able to obtain prices higher than the costs of production.

*Pricing*

Setting prices may be challenging; some herbs may be new to consumers, and some fresh culinary herbs may not be widely available locally. Discussing prices with potential customers, before beginning production, is one of the best ways for specialty crop growers to project realistic prices per pound or other unit of crop production.

Current and past prices paid for bunches of herbs at Tennessee farmers markets can help prospective producers gather information about pricing. Tennessee farmers market price reports are available throughout the market season at https://www.uky.edu/ccd/price-reports/TNFM

Additional guidance for pricing and marketing culinary herbs can be found in these helpful publications:

- A General Guide to Pricing for Direct Farm Marketers and Value-Added Agricultural Entrepreneurs https://extension.tennessee.edu/publications/Documents/PB1803.pdf
- Choosing Direct Marketing Channels for Agricultural Products https://extension.tennessee.edu/publications/Documents/PB1796.pdf
- Evaluating the Potential of Success for Value-Added Products https://extension.tennessee.edu/publications/Documents/W040.pdf

## Additional Resources

- Culinary Herbs (University of Kentucky Center for Crop Diversification, 2019) https://www.uky.edu/ccd/production/crop-resources/herbs-medicinals/culinary-herbs
- Culinary Herbs (Agricultural Marketing Resource Center, 2018) https://www.agmrc.org/commodities-products/specialty-crops/herbs/culinary-herbs-profile
- Market-Based Enterprise Budgets Toolkit (Iowa State University, 2019) https://www.extension.iastate.edu/ffed/market-based-enterprise-budgets-toolkit/
- Southeastern U.S. Vegetable Crop Handbook (includes a section on herb production; handbook updated annually) https://content.ces.ncsu.edu/southeastern-us-vegetable-crop-handbook
- Herbs: Recommendations for Maintaining Postharvest Quality (University of California Postharvest Technology Center, 2001) http://postharvest.ucdavis.edu/Commodity_Resources/Fact_Sheets/Datastores/Vegetables_English/?uid=17&ds=799#

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*Photos courtesy of Pixabay.com*

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