

Culinary Herbs

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Introduction

Culinary herbs are fresh or dried plant parts used as a food flavoring. Culinary herbs are mostly prepared from leaves, but can also include flower, fruit and root parts. There are literally hundreds of plants that can be grown for this purpose. Some of the more popular commercially grown herbs include cilantro or coriander (*Coriandrum sativum*), chives (*Allium schoenoprasum*), dill (*Anethum graveolens*), French tarragon (*Artemisia dracunculoides*), horseradish (*Armoracia rusticana*), mint (*Mentha* spp.), oregano (*Origanum vulgare*), parsley (*Petroselinum crispum*), rosemary (*Rosmarinus officinalis*), sage (*Salvia officinalis*), sweet basil (*Ocimum basilicum*), and thyme (*Thymus vulgaris*).

Marketing

Culinary herbs may be sold fresh, dried, and as live plants. Potential fresh herb growers should talk to upscale restaurant chefs, caterers, or to produce brokers, especially those who sell to restaurants. Kentucky restaurants surveyed in 2006 indicated they were most interested in sourcing basil, chives, cilantro, parsley, and rosemary from local growers. Other herbs of specific interest to restaurants include horseradish, oregano, sage, tarragon, and thyme.

Chefs purchasing fresh herbs will prefer a guaranteed supply of quality herbs throughout the year. In addition, fresh cut herbs may be sold to gift shops and natural



CILANTRO

food stores. Herbs are also excellent for early and late-season sales at farmers markets; however, these sales volumes may be highly variable. Kentucky producers have had some success in marketing greenhouse-grown herbs wholesale to major grocery chains. Direct marketing through roadside stands is also a possibility.

Live herb plants are most often produced for point-of-sale markets such as farmer markets, local garden



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centers, local grocery stores, and roadside stands. Live plants are marketed for use in traditional herb and vegetable gardens or can be promoted for “edible landscaping” to homeowners and landscape contractors. Larger grocery stores may also sell live herb plants, but marketing to these outlets requires a consistent volume of quality plants throughout the year.

Value-added products such as herbal teas, butters, jellies, flavored oils, bouquet garni, and wreaths are other ways to market herbs. Displaying recipes with fresh-cut or live herbs can help promote the sale of these crops.

Market Outlook

Current consumer demand for herbs and herb products is high, as is the interest in natural, organically grown products. In addition, the market for ethnic herbs, such as cilantro, is expanding. Wholesale market channels are often more difficult to access than direct markets; however, some Kentucky producers have gained access to regional wholesale markets because of superior product quality.

Providing fresh, high-quality herbs when a comparable product is not available is one key to successful herb marketing. Off-season production may mean the use of row covers, high tunnels, or greenhouses to extend the season. Another key is providing a fresher product than the one currently available. For example, field-grown fresh cilantro from California is commonly available at local supermarkets; however, the quality is reduced by the three-day shipment from out of state. Local growers could successfully compete for this market by providing a fresh, consistent supply of this herb.

In general, herbs are part of a specialized niche market that may take some time to develop. Growers may find that they spend more time



CONTAINER-GROWN HERBS FOR SALE AT A FARMERS MARKET.

marketing their product than actually producing it. Producers are cautioned against entering herb production as their primary business, but instead should consider beginning small and expanding only as the market expands. Herbs may be a good supplement to the existing product line of a greenhouse or farm already in business.

Production considerations

Site selection and planting

FIELD-GROWN CUT HERBS

In general, field-grown herbs can be produced using similar cultivation techniques used for standard or organic vegetable crops. However, specific cultural requirements can vary depending on the herb. As a rule, herbs are easy to grow, tolerating a wide range of soils and growing conditions. Preferably, select a warm, sunny site with good soil drainage and few weed problems. Raised beds with plastic mulch and drip irrigation increase yields and produce a cleaner product. Some herbs can be direct-seeded, while others should be transplanted. Depending on the herb and the targeted market, multiple crops from sequentially seeded or transplanted crops may be required. The use of row covers or low tunnels can help extend the season.

PROTECTED CULTIVATION CUT HERBS

Herbs can be grown in soil beds under protected cultivation (i.e., greenhouse or high tunnels). Seeds can be directly sown into raised beds and thinned to a proper spacing, or the grower

can choose to use transplants. Alternatively, plants can be grown in a greenhouse bench with a 6- to 8-inch-tall frame filled with an appropriate greenhouse substrate. This reduces the incidence of soil-borne diseases. In both systems, drip irrigation is highly recommended because it gives the grower more control over the root zone moisture level and greatly reduces splashed soil so the leaves are easier to clean. Protected cultivation systems work best when a single herb is grown in the entire bed. Growers seeking to produce smaller quantities of many different herbs should group herbs with similar cultural requirements in the same bed or alternatively, consider producing plants in large individual nursery containers (1- to 3-gallon size).

Protected cultivation herb production can be adapted to conventional or organic production systems. Herb plants can also be produced hydroponically. Growing herbs hydroponically reduces cleaning requirements after harvest; however, hydroponic production is difficult to do organically and requires significant investment and knowledge.

CONTAINER-GROWN FRESH HERBS

Fresh herbs are produced in containers as point-of-sale garden transplants or to be sold for fresh kitchen herbs at farmer markets or groceries. Container-grown fresh herbs are most commonly produced under greenhouse conditions. Container size is usually 4 to 6 inches, and marketing may be enhanced by producing in “environmentally friendly” biocontainers. Plants can be directly sown in the finished container often with multiple seeds (seedlings) per container, or transplants can be purchased from wholesale plug specialists for finishing in larger containers. Greenhouse production is similar to standard floral crop production methods except plants are started on a more regular (weekly) basis to obtain a



HERB PRODUCTION IN ALTERNATIVE BIOCONTAINERS.

consistent supply of plants at the proper stage of development for optimal sales. Often containers are subirrigated on ebb and flow benches or on capillary mats to keep the foliage clean. Plants can be produced under standard or organic conditions.

Pest management

Preventative pest management practices utilizing an Integrated Pest Management (IPM) program should be the main means of disease and insect control. Following good cultural practices, such as proper crop rotations and sanitation, is essential

in minimizing losses due to pest problems. There are limited pesticides available for field and greenhouse herb production. Consult the University of Kentucky's Insecticides for Managing Herb Pests – ENTFACT-323 (<http://www2.ca.uky.edu/entomology/entfacts/ef323.asp>) for a list of approved products for use during herb production. Weed control in outdoor beds or under protected cultivation is accomplished through hand hoeing and mechanical cultivation. Organic or plastic mulches help with moisture retention and reduce weed competition. Plants should receive adequate, but not excessive, water and fertilizer to prevent stress. Healthy plants are much less susceptible than stressed plants to attack by both insect and disease pests.

Harvest and storage

The proper stage of harvest will depend upon a number of factors, including the type of herb and market. Herbs are hand-harvested and then washed, weighed, and packaged. Hydroponic plants are generally harvested and shipped with the roots intact for longer post-harvest life. Plants are often packaged individually in plastic bags and then boxed as the market requires. Excess fresh herbs can be dried and stored until marketed.

Labor requirements

Herb production is labor intensive because

these crops are planted and harvested by hand. Labor is needed for seed sowing, transplanting, harvest, packaging, and shipping. The harvest and packaging process can be especially time-consuming. For example, the total labor for one 100-foot by 4-foot bed of basil is at least 7 hours; harvest and packing is nearly half the total labor amount.

Economic considerations

Initial investments include land preparation, purchase of plants or seeds, and installation of an irrigation system. Additional expenses can be incurred by growers using season extension structures, such as high tunnels or greenhouses. Growers planning to market dried herbs will need an on-farm drying facility. Investment will be required to train laborers for herb production, harvest, and packaging.

Culinary herb production can result in significant returns to the owner's land, labor, and investment. A 100-foot by 4-foot bed of basil marketed at \$10 per pound can return more than \$150 to land and management. Higher-value herbs, such as chives, can generate even greater value per square foot of production. For well-managed, small-scale, direct-market herb production, producers could generate returns to land, labor, and management from \$5,000 to \$10,000 per acre. Greenhouse production of herbs, depending on the crop produced, can potentially generate greater profits but requires significantly more investment. As with any new enterprise, it is critical that producers carefully analyze the economic viability of the operation. A well-developed production and marketing plan should be in place before beginning production of culinary herbs.

Selected Resources

- Culinary Herbs, HO-74 (University of Kentucky, 2005) <http://www.ca.uky.edu/agc/pubs/ho/ho74/ho74.pdf>

- NCHerb.org (North Carolina State University) <http://www.ces.ncsu.edu/fletcher/programs/herbs/>
- Greenhouse Production of Garlic Chives and Cilantro (University of Kentucky, 1996) <http://www.hort.purdue.edu/newcrop/proceedings1996/V3-594.html>
- Selected Internet Resources for Herb Marketing (University of Kentucky, 2005) <http://www.uky.edu/Ag/CCD/herbmarketing.pdf>
- Commodity Specific Food Safety Guidelines for the Production, Harvest, Post-Harvest, and Processing Unit Operations of Fresh Culinary Herbs (Western Growers, 2013) 1.3 MB file <http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/ProducePlantProducts/ucm337088.htm>
- Herb Production in Organic Systems (ATTRA, 2005) <http://attra.ncat.org/attra-pub/om-herb.html>
- Herbs: Organic Greenhouse Production (ATTRA, 2005) <http://attra.ncat.org/attra-pub/summaries/summary.php?pub=53>
- International Herb Association <http://www.iherb.org>
- Iowa Vegetable Production Budgets: Basil (Iowa State University, 2006) <http://www.extension.iastate.edu/Publications/pm2017.pdf>
- Local Foods No. 1 – Seed Spices: Cumin, Dill, Anise, Fennel, Caraway, Ajwain <http://attra.ncat.org/attra-pub/summaries/summary.php?pub=344>
- Local Foods No. 2 – Cilantro (ATTRA, 2010) <http://attra.ncat.org/attra-pub/summaries/summary.php?pub=345>
- Local Foods No. 3 – Basils (ATTRA, 2010) <http://attra.ncat.org/attra-pub/summaries/summary.php?pub=346>
- Local Foods No. 4 – Oregano (ATTRA, 2010) <http://attra.ncat.org/attra-pub/summaries/summary.php?pub=347>

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