Center for Crop Diversification
Martin-Gatton College of Agriculture, Food and Environment

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Culinary Herbs

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Introduction

Culinary herbs are fresh or dried plant parts used as a food flavoring; mostly prepared from leaves, but can also be prepared from flowers, fruits and roots. Some of the more popular commercially grown herbs include cilantro or coriander (*Coriandrum sativum*), chives (*Allium schoenoprasum*), dill (*Anthum graveolens*), French tarragon (*Artemisia dracunculus*), 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*).



Greenhouse production of basil

Marketing

Culinary herbs may be sold fresh, dried, or as live plants, and will add variety and sales volume in direct markets like farmers markets, on-farm stands and community supported agriculture (CSA) memberships. Dried herbs may also be marketed as ornamental products to florists or directly to consumers as wreaths. Live plants can be marketed for use in traditional herb and vegetable gardens and may also be promoted for “edible landscaping” to homeowners and landscape contractors. Displaying recipes with fresh-cut or live herbs can help promote the sale of these crops. Value-added

products, such as herbal teas, butters, jellies, flavored oils, and bouquet garni are other ways to market herbs, but growers must be aware of the food processing regulations that govern these products.

Small-scale wholesale markets (direct to local restaurants and grocers) are also possible for fresh herbs. Interest is usually greatest among chefs for herbs used in higher volumes, such as basil, chives, cilantro, parsley, and rosemary. Kentucky chefs surveyed in the past have also noted specific interests in horseradish, oregano, sage, tarragon, and thyme. Larger-scale greenhouse production of fresh-cut herbs, for wholesale to large-scale grocery chains, has also occurred in Kentucky.



Container-grown herbs for sale at a farmers market

Market Outlook

Persistent consumer food and lifestyle trends favor demand for culinary herbs at both direct and wholesale marketing levels. The interest in organic and natural food products continues, and consumers continue to be interested in more diverse flavors and cuisines. Interest is also expanding for herbs traditionally used in ethnic cuisines. Cilantro is one example of a fresh culinary herb that started as a niche product and is now a mainline fresh vegetable commodity.

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 will take time to develop. Growers may find that they spend more time marketing their product than actually producing it. Growers 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. Soil tests should be taken in advance of planting to amend soil nutrients and to adjust soil pH. 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. Beware of herbicide or chemical residue that may persist in soils from previous crops.



Chives

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-inch 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 herb cultivation is adaptable to conventional or organic production systems, and herbs can be produced hydroponically. Growing herbs hydroponically reduces cleaning requirements after harvest; however, hydroponic production is very difficult to do organically and requires significant investment and a great deal of knowledge.



Rosemary

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 farmers 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 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 and dry. 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 “Insecticides for managing herb pests – ENTFACT-323 (http://entomology.ca.uky.edu/files/efpdf2/ef323.pdf) 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, but be aware that drying is considered food processing. Growers should consult with the Kentucky Department of Agriculture on current regulations related to selling dried products.

Labor requirements

Herb production is labor intensive due to the hand planting and harvesting required. 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 seven 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 could return more than $130 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 business, production and marketing plan should be in place before beginning production of culinary herbs.

References/Resources:

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