COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT
Center for Crop Diversification Crop Profile

Hanging Baskets

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Introduction

Incorporating hanging baskets in with bedding plant production enables growers to generate income from otherwise unused space above benches and in walkways. Hanging baskets can fetch a higher price (on a per plant basis) than small pots and can, therefore, enhance the profitability of greenhouse bedding plant operations. In some cases, growers may devote whole greenhouses or sections of greenhouses to hanging basket production.

Marketing

Potential retail markets include farmers markets and direct sales from the greenhouse or farm. Wholesale markets include local garden centers, landscape contractors, discount stores, grocery stores, farm stores, and roadside stands. Hanging baskets are also frequently offered at Kentucky's produce auctions.

Market Outlook

Hanging baskets accounted for more than 7% of floriculture sales from the 15 largest floriculture states in 2009; nationally, hanging basket sales have accounted for 10% to 15% of total retail garden center sales. Hanging baskets are often categorized in the consumer's discretionary spending category. Consumer spending on such items declined during the economic downturns of the 2000s; sales of foliage plants in pots and hanging baskets for indoor

or patio use declined by 19% between 2005 and 2006. The decline in hanging basket sales slowed by 2010, and average prices for hanging baskets increased slightly across most categories during the 2010s. From 2013 forward, larger hanging baskets incorporating diverse plants in unique containers are expected as a consumer trend. Hanging baskets continue to be a discretionary consumer expense, with more potential likely for increasing category sales to consumers in upper income demographics.

Production considerations

Plant selection

The number of seedlings or cuttings transplanted to a hanging basket depends on the container size, the plant species growth rate, as well as plant quality and cost. The amount of production time available can also be a factor. Plant vigor and height need to be coordinated so that plants grow together well. Each container

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can be planted to one species (monoculture) or multiple species (mixed). It is important that all plant material in a single container have similar cultural requirements for light and watering. Flower colors in mixed baskets should not clash with each other. For growers beginning mixed species hanging basket production there are many online resources available offering basket 'recipes' that have been tested and shown to work well. An artfully arranged mixed hanging basket is highly marketable and can bring a premium price, especially at independent retailers.

Commonly grown hanging plants include ferns (various genera), fuchsia (*Fuchsia* spp.), impatiens (*Impatiens* spp.), New Guinea impatiens (*Impatiens hawkerii*), geranium (*Pelargonium* spp.), petunia (*Petunia* x *hybrida*), verbena (*Verbena* spp.), bacopa (*Sutera* spp.), lantana (*Lantana* spp.), and many more. Plants should be selected for the available market but also for their compatibility to a defined greenhouse environment. Detailed production information for most of these crop plants can be found in the Ball Redbook referenced below.

Site selection and planting

A heated greenhouse structure is necessary for producing hanging baskets. Plants are propagated from seeds or cuttings and can either be grower-grown or purchased. Growers who purchase transplants, rather than starting them in-house, are referred to as "finishers," an option many small to medium growers choose. Growers who purchase rooted cuttings or plugs may still opt to produce some of the more easily grown crops from seeds or cuttings. Selecting the right size of plug can be vital to profitability. Growers should compare the cost of heating the greenhouse early in the year versus buying larger plugs later in the year. The USDA has developed a free computer program to allow growers to predict greenhouse heating costs and crop growth at various temperatures. This program is called 'Virtual Grower' and can be downloaded from the USDA website (refer to Selected Resources at the end of this profile).

Many soilless mixes have proven successful for growing quality hanging plants. The choice of mix can depend on a number of factors, including grower preference, cost, and type of irrigation. There are many commercial mixes available that are recommended specifically for hanging basket production. Some growers, usually the larger established ones, choose to create their own custom mixes on-site. However, this requires expensive, specialized equipment.

The number of cuttings or seedlings planted in a basket can vary from one to eight, depending on pot size, plant quality, growth rate, and cost. Many growers choose to use green or white 10-inch to 12-inch plastic containers with either wire or plastic hangers. Wire baskets lined with peat moss or coir (coconut fiber) can also be used, depending on customer demand.

A drip irrigation system is the most efficient means for the distribution of water and nutrients; however, it is essential to control emitters so that there is no excessive dripping on the bench plants below. Depending on the species and variety of plants produced, additional inputs such as pinching, dead-heading, or plant growth regulator applications may be necessary. Timing production properly to have a wide assortment of species ready when the market demands is critical to profitability. The USDA 'Virtual Grower' program can also assist in developing production schedules based on grower location and greenhouse temperatures.

Pest management

Greenhouse conditions that favor plant growth also favor the rapid build-up and spread of insects and diseases. Potential disease problems include damping-off, root rots, powdery mildew, fungal leaf spots, and impatiens necrotic spot virus. Thrips, aphids, mites, fungus gnats, shore flies, and white flies are common insect pests. Caterpillars can also be a problem in greenhouses with open sides. Prevention and careful monitoring are the keys to insect and disease

control. Growers should scout for pests at least twice per week to catch infestations before they reach critical levels. A number of greenhouse pests have developed pesticide resistance, so multiple applications of chemicals with different modes of action may be necessary to control many of these problems. Always follow the label instructions for chemical rotation.

Weed control under benches and around the greenhouse will also help reduce insect pests and disease problems; however, herbicides must never be applied in greenhouses when crops are present. Allowing the greenhouse to freeze in the winter will help prevent pests from overwintering. Growers must remember to drain all water lines in the fall to avoid damage to plumbing components.

Post-production

Consumers demand uniformly flowering plants that are cascading over the rim of the basket. The foliage should be dense enough that no potting soil is visible. Proper post-production care is essential to maintaining a quality product up until purchase. Plants ready for sale should be kept cool and shaded from direct sun to extend their shelf life. Ideally, plants should be sold within 3 to 5 days after removal from the greenhouse.

Economic considerations

Producing hanging baskets can be a highly profitable venture; however, it is a high-risk business with significant start-up costs as well as demanding labor and management. Initial investments include greenhouse construction, production system costs, and equipment.

Hanging basket production can be a way to utilize overhead space in the greenhouse and add more value of production per square foot. The greatest expenditures for hanging basket production (aside from the greenhouse) are usually the cuttings/seedlings and the hanging basket containers. Labor costs usually range from 3 to 5 minutes per basket. Some smaller growers maximize their sheltered growing resources by moving hanging baskets from a greenhouse to a high tunnel or other protected shelter as plants mature and outside temperatures become more favorable.

The price of a production-ready greenhouse, excluding land costs, can run from the $5 per square foot range for a Quonset-style poly house to more than $20 per square foot for glass panel houses. Production costs and returns vary greatly depending on crops grown, greenhouse size, production system, and marketing strategy. Producers should develop production cost estimates specific to their situation. Useful sample budgets are available from Rutgers (referenced below).

Selected Resources

In print

- Ball RedBook: Crop Production, Volume 2. Jim Nau, editor. 2011 (18th ed.). Ball Publishing, Inc.: West Chicago, IL. 800 pp. http://www.ballpublishing.com/BallPub/_RedBook.aspx

On the Web

- Controls for Greenhouse Ornamental Insect Pests, ENT-421 (University of Kentucky, 2004) http://www.uky.edu/Agriculture/Entomology/entfacts/trees/ef421.htm
- The Greenhouse Business in Kentucky – A Review of Crops and How to Begin a Business (University of Kentucky, 2002) http://www.uky.edu/Ag/CCD/anderson/greenhousesinkentucky.pdf
- Managing the Greenhouse Environment to Control Plant Diseases, PPFS-GH-01 (University of Kentucky, 2004) http://www.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/PPFS-GH-1.pdf
- Selected Resources and References for Commercial Greenhouse Operators (University of Kentucky) http://www.uky.edu/hort/sites/www.uky.edu.hort/files/documents/greenhousereferences.pdf
- North Carolina State University Floricultural Science http://www.ces.ncsu.edu/depts/hort/floriculture/

- Floriculture Extension Publications (Purdue University) https://ag.purdue.edu/hla/lopezlab/Pages/ExtensionPub.aspx
- Greenhouse Costs of Production Budgets (Rutgers, 2008) http://aesop.rutgers.edu/~farmmgmt/Green-House/Greenhouse-Index.html
- Greenhouse Production of Flowering Baskets, ANR-1147 (Alabama Cooperative Extension, 2007) http://www.aces.edu/pubs/docs/A/ANR-1147/
- Hanging Baskets (Texas A&M) http://aggie-horticulture.tamu.edu/floriculture/hanging-basket/growing/index.html
- Integrated Pest Management for Greenhouse Crops (ATTRA, 1999) https://attra.ncat.org/attra-pub/summaries/summary.php?pub=48
- Interactive Greenhouse Crop Budget with Five Crops (Rutgers University, 2008) http://aesop.rutgers.edu/~farmmgmt/greenhouse/greenhouseinteractiveform.html
- Potted Plant Production Guidesheets (Purdue University) https://ag.purdue.edu/hla/lopezlab/Pages/ExtensionPub.aspx#10
- Virtual Grower 3 (USDA-USDA) http://www.ars.usda.gov/Research/docs.htm?docid=22087

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