



Bedding Plants

Cheryl Kaiser¹ and Matt Ernst²

Introduction

Hundreds of different annuals, perennials, herbs and vegetable transplants can be grown and sold as bedding plants. In general, the term ‘bedding plant’ refers to any plant that is produced and sold for planting in the landscape, garden or large containers (such as patio pots).

A single commercial greenhouse business may produce as many as 500 different kinds of plants in the spring. Some of the most common ornamental bedding plants include annuals such as begonia (*Begonia* spp.), geranium (*Pelargonium* spp.), impatiens (*Impatiens* spp.), marigold (*Tagetes* spp.), pansy (*Viola* spp.) and petunia (*Petunia x hybrida*). Tomatoes (*Lycopersicon esculentum*), peppers (*Capsicum annuum*) and cole crops (*Brassica oleracea*) are popular vegetable transplants. Perennials such as hosta may be marketed as bedding plants.

Marketing

Bedding plants are as much a marketing business as a production business. Growers must be willing to develop their own marketing strategies and to adjust production to changing consumer preferences. 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. Bedding plants are also popular sale items at Kentucky’s produce auctions, where prices can range from wholesale to retail levels, depending on buyers. Weather and production seasonality can be significant challenges for marketing bedding plants. Retail sales may be signifi-



cantly curtailed in late April to mid-May by inclement weather on weekends, and those sales are often not recovered completely on other weekends.

Market Outlook

Bedding plants are the largest single category of floriculture industry sales, accounting for more than 40 percent of wholesale production in 2015, according to USDA. Sales of bedding plants rose sharply in the early 2000s as consumers demanded more landscape and gardening plants. Economic slowdown resulted in some consolidation among large bedding plant producers between 2005 and 2015.

Some opportunities exist for mid-sized and niche bedding plant growers committed to excellent management and market analysis. A major change in bedding plant marketing during the 2000s is the movement away from ‘packs,’ or trays containing 18 to 48 individual cells, toward bedding plants in 4-inch and 6-inch pots. Even many landscapers also now prefer larger plant sizes for more immediate impact in home and commercial landscapes.



¹Cheryl Kaiser is a former Extension Associate with the Center for Crop Diversification.

²Matt Ernst is an independent contractor with the Center for Crop Diversification.

Hanging baskets and patio pots, especially those containing multiple species, have also increased in market share. These ‘instant gardens’ appeal to busy professionals and urban consumers with limited gardening space. Large containers frequently fetch a higher price relative to the inputs needed to produce them, thus giving the grower a better potential for profits.

Production Considerations

Site selection and planting

A heated greenhouse structure is necessary for producing most bedding plants. Crops requiring short production periods may be produced in a cold frame, high tunnel or in an unheated greenhouse for late spring and early summer sales. Plants are generally propagated from seed sown from late December to March, or bought in as rooted cuttings (referred to as ‘plugs’) received February to April.



One major production decision facing new growers is whether to invest in the equipment necessary to grow their own plants from seed or to purchase transplants (plugs) from another producer. Growers who purchase transplants, rather than growing them in-house, are referred to as bedding plant ‘finishers.’ This is an option many small to medium growers choose. Growers who purchase plugs may still opt to produce some of the more easily grown crops from seed.

There are numerous commercial growing substrates available and there is no single best formulation for growing quality bedding plants. The choice of substrate can depend on a number of factors including grower preference, cost, volume of container and type of irrigation. Some growers, usually the larger established growers, choose to create their own custom mixes on-site. However, this requires expensive, specialized equipment.

Timing production properly to have a wide assortment of species ready when the market demands is critical to profitability. Growers must carefully schedule each crop to make sure it will reach the desired stage of growth at the appropriate time. There are many resources available to help growers with this complex

task. Reference books and extension articles are good sources of comprehensive information on bedding plant scheduling. The breeder or marketer companies that supply bedding plant seeds and cuttings are good sources for variety-specific scheduling recommendations. All reputable companies will provide technical support to their grower customers.

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. Common insect pests include thrips, aphids, mites, fungus gnats, shore flies and whiteflies. Caterpillars can also be a problem in greenhouses with open sides. Prevention and careful monitoring are the keys to insect and disease control.

Weed control under benches and around the greenhouse will also help reduce insect pests and disease problems; however, herbicides must be specifically registered for use in the greenhouse environment to avoid harmful volatilization and 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 prevent damage to plumbing components.

Post-production

Consumers expect flowering bedding plants to be blooming at the time of purchase. 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 three to five days after removal from the greenhouse.

Economic Consideration

Bedding plant production can generate long-term profits, with gross sales as high as \$20 per square foot of greenhouse bench space. However, this 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. The cost of a production-ready greenhouse, excluding land costs, can range from around \$5 per square foot for a Quonset-style poly house to more than \$20 per square foot for glass panel houses. Production costs for bedding plants often range from \$5 to \$10 per square foot; however, costs and returns can vary greatly depending on crops grown, greenhouse size, production system and marketing. Growers should develop production cost estimates specific to their situation. Useful sample budgets for bedding plant production costs are available from Rutgers University, and the VirtualGrower software, developed from USDA research, may also be helpful in estimating bedding plant production costs.

Selected Resources

On the web

- Controls for Greenhouse Ornamental Insect Pests, ENT-421 (University of Kentucky, 2004) <https://entomology.ca.uky.edu/ef421>
- Managing the Greenhouse Environment to Control Plant Diseases, PPFS-GH-01 (University of Kentucky, 2016) <http://plantpathology.ca.uky.edu/files/ppfs-gh-01.pdf>
- Selected Resources and References for Commercial Greenhouse Operators (University of Kentucky, 2002) <http://www.uky.edu/hort/sites/www.uky.edu/hort/files/documents/greenhoureferencess.pdf>

- Bedding Plants Crop Guide (Texas A&M University) <https://aggie-horticulture.tamu.edu/smallacreage/crops-guides/greenhouse-nursery/bedding-plants/>
- Commercial Production of Vegetable Transplants, B-1144 (University of Georgia Cooperative Extension, 2017) <http://extension.uga.edu/publications/detail.html?number=B1144>
- Floriculture (Purdue University) <https://ag.purdue.edu/hla/Extension/Pages/floriculture.aspx>
- Floriculture Science (North Carolina State University) <https://horticulture.ces.ncsu.edu/horticulture-ornamentals/floriculture/>
- Greenhouse Costs of Production Budgets (Rutgers, 2008) <http://farmmgmt.rutgers.edu/greenhouse/greenhouse-index.html>
- Virtual Grower 3 (USDA-ARS) <http://www.ars.usda.gov/Research/docs.htm?docid=22087>

Books in print

- Ball Redbook, Vol. 2: Crop Production (18th edition). Jim Nau, ed. 2011. Ball Publishing. 800 pp. https://www.ipgbook.com/ball-redbook-products-9781883052683.php?page_id=21

Suggested Citation:

Kaiser, C. and M. Ernst. (2019). *Bedding Plants*. CCD-CP-56. Lexington, KY: Center for Crop Diversification, University of Kentucky College of Agriculture, Food and Environment. Available: <http://www.uky.edu/ccd/sites/www.uky.edu/ccd/files/beddingplants.pdf>

Reviewed by Brian Whipker, Professor of Floriculture, North Carolina State University, and Dewayne Ingram, UK Extension Professor
Photos courtesy of Dewayne Ingram

March 2019

For additional information, contact your local **County Extension** agent

Educational programs of Kentucky Cooperative Extension serve all people regardless of economic or social status and will not discriminate on the basis of race, color, ethnic origin, national origin, creed, religion, political belief, sex, sexual orientation, gender identity, gender expression, pregnancy, marital status, genetic information, age, veteran status, or physical or mental disability.