

Greenhouse & Ornamentals

Some articles are in PDF format and require Adobe Acrobat Reader for viewing. Click [here](#) to download the reader.

This page includes information on [cut flowers](#), [landscape ornamentals](#), and [greenhouse management](#). Information relating to more than one of these topics can be found under [general](#). See also:

- [Production/IPM -- Integrated Pest Management](#)
http://media.cce.cornell.edu/hosts/agfoodcommunity/afs_temp3.cfm?topicID=413
- [Business Management/Horticultural Business Management](#)
http://media.cce.cornell.edu/hosts/agfoodcommunity/afs_temp3.cfm?topicID=398

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General

The Department of Horticulture at Cornell University

<http://www.hort.cornell.edu/>

Cornell University

Department of Horticulture
134A Plant Science Bldg.
Cornell University
Ithaca, NY 14853
Phone: (607) 255-4568
Fax: (607) 255-9998
E-mail: hort@cornell.edu

Floriculture, Ornamentals, and Turfgrass

<http://www.hort.cornell.edu/extension/commercial/florturf.html>

Department of Horticulture, Cornell University

Links to publications, information about geophytes, Cornell University Turfgrass Times, and WeedFacts.

Establishing and Operating a Garden Center: Requirements and Costs

<http://www.nraes.org/publications/nraes161.html>

Susan S. Barton, Bridget Behe, Charles R. Hall et al., Natural Resource, Agriculture, and Engineering Service, 2002

Discusses planning, capital investments, product mixes, labor, customer profiles, garden center layouts, pricing, advertising, and financial analysis. 2 example businesses are analyzed throughout the book: 1 with annual sales of \$1 million and another with annual sales of \$350,000. The book is for potential and current

garden center owners, their business advisors, educators, and researchers.

66 pages. Item NRAES-161. \$15 plus S&H. Available from [NRAES Horticulture Publications](http://www.nraes.org/publications/horticulture.html) [http://www.nraes.org/publications/horticulture.html]. Call or write to:

NRAES
Cooperative Extension
P.O. Box 4557
Ithaca, NY 14852-4557
Phone: (607) 255-7654
Fax: (607) 254-8770
E-mail: nraes@cornell.edu

Country Folks Grower

<http://www.cfgrower.com/>

Country Folks Grower is a trade newspaper covering monthly topics for greenhouses, nurseries, fruit and vegetable growers, direct marketers, and gardening centers on the east coast.

Monthly features include: trade shows, fruit and vegetable equipment, direct marketing, irrigation, pest control, packaging, new products and supplies, structures and storage buildings, specialty crops, greenhouses, and products.

For subscription information, write or call:
6113 State Highway 5
Palatine Bridge, NY 13428
Phone: 1-800-218-5586 or (518) 673-3237 ext. 242
Fax: (518) 673-2381
E-mail: dwren@leepub.com

Cut Flowers

Cut Flowers, Greenhouses, and Nurseries

<http://www.agnr.umd.edu/users/ipmnet/facts.htm>

University of Maryland Cooperative Extension

Factsheets on producing annual sunflowers, Asiatic and Oriental lilies, celosia, yarrow as cut flowers, purple coneflowers, anemone, and larkspurs as cut flowers.

Integrated Pest Management for Cut Flower Growers

<http://www.hort.uconn.edu/ipm/greenhs/htms/cutflwr.htm>

University of Connecticut

Information for cut flower growers about how to use integrated pest management to manage pests while maintaining crop productivity, quality, and marketability.

Floral Facts -- Index of Factsheets

http://www.umass.edu/umext/floriculture/fact_sheets/index.html

University of Massachusetts Extension

Index of factsheets on topics of interest to commercial flower growers, including cut flowers.

The Flower Farmer: An Organic Grower's Guide to Raising and Selling Cut Flowers

Lynn Byczynski

An excellent resource for beginning and experienced flower growers. Chapters include choosing varieties, site and soil preparation, planting and transplanting, woody ornamentals, dried flowers, postharvest handling, arranging, and much more. A multitude of marketing options, from pick-your-own operations and farmers' markets to selling directly to florists, supermarkets, and wholesalers is investigated.

207 pages. Available for \$28 (\$25 for members) from [Association of Specialty Cut Flower Growers](http://www.ascfg.org/) [http://www.ascfg.org/]. To order publications, call the ASCFG at (440) 774-2887.

Field Grown Cut Flowers: A Practical Guide and Sourcebook

Alan Stevens

This book concentrates on production from a labor management perspective. Discusses marketing approaches, production factors, and management issues for the profitable production of specialty cut flowers.

404 pages. Available for \$40 (\$36 for members) from [Association of Specialty Cut Flower Growers](http://www.ascfg.org/) [http://www.ascfg.org/]. To order publications, call the ASCFG at (440) 774-2887.

Association of Specialty Cut Flower Growers

<http://www.ascfg.org/>

The ASCFG's essential goal is to help growers of specialty cut flowers produce a better crop. Their web site features regional events, research activities, resources, and a searchable database of cut flower growers.

ASCFG
M.P.O. Box 268
Oberlin, OH 44074
Phone: (440) 774-2887
Fax: (440) 774-2435
E-mail: ascfg@oberlin.net

[ATTRA Herb & Flower Resources](#)

<http://attra.ncat.org/horticultural.html#Herbs>

Appropriate Technology Transfer for Rural Areas

ATTRA is one of the best sources of information on cut flowers. It provides many publications, both online and in print, for those interested in growing cut flowers, including:

- [Sustainable Cut Flower Production](http://attra.ncat.org/attra-pub/cutflower.html) -- Lane Greer
<http://attra.ncat.org/attra-pub/cutflower.html>
- [Woody Ornamentals for Cut Flower Growers](http://attra.ncat.org/attra-pub/woodyornamentals.html) -- Janet Bachmann
<http://attra.ncat.org/attra-pub/woodyornamentals.html>

These and other ATTRA publications can also be obtained for free by calling ATTRA at 1-800-346-9140, Monday-Friday, from 7am to 7pm CST.

Landscape Ornamentals

Landscape Business Planning Guide

<http://aem.cornell.edu/outreach/extensionpdf/eb0313.pdf>

Jeremy Stark, Department of Applied Economics and Management, Cornell University, August 2003

This business planning guide aims to reduce the risk of failure for landscaping businesses through the creation of a well-conceived business plan, optimizing the chances of survival, and ultimately, prosperity.

Herbaceous Perennials Production: A Guide from Propagation to Marketing

<http://www.nraes.org/publications/nraes93.html>

Dr. Leonard Perry, University of Vermont Cooperative Extension System, Natural Resource, Agriculture, and Engineering Service, 1998

This publication is a comprehensive information source that considers the diversity of situations encountered by perennial growers in businesses of all sizes. Key chapters in the book discuss production systems and schedules; propagation (including media, nutrients, environmental requirements, and methods); plug production; transplant and seedling care; nursery and field production; pest control (including deer and small animals); and forcing out-of-season bloom. Practical discussions about starting a business, marketing and customer service, setting prices for plants, and designing a production facility are included as well.

220 pages. Item NRAES-93. \$27 plus S&H. Available from [NRAES Horticulture Publications](http://www.nraes.org/publications/horticulture.html) [<http://www.nraes.org/publications/horticulture.html>]. Call or write to:

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P.O. Box 4557

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Fax: (607) 254-8770
E-mail: nraes@cornell.edu

Cultural Ornamental Problems

<http://www.uri.edu/ce/factsheets/indices/0cultornprobindex.html>

University of Rhode Island Cooperative Extension

An index of online publications from URI about specific cultural problems with ornamental plants.

Ornamental horticulture publications

<http://ceinfo.unh.edu/Agriculture/Documents/hortpubs.htm>

University of New Hampshire Cooperative Extension

Links to ornamental horticulture pest management factsheets.

Ornamental Trees & Shrubs

<http://www.wvu.edu/~agexten/hortcult/treeshru/index.htm>

West Virginia University Extension Service

Links and resources about growing ornamental trees and shrubs.

University of Connecticut Plant Database Home Page

<http://www.hort.uconn.edu/plants/>

University of Connecticut

Comprehensive information and photographs of over 600 woody landscape species suitable for cultivation throughout the state. The newest feature of this resource, the Plant Selector, affords users a quick, powerful method of finding plants that express specific ornamental and cultural traits.

Landscape Nursery and Urban Forestry

<http://www.umassgreeninfo.org/>

University of Massachusetts Landscape Nursery, and Urban Forestry Program

Factsheets, publications, services, and resources pertaining to landscape nursery and urban forestry.

For more information, call (413) 545-0111 or e-mail greeninfo@umext.umass.edu.

American Nursery and Landscape Association

<http://www.anla.org/>

The American Landscape and Nursery Association is the national voice of the nursery and landscape industry. Members grow, distribute, and retail plants of all types, and design and install landscapes for residential and commercial companies. ANLA provides education, research, public relations, and representation services

to members.

American Nursery and Landscape Association
1000 Vermont Ave. NW
Suite 300
Washington, DC 20005-4914
Phone: (202) 789-2900
Fax: (202) 789-1893

ATTRA Herb & Flower Resources

<http://attra.ncat.org/horticultural.html#Herbs>

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- [Woody Ornamentals for Cut Flower Growers](http://attra.ncat.org/attra-pub/woodyornamentals.html) -- Janet Bachmann

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EPA - Agriculture Sector: Nurseries and Greenhouses

<http://www.epa.gov/agriculture/nurgreen.html>

U.S. Environmental Protection Agency

This site will give you information about environmental requirements specifically relating to the production of many types of agricultural crops grown in nurseries and greenhouses, such as ornamental plants and specialty fruits and vegetables.

Greenhouse

PowerPoint slides from Cornell Greenhouse Management Conference presentations

Batavia, NY, November 9-10, 2000

- [How Do You Start in Business?](http://aem.cornell.edu/special_programs/hortmgt/pres/2000_Greenhouse_Conference/Freeman.ppt) (101KB) -- R. Freeman
- [Greenhouse Site Selection and Regulations](http://aem.cornell.edu/special_programs/hortmgt/pres/2000_Greenhouse_Conference/Hall.ppt) (378KB) -- K. Dean Hall
- [Fundamentals of Financial Management](http://aem.cornell.edu/special_programs/hortmgt/pres/2000_Greenhouse_Conference/Richards.ppt) (607KB) -- S. Richards

[Developing a Marketing Plan for Your Greenhouse](http://aem.cornell.edu/special_programs/hortmgt/pres/2000_Greenhouse_Conference/Uva.ppt) (1704KB) -- W. Uva

Greenhouse Systems: Automation, Culture, and Environment

<http://www.nraes.org/publications/nraes72.html>

Natural Resource, Agriculture, and Engineering Service, 1994

These proceedings from a July 1994 international conference provides in-depth information on the engineering principles of greenhouse system design and management. The papers are grouped into 4 sections concerning automation, culture, environment, and systems integration. Papers cover fundamentals and describe the application of those fundamentals in system selection.

306 pages. Item NRAES-72. \$30 plus S&H. Available from [NRAES Greenhouse Publications](http://www.nraes.org/publications/greenhouse.html) [<http://www.nraes.org/publications/greenhouse.html>]. Call or write to:

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Water and Nutrient Management for Greenhouses

<http://www.nraes.org/publications/nraes56.html>

Natural Resource, Agriculture, and Engineering Service, 1996

Preparing stock solutions for proportioners; selecting substrate; interpreting leaf, substrate, and water test results; and estimating crop nutrient needs are necessary skills for managing a greenhouse for zero runoff. This publication will help greenhouse managers learn these skills. The book begins with discussions on general crop needs, balancing nutrient applications with crop demand, and the units used in measuring fertilizer quantities. Subsequent chapters go into more detail about specific components of the root zone: water, fertilizer, substrate, temperature, and the biotic environment. How to use a fertilizer proportioner and the features of a well-designed water and nutrient delivery system are discussed as well.

110 pages. Item NRAES-56. \$15 plus S&H. Available from [NRAES Greenhouse Publications](http://www.nraes.org/publications/greenhouse.html) [<http://www.nraes.org/publications/greenhouse.html>]. Call or write to:

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Energy Conservation for Commercial Greenhouses

<http://www.nraes.org/publications/nraes3.html>

John W. Bartok, Jr., Natural Resource, Agriculture, and Engineering Service, 2001

This newly revised, highly practical book reviews the merits and limitations of current energy-conservation strategies for commercial greenhouses. Topics covered include principles of heat loss, site selection and modification, construction materials, insulation, fuels and heating, ventilation and cooling, space utilization, utilities, strategies for reducing trucking costs, and managing for efficiency. The book, a revision of the 1989 version of the same name, will be of interest to anyone who is constructing a new greenhouse, considering renovating a greenhouse, or simply looking to increase energy conservation and efficiency in daily greenhouse operation.

84 pages. Item NRAES-3. \$17 plus S&H. Available from [NRAES Greenhouse Publications](http://www.nraes.org/publications/greenhouse.html) [http://www.nraes.org/publications/greenhouse.html]. Call or write to:

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Greenhouse Engineering

<http://www.nraes.org/publications/nraes33.html>

Extension specialists, University of Connecticut, Natural Resource, Agriculture, and Engineering Service, 1994

This manual contains current information needed to plan, construct, and control the commercial greenhouse. Major sections describe various structures, methods of materials handling, the greenhouse environment, and energy conservation. Other topics include plans for noncommercial greenhouses, access for the handicapped, and remodeling existing greenhouses. A large appendix includes conversion tables, worksheets for performing calculations, and sources of greenhouse construction materials and contractors.

212 pages. Item NRAES-33. \$30 plus S&H. Available from [NRAES Greenhouse Publications](http://www.nraes.org/publications/greenhouse.html) [http://www.nraes.org/publications/greenhouse.html]. Call or write to:

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E-mail: nraes@cornell.edu

Greenhouses for Homeowners and Gardeners

<http://www.nraes.org/publications/nraes137.html>

John W. Bartok, Jr., Natural Resource, Agriculture, and Engineering Service, 2000

Covers every aspect of designing and constructing a home greenhouse. 8 chapters discuss the following topics: greenhouse basics, selecting a greenhouse, greenhouse planning, framing materials and glazing, greenhouse layouts and equipment, the greenhouse environment, window greenhouses and growth chambers, and garden structures. The book will help readers select and design the most appropriate size and style of greenhouse to fit their needs, find the best place to locate a greenhouse, and decide whether to build a greenhouse themselves or hire a contractor to do it. It will enable aspiring and practicing greenhouse operators to make informed decisions about foundations, glazing and framing materials, space utilization, interior design, heating and cooling systems, supplemental lighting, watering and fertilizing systems, and other greenhouse design and construction issues.

214 pages. Item NRAES-137. \$25 plus S&H. Available from [NRAES Greenhouse Publications](http://www.nraes.org/publications/greenhouse.html) [http://www.nraes.org/publications/greenhouse.html]. Call or write to:

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2003 High Tunnel Production Manual

<http://www.plasticulture.org/publications/tunnel.pdf>

William J. Lamont, Jr., Michael D. Orzolek, Center for Plasticulture, Department of Horticulture, Penn State University

For centuries a wide variety of techniques have been used to extend the growing season of horticultural crops. Glass jars, glass cloches, hotcaps, cold frames, hotbeds, and greenhouses of various types have all contributed to season extension. More recently, high tunnels have become popular with growers because of their simplicity and effectiveness in protecting crops from low temperatures in both spring and fall. The *2003 High Tunnel Production Manual* offers the latest information for putting this innovative technology to work.

\$25 plus \$6 S&H per book. Click on the link above for an order form in **PDF format**. To order by credit card, fax the form to (814) 238-7051. Otherwise, send the order form with a check or money order made payable to American Society for Plasticulture to:

ASP

526 Brittany Dr.

State College, PA 16803

Evaluating Supplemental Light for Your Greenhouse

<http://ceinfo.unh.edu/Agriculture/Documents/OFAlight.pdf>

Paul Fisher, Caroline Donnelly, James Faust, University of New Hampshire Cooperative Extension

For greenhouse crops where increased photosynthesis leads to greater revenue (for example, more turns of an impatiens plug crop or increased yield of cut flowers), supplemental lighting can be a profitable investment. This article discusses seven aspects of supplemental lighting to help growers select the best lighting strategy for location and crop. Publication is in [PDF format](#).

Low-Cost Passive Solar Greenhouses

Ron Alward, Andy Shapiro, 1981

Provides a good introduction to lean-to and small solar greenhouses.

173 pages. \$7. Order from:
National Center for Appropriate Technology (NCAT)
P.O. Box 3838
Butte, MT 59702
Phone: (406) 494-4572

EPA - Agriculture Sector: Nurseries and Greenhouses

<http://www.epa.gov/agriculture/nurgreen.html>

U.S. Environmental Protection Agency

This site will give you information about environmental requirements specifically relating to the production of many types of agricultural crops grown in nurseries and greenhouses, such as ornamental plants and specialty fruits and vegetables.

ATTRA Greenhouse Production Resources

<http://attra.ncat.org/horticultural.html#Greenhouse>

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- [Organic Greenhouse Vegetable Production](#) -- Lane Greer, Steve Diver
<http://attra.ncat.org/attra-pub/ghveg.html>
- [Integrated Pest Management for Greenhouse Crops](#) -- Lane Greer, Steve Diver
<http://attra.ncat.org/attra-pub/gh-ipm.html>
- [Compost Heated Greenhouses](#) -- Steve Diver
<http://attra.ncat.org/attra-pub/compostheatedgh.html>

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