

Greenhouse IPM Resources

Apps, Printed Publications, Websites & More!

APPs & Mobile Enhanced Websites

- **Greenhouse Pest Guide - UMASS Amherst** (Free, Web App): <http://greenhousepestguide.umass.edu/>
 - **Greenhouse Disease Guide - UMASS Amherst** (Free, Web App): <http://greenhousediseaseguide.umass.edu/>
 - **Greenhouse Scout - Cornell** (\$9.99, Apple, Android): <https://itunes.apple.com/us/app/greenhouse-scout/id879950583?mt=8>
 - **IPM Pro** (\$24.99, Apple, Android): <http://www.ipmproapp.com/>
 - **Pesticide Side Effects - Biobest** (Free, Apple, Android and Blackberry): <https://itunes.apple.com/us/app/biobest-sideeffects/id497917349?mt=8>
 - **PGR Calculator - OHP Inc.** (Free, Apple): <https://itunes.apple.com/ng/app/pgr-calculator/id387478358?mt=8>
 - **PGR Mixmaster – Univ. of NH** (Free, Apple, Blackberry, Android): <http://extension.unh.edu/Mobile-App>
 - **Plant Diagnostic Sample Submission – iTunes** (Free, Apple): <https://itunes.apple.com/gb/app/plant-diagnostic-sample-submission/id669269520?mt=8>
 - **Priva's Pest & Disease Tracker** (Free with use of Priva's Fusion system, Apple): <https://itunes.apple.com/app/pest-disease/id503531433?mt=8>
 - **The Greenhouse Growers Toolbox Lite – G Smith Consulting** (Free, Apple): <https://itunes.apple.com/us/app/greenhouse-growers-toolbox/id591559140?mt=8>
 - **The Greenhouse Growers Toolbox – G Smith Consulting** (\$32.99, Apple): <https://itunes.apple.com/us/app/greenhouse-growers-toolbox/id591644356?mt=8>
 - **Insect Controls for the Greenhouse – Michigan State** (Free, Android, Apple): http://msue.anr.msu.edu/news/msu_insect_wall_chart_for_greenhouses_goes_mobile
-

Websites

BIOLOGICAL CONTROL SUPPLIERS, CONSULTANTS & INFORMATION

- **Applied Bio-nomics Ltd:** <http://appliedbio-nomics.com>
- **Assn. of Ntl. BioControl Producers: Commercial Suppliers:** <http://www.anbp.org/>
- **Becker Underwood:** <http://www.beckerunderwood.com/productservices/biological-crop-protection/>
- **Beneficial Insectary, Inc.:** <http://www.insectary.com/>
- **Biobest, Biological Systems:** <http://www.biobest.be/>
- **BioControl Network:** <http://www.biconet.com/biocontrol.html>
- **Bioworks, Inc.:** <http://www.bioworksbiocontrol.com/>
- **Buglady Consulting:** <http://www.bugladyconsulting.com/>
- **GreenMethods BioControl & IPM Resource:** <http://www.GreenMethods.com>
- **Griffin Greenhouse Supply:** <http://www.griffins.com/index.asp>
- **IPM Laboratories, Inc.:** <http://www.ipmlabs.com>
- **Koppert Biological Systems:** <http://www.koppert.nl/e005.shtml>
- **Natural Industries:** <http://www.naturalindustries.com/>
- **Sound Horticulture: Biological Controls and Compost Tea:** <http://www.soundhorticulture.com/>
- **Syngenta Bioline:** <http://www.syngenta.com/global/Bioline/en/Pages/home.aspx>

INTEGRATED PEST MANAGEMENT (IPM)

- Cornell Univ. Int. Crop & Pest Man. Guide for Veg. Crops: <http://www.nysaes.cornell.edu/recommends/>
- CT IPM Program: http://ipm.uconn.edu/pa_greenhouse/
- Griffin Greenhouse GGS Pro Tech Bulletins: <http://www.ggspro.com/new/products/bulletins.asp>
- Iowa State Entomology Index of Internet Resources: Biological Control: <http://www.ent.iastate.edu/list/directory/108>
- IPM for Commercial Hort. (Univ. of MD Coop. Ext. IPM Program): <http://extension.umd.edu/ipm>
- IPM Checklists (Gemplers): <http://www.gemplers.com/tech/ipm-checklist.htm>
- NC State Univ. Commercial Floriculture Info Center: <http://www.ces.ncsu.edu/depts/hort/floriculture/>
- NC State Univ. Dept of Entomology, Greenhouse Production: <http://www.ces.ncsu.edu/depts/ent/notes/O&T/production/index.html>
- Purdue University Floriculture: <https://ag.purdue.edu/hla/lopezlab/Pages/Grower-Resources.aspx>
- Univ. of Florida IFAS Ext. Nurseries & Greenhouses: http://edis.ifas.ufl.edu/topic_nurseries_and_greenhouses
- UMass Amherst - UMass Extension - Greenhouse Crops & Floriculture: <http://www.umass.edu/umext/floriculture/index.html>
- UNH Greenhouse & Floriculture: <http://extension.unh.edu/Agric/AGGHFL/AGGHFL.htm>
- UNH IPM: <http://extension.unh.edu/Agric/AGPMP/PMPIPM.htm>
- UVM Greenhouse IPM: <http://www.uvm.edu/~entlab/Greenhouse%20IPM/greenhouseipm.html>

ENERGY EFFICIENCY

- AgEnergy – Greenhouses (Univ. of Wisconsin Ext.): http://www.uwex.edu/energy/gh_PRES.html
- Greenhouse Energy Conservation Strategies & Alternative Fuels (SARE Learning Center): <http://www.northcentralsare.org/Educational-Resources/SARE-Project-Products/Greenhouse-Energy-Conservation-Strategies-and-Alternative-Fuels>
- Greenhouse Energy Cost Reduction Strategies Website (Michigan State Univ. Ext.): <http://www.flor.hrt.msu.edu/energy-alternative/>
- Greenhouse Energy Management Website (Cornell): <http://www.greenhouse.cornell.edu/crops/energy.htm>

PLANT NUTRITION & HEALTH

- Agdia Testing Services & Supplies: <http://www.agdia.com/>
- Hanna Instruments: <http://hannainst.com/usa/>
- NC State University - Information on Pour Thru Sampling: http://www.ces.ncsu.edu/depts/hort/floriculture/crop/crop_PTS.htm
- PennState Plant Pathology Factsheets: http://www.ppath.cas.psu.edu/EXTENSION/PLANT_DISEASE/
- Spectrum Technologies, Inc.: <http://www.specmeters.com/>
- UC IPM Pest Management Guidelines 'Diseases': <http://www.ipm.ucdavis.edu/PMG/selectnewpest.floriculture.html>
- UMASS Floric. Update 'Cultural Problems Photo Library': <http://www.negreenhouseupdate.info/index.php/cultural-problems>
- UMASS Floric. Update 'Diseases Photo Library': <http://www.negreenhouseupdate.info/index.php/diseases>
- UMASS Floric. Update 'Nutritional Disorders Photo Library': <http://www.negreenhouseupdate.info/index.php/nutritional-disorders>
- UMASS Floric. Update 'Symptoms Look Alikes Photo Library': <http://www.negreenhouseupdate.info/index.php/symptom-look-alikes>

- **UNH Greenhouse & Floriculture Website:** <http://www.ceinfo.unh.edu/Agric/AGGHFL.htm>
- **Univ. of Maine Plant Disease Images:** <http://pmo.umext.maine.edu/ipddl/ClinicImages/ImagesOpeningPage.htm>

PESTICIDE & BIO COMPATIBILITY INFORMATION

- **Biobest Biological Control Compatibility 'Side Effects Guide':** <http://www.biobest.be/neveneffecten/3/3/>
- **BioWorks - RootShield Compatibility:**
<http://www.bioworksbiocontrol.com/products/shared/compatibility-chart.pdf>
- **BioWorks – BotaniGard/Fungicide Compatibility:**
<http://www.bioworksinc.com/products/shared/fungicide-compatibility.pdf>
- **Certis USA:** <http://certisusa.com/>
- **Crop Data Management Systems - Agro-Chemical Info:** <http://www.cdms.net/LabelsMsds/LMDefault.aspx?t=>
- **EPA Pesticides:** <http://www.epa.gov/pesticides/>
- **GreenBook - Chemical Database:** <http://www.greenbook.net/>
- **Iowa State Entomology Index of Pesticide Resources:** <http://www.ent.iastate.edu/list/directory/157>
- **Koppert Biological Control Compatibility:** <http://side-effects.koppert.nl/>
- **MGS Horticultural Inc.:** <http://www.mgshort.com/>
- **National Pesticide Information Retrieval System: (MSDS's etc.):** <http://ppis.ceris.purdue.edu/>
- **Natural Industries NoFly/Fungicide Compatibility:**
<http://naturalindustries.com/commercial/Docs/2012/noflybrochure.pdf>
- **NuFarm (Cleary):** <http://www.nufarm.com/USGN/GreenhouseNursery>
- **OHP, Inc.:** <http://www.ohp.com/>
- **PAN Pesticide Database:** <http://www.pesticideinfo.org/>
- **SePRO:** <http://www.sepro.com/>

Publications Available Online

ENERGY EFFICIENCY

- **Biomass Energy for Heating Greenhouses (Univ. of Wisconsin Ext.):**
<http://learningstore.uwex.edu/Assets/pdfs/A3907-04.pdf>
- **Biomass Heating in Greenhouses: Case Studies (Univ. of Wisconsin Ext.):**
<http://learningstore.uwex.edu/Assets/pdfs/A3907-05.pdf>
- **Calculating Energy Savings (Greenhouse Grower Magazine):**
<http://www.greenhousegrower.com/article/15160/calculating-energy-savings>
- **Dealing with the High Cost of Energy for Greenhouse Operations (Virginia Coop. Ext.):**
<http://pubs.ext.vt.edu/430/430-101/430-101.html>
- **Energy Conservation for Greenhouse Growers (Mississippi State):** <http://msucares.com/pubs/infosheets/is1618.pdf>
- **Energy Conservation Opportunities for Greenhouse Structures (MN Dept. of Com. Energy Office):**
http://www.state.mn.us/mn/externalDocs/Commerce/Energy_Conservation_for_Greenhouses_120503035439_EnergyConservationforGreenhouses.pdf
- **Fuels and Alternative Heat Sources for Commercial Greenhouses (UVM Ext.):**
http://www.extension.org/pages/Fuels_and_Alternate_Heat_Sources_for_Commercial_Greenhouses
- **Energy: 'Tis the Season for Savings (GrowerTalks Magazine):**
<http://www.ballpublishing.com/growertalks/ViewArticle.aspx?articleid=19562>

- **Greenhouse Energy Conservation Checklist (UVM Ext.):**
http://www.extension.org/pages/Greenhouse_Energy_Conservation_Checklist
- **Greenhouse Energy Conservation Strategies (Michigan State Univ. Ext.):**
<http://www.flor.hrt.msu.edu/assets/EnergyConservationforGreenhouses.pdf>
- **Greenhouse Unit Heaters: Types, Placement, and Efficiency (Univ. of Wisconsin Ext.):**
<http://learningstore.uwex.edu/Assets/pdfs/A3907-02.pdf>
- **Introduction to Greenhouse Efficiency and Energy Conservation (UVM Ext.):**
http://www.extension.org/pages/Introduction_to_Greenhouse_Efficiency_and_Energy_Conservation
- **Reducing Greenhouse Energy Consumption (Univ. of Wisconsin Ext.):**
<http://learningstore.uwex.edu/Assets/pdfs/A3907-01.pdf>
- **Shell Corn as a Fuel for Greenhouse Heat (UVM Ext.):**
http://www.extension.org/pages/Shell_Corn_as_a_Fuel_for_Greenhouse_Heat
- **Solar Greenhouses (ATTRA):** <http://attra.ncat.org/attra-pub/solar-gh.html>
- **Solar and Wind Energy for Greenhouses (Rutgers Univ.):**
<http://njveg.rutgers.edu/assets/pdfs/ajb/SolarAndWindEnergy.pdf>
- **Using Curtains to Reduce Greenhouse Heating and Cooling Costs (Univ. of Wisconsin Ext.):**
<http://learningstore.uwex.edu/Assets/pdfs/A3907-03.pdf>
- **Wood Heat for Greenhouses (UVM Ext.):** http://www.extension.org/pages/Wood_Heat_for_Greenhouses

IPM & BIOLOGICAL CONTROLS

- **Arthropod Pest Management in Greenhouses & Interiorscapes (Oklahoma State):**
<http://osufacts.okstate.edu/docushare/dsweb/Get/Document-6094/E-1011.pdf>
- **Biological Control of Insects & Other Pests of Greenhouse Crops (Univ. Wisconsin)**
<http://learningstore.uwex.edu/assets/pdfs/ncr581.pdf>
- **Disease & Arthropod Management in Greenhouse Floriculture (PennState):**
<http://pubs.cas.psu.edu/FreePubs/pdfs/agrs100.pdf>
- **Easy On Site Tests for Fungi & Viruses in Nurseries & Greenhouses:** <http://anrcatalog.ucdavis.edu/pdf/8002.pdf>
- **Factsheets on Pest Management (UMASS)**
<http://extension.umass.edu/floriculture/fact-sheets/pest-management>
- **Greenhouse IPM Manual with an Emphasis on Biocontrol (PENN State):**
<http://extension.psu.edu/ipm/program/greenhouse/greenhouse-manual>
- **Greenhouse Manager's Guide to IPM (UVM):**
<http://www.uvm.edu/~entlab/Greenhouse%20IPM/GreenhouseGuide.html>
- **Integrated Pest & Disease Management in Greenhouse Crops (Plant Protection Institute):**
<http://base.dnsgb.com.ua/files/book/Agriculture/Pesticides/Integrated-Pest-and-Disease-Management.pdf>
- **Integrated Pest Management for Bedding Plants: A Scouting & Pest Management Guide (Cornell)**
<http://www.nysipm.cornell.edu/publications/bpguide99/default.asp>
- **Integrated Pest Management for Greenhouse Crops (ATTRA)**
<https://attra.ncat.org/attra-pub/summaries/summary.php?pub=48>
- **Integrated Pest Management in Greenhouses & Herbaceous Nurseries (Univ. Missouri)**
<http://extension.missouri.edu/explorepdf/agguides/pests/ipm1026.pdf>
- **IPM & Biological Pest Control – Technical Manual (Applied Bio-nomics Ltd.)**
<http://www.appliedbio-nomics.com/technical-manual>
- **IPM Scouting & Monitoring for Pests in Commercial Greenhouses (Oklahoma State)**
<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-1281/HLA-6711web.pdf>
- **Pest Management Guidelines: Floriculture & Ornamental Nurseries (UC IPM)**
<http://www.ipm.ucdavis.edu/PDF/PMG/pmgfloriculture.pdf>

- **Quality Assurance of Biocontrol Products: Grower Guide 'Vineland':**
http://vinelandresearch.com/sites/default/files/grower_guide_pdf_final.pdf
- **Pest Management for Herb Bedding Plants Grown in the Greenhouse (UCONN&UMASS)**
<http://ipm.uconn.edu/documents/raw2/344/herbman1%20%282%29%20%281%29.pdf>
- **Resource Guide for Organic Insect & Disease Management (Cornell)**
<http://web.pppmb.cals.cornell.edu/resourceguide/>
- **Western Flower Thrips in Greenhouses: A Review of its Biological Control (UC Riverside):**
<http://www.biocontrol.ucr.edu/WFT.html>

PRINTED PUBLICATIONS

More titles available on our website

- **2014-2015 New England Greenhouse Floricultural Guide: A Management Guide for Insects, Diseases, Weeds, and Growth Regulators.** New England Greenhouse Conference.
- **Ball Culture Guide Encyclopedia of Seed Germination (2nd edition).** Nau, J. 1993. Ball Publishing, Batavia, IL.
- **Ball Field Guide to Diseases of Grnhse Ornamentals.** Daughtrey, M. & A. Chase. 1992. Ball Publishing, Batavia, IL.
- **Ball Identification Guide to Grnhse Pests & Beneficials.** Gill, S. & J. Sanderson. 1998. Ball Publishing, Batavia, IL.
- **Ball Perennial Manual: Propagation & Production.** Nau, J. 1996. Ball Publishing, Batavia, IL. ISBN: 1-883052-17-3.
- **Ball Pest & Disease Manual, 2nd ed.** Powell, C. & R. Lindquist. 1997. Ball Publishing, Batavia, IL. ISBN: 1-883052-10-6.
- **Ball Red Book (16th edition).** Ball, V. (ed.) 1998. Batavia, IL: Ball Publishing. ISBN: 1-883052-15-7
- **Bedding Plants IV.** Holcomb, E.J. (ed.). 1994. Ball Publishing, Batavia, IL. ISBN: 1-883052-05-x.
- **Bedding Plants: Prolonging Shelf Performance.** Armitage, S. 1993. Ball Publishing, Batavia, IL. ISBN: 0-9626796-6-6.
- **BioControl in Protected Culture.** Van Driesche, R. et al. 2004. Batavia, IL: Ball Publishing. ISBN: 1-883052-39-4.
- **Biological Pest Management for Interior Plantscapes (2nd edition).** Steiner, M.Y. & D.P. Elliott. 1987. Vegreville, Alberta: Alberta Environmental Center. ISBN: 0-919975-12-7.
- **Cornell Guide for the Integrated Management of Grnhse Floral Crops.** 2005. Cornell University Coop. Ext. Ithaca, NY.
- **Cut Flowers: Prolonging Freshness (2nd edition).** Sacalis, J.N. 1993. Ball Publishing, Batavia, IL. ISBN: 0-9626796-7-4.
- **Energy Conservation for Commercial Greenhouses.** Bartok, J. A. 2001. University of Connecticut, Northeast Regional Agricultural Engineering Service, Ithaca, NY. ISBN: 0-935817-74-3
- **Field Grown Cut Flowers.** Stevens, A. 1997. Avatar's World, Edgartown, WI.
- **Flowering Potted Plants.** Nell, T. 1993. Ball Publishing, Batavia, IL. ISBN: 0-9626796-8-2.
- **Focusing on Biological Control for the Green Industry.** 1997. University of Massachusetts.
- **Foliage Plants: Prolonging Quality.** Blessington, T. & P. Collins. 1993. Ball Publishing. Batavia, IL.
- **Geraniums IV.** White, J.W. (ed.). 1993. Ball Publishing, Batavia, IL. ISBN: 0-9626796-5-8.
- **GGSPRO Technical Reference Guide.** 2010. Griffin Grower Services. Griffin Greenhouse & Nursery Supplies.
- **Greenhouse: Advanced Technology for Protected Horticulture.** Hanan, J.J. 1998. CRC Press, New York, NY.
- **Greenhouse Engineering.** Aldrich, R. & J.W. Bartok. (eds.) 1994 University of Connecticut, Northeast Regional Agricultural Engineering Service, Ithaca, NY.
- **Greenhouse IPM with an Emphasis on Biocontrols.** 2005. PennState Integrated Pest Management Program.
- **Greenhouse Manager's Guide to Integrated Pest Management in Northern New England.** 2008. Parker, B.L., M. Skinner, M. Brownbridge & T. Doubleday. Entomology Research Laboratory, University of Vermont.

- **Greenhouse Operation & Management.** 5th Edition. 1998. Nelson, P.V. ISBN 0132439360
- **Grower Talks Series.** Grower Talks on Crop Culture (1991), Perennials (2002), Plugs II (1996), Retailing (1994). Ball Publishing, Batavia, IL.
- **Guide to Insects and Related Pests of Floricultural Crops in New England.** Gentile, A. & D. Scanlon. Revised by Smith, T. 1992. Mass. Coop. Extension System, Univ. of Mass., Amherst, MA.
- **Identification of Insects & Related Pests of Horticultural Plants: A Pictorial Guide.** Lindquist, R.K. & R.A. Cloyd. 2005. Ohio Florist Association, Columbus, Ohio.
- **Integrated Pest Management for Floriculture and Nurseries.** Dreistadt, S.H. 2001. University of California Statewide Integrated Pest Management Project. ISBN 1-879906-46-5.
- **Integrated Pest Management for Bedding Plants: A Scouting and Pest Management Guide.** C. Casey & C. Koplinka-Loehr. 1997. Cornell Coop. Ext. IPM No. 407.
- **IPM in Practice.** M.L. Flint. 2012. University of California Statewide IPM Program. ISBN-13: 978-1-60107-785-1
- **Lighting up Profits: Understanding Greenhouse Lighting.** Fisher, P. & E. Runkle. 2004. Meister Media Worldwide, Willoughby, OH.
- **Knowing and Recognizing the Biology of Glasshouse Pests and Their Natural Enemies.** Malais, M. & W.J. Ravensberg. 2003. Koppert Biological Systems. The Netherlands.
- **Mites of Greenhouses: Identification, Biology & Control.** 2003. Zhang, Z. ISBN 085199590X
- **Natural Enemies Handbook.** Flint, M. & S. Dreistadt. 1998. UC Division of Agriculture and Natural Resources and University of California Press, Berkeley, CA. ISBN: 1-879906-41-4.
- **New England Integrated Pest Management Scouting Guide for Poinsettias.** Coop. Ext. System, Univ. of CT.
- **New Guinea Impatiens: A Ball Guide.** Banner, W. & M. Klpmeyer. (eds.). 1995. Ball Publishing, Batavia, IL.
- **Plug & Transplant Production, A Grower's Guide.** Styler, R.C. & D.S. Koranski. 1997. Ball Publishing, Batavia, IL.
- **Poinsettia Manual.** Ecke, P., O.A. Matki & D.E. Hartley. (eds.) 1990. Paul Ecke Poinsettias, Encinitas, CA 92024.
- **Pests & Diseases of Herbaceous Perennials: The Biological Approach.** Gill, S., D.L. Clement & E. Dutky. 1999. Ball Publishing, Batavia, IL. ISBN 1-883052-20-3.
- **Pest Management for Herb Bedding Plants Grown in the Greenhouse.** Pundt, L. & T. Smith. N.E. Greenhouse Confr.
- **Plant Protection: Managing Greenhouse Insect & Mite Pests.** 2008. Cloyd, R.A. ISBN 1883052602
- **Side Effects Guide.** Koppert Biological Systems, the Netherlands.
- **The Organic Gardener's Handbook of Natural Pest and Disease Control.** Bradley, F.M., B.W. Ellis & D.L. Martin. 2009. Rodale Inc. ISBN-13:978-1-60529-542-8 (hardcover), ISBN-13:978-1-60529-677-7
- **Tips Series, OFA.** Tips on Growing and Marketing Hanging Baskets (1997), Bedding Plants, 3rd ed. (1994), Potted Chrysanthemums (1989), Poinsettias (1990), Specialty Potted Crops (1997), Vegetative Annuals (2003), Identification of Insects and Related Pests of Horticultural Pests (2005), Operating a Profitable Greenhouse Business (2005), Selecting Pest Management Strategies (1999), Selecting Disease Management Strategies (2002), the Use of Chemical Growth Regulators on Floriculture Crops (1992). OFA Serv. Inc., Columbus, OH.
- **Total Crop Management for Greenhouse Production with an Emphasis on Integrated Pest Management and Nutrient Management.** 2003. University of Maryland Cooperative Extension. Bulletin 359.
- **Total Plant Management of Herbaceous Perennials.** 2003. Univ. of Maryland Cooperative Extension. Bulletin 359.
- **Understanding pH Management for Container-Grown Crops.** Argo, W. & P. Fisher. Meister Publication.
- **Water, Media, and Nutrition for Greenhouse Crops.** Reed, D.W. (ed.). 1996. Ball Publishing, Batavia, IL.

Information, titles and trade names on these lists are for educational purposes. Any reference to companies, commercial products, or trade and brand names is for information only, and does not imply endorsement of, or discrimination against, any product or company by the University of Vermont (UVM) or its cooperators. UVM and its cooperators do not guarantee or warrant the standard of any products or references or imply approval of the product to the exclusion of others.