

“Eco-Friendly Pest Management”

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Suzanne Wainwright Evans · Buglady Consulting

Suppliers of Biological Control Agents and Supplies

Name	Address	Website	Phone	About
Becker Underwood	Ames, IA	www.beckerunderwood.com*	(800) 232-5907	Beneficial nematodes
Beneficial Insectary	Redding, CA	www.insectary.com	(800) 477-3715	Green lacewings and others
BioBest Biological Systems	Leamington ON, Canada	www.biobest.be*	(519) 322 -2178	Assortment of beneficial insects and mites
BioWorks, Inc.	Victor, NY	www.bioworksbiocontrol.com	(800) 977-9443	Beneficial nematodes, biological disease control
BioLogic Company	Willow Hill, Pa	www.biologicco.com	(717)349-2789	Beneficial nematodes
Buglady Consulting	Slatington, PA	www.bugladyconsulting.com	(610) 767-9221	Sticky cards, hand lenses and consulting
Koppert Biological Systems	Romulus, MI	www.koppert.com*	(800) 928-8827	Assortment of beneficial insects and mites
Sterling Insectary	Delano, CA	www.sterlingnursery.com*	(661) 725-1832	Predatory mites, <i>Cryptolaemus</i>
Syngenta BioLine	Oxnard, CA	www.syngenta-bioline.co.uk	(805) 986-8265	Assortment of beneficial insects and mites
The Bug Factory	Nanoose Bay BC, Canada	www.thebugfactory.ca	(250) 468-7912	Assortment of beneficial insects and mites

*Have chemical compatibility tables on website.



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Books

<p>“Garden Insects of North America: The Ultimate Guide to Backyard Bugs” Whitney Cranshaw.</p>	<p>This is the most comprehensive and user-friendly guide to the common insects and mites affecting yard and garden plants in North America. 656 pp.</p>
<p>“Identification of Insects and Related Pests of Horticultural Plants”</p>	<p>This new edition illustrates the life stages and crop damage of the major insect, mite, and related pest groups of greenhouse crops. More than 175 color photographs, 48 pages. O.F.A Services, INC. WWW.ofa.org or (614) 487-1117</p>
<p>“COINCIDE: The Orton System of Pest & Disease Management”</p>	<p>This book details a SIMPLE method for timing spraying to the insects most susceptible developmental stage. You can correlate your control method with an easily observable characteristic of common ornamental plant development. For example, spray for Euonymus scale when Northern Catalpa begins to bloom. http://www.laborofloveconservatory.com/ 630-668-8597 dennyjam@aol.com</p>
<p>“Natural Enemies Handbook: The Illustrated Guide to Biological Pest Control”</p>	<p>Mary Louise Flint and Steve H. Dreistadt 154 pp. Softcover University of California. (800) 994-8849 Publication # 3386 http://www.ipm.ucdavis.edu/IPMPROJECT/ADS/manual_naturalenemies.html</p>

Free Online Books

- “Greenhouse IPM with an Emphasis on Biocontrols” - <http://paipm.cas.psu.edu/63.htm>
- “Beneficials on farmland: Identification and management guidelines” - http://www.hgca.com/cms_publications.output/2/2/Publications/Publication/Beneficials%20on%20farmland%e2%80%93%20Identification%20and%20management%20guidelines.aspx?fn=show&pubcon=4538
- “Biological Control of insects and other pests of greenhouse crops” <http://learningstore.uwex.edu/pdf/ncr581.pdf>
- “Biological Control of Insects and Mites: An Introduction to Beneficial Natural Enemies and Their Use in Pest Management” <http://learningstore.uwex.edu/Biological-Control-of-Insects-and-Mites-An-Introduction-to-Beneficial-Natural-Enemies-and-Their-Use-in-Pest-Management-P1248C0.aspx>

Helpful Websites

- ANBP (Association of Natural Biological Producers) – www.anbp.org
- Biological Control: A Guide to Natural Enemies in North America - www.nysaes.cornell.edu/ent/biocontrol/
- Buglady Consulting - www.bugladyconsulting.com Articles on pest management
- BugWood Network - www.bugwood.org Extensive library of insect photos

Certifications

- USDA Organic - www.ams.usda.gov
- OMRI Organic Materials Review Institute www.omri.org
- Veriflora www.veriflora.com

Resources for Natural Enemies

- *Euonymus fortunei*, *Euphorbia polychrome*, *Solidago canadensis*, *Coreopsis verticillata*, *Trifolium repens*. From Eric J. Rebeka, , Clifford S. Sadofa and Lawrence M. Hanks. Influence of floral resource plants on control of an armored scale pest by the parasitoid *Encarsia citrine*.
- White clover (*Trifolium repens*), goldenrod (*Solidago canadensis* ‘Golden Baby’), cushion spurge (*Euphorbia epithymoides* syn. *E. polychroma*), and threadleaf coreopsis (*Coreopsis verticillata* ‘Moonbeam’. From NIFA National Research Initiative http://www.csrees.usda.gov/nea/pest/in_focus/bbpest_if_benefits.html

Insect Growth Regulators

- Juvenoids - Synthetically produced molecules that mimic the effects of the naturally occurring insect juvenile hormone
 - pyriproxyfen (Distance®)
 - kinoprene (Enstar® II)
 - fenoxycarb (Preclude®TR)
- Ecdysone antagonist – Disrupts molting process by interfering with the hormone ecdysone.
 - azadirachtin (Azatin)
 - azadirachtin (Ornazin)
 - azadirachtin (Molt-x)
- Chitin synthesis inhibitors - Synthetic molecules that inhibit the production of the exoskeleton element, chitin, following a molt
 - diflubenzuron (Dimilin®)
 - novaluron (Pedestal™)
 - buprofezin (Talus®) (mealybugs)
 - cyromazine (Citation®)
 - diflubenzuron (Adept™)
 - etoxazole (TetraSan) mite growth regulator

Insect Traps and Attractants

- Predalure – Beneficial insect attractant www.agbio-inc.com

Thank you for coming to my talk!
The Buglady