

Insects

Commercial Sources of Predators, Parasitoids and Pathogens

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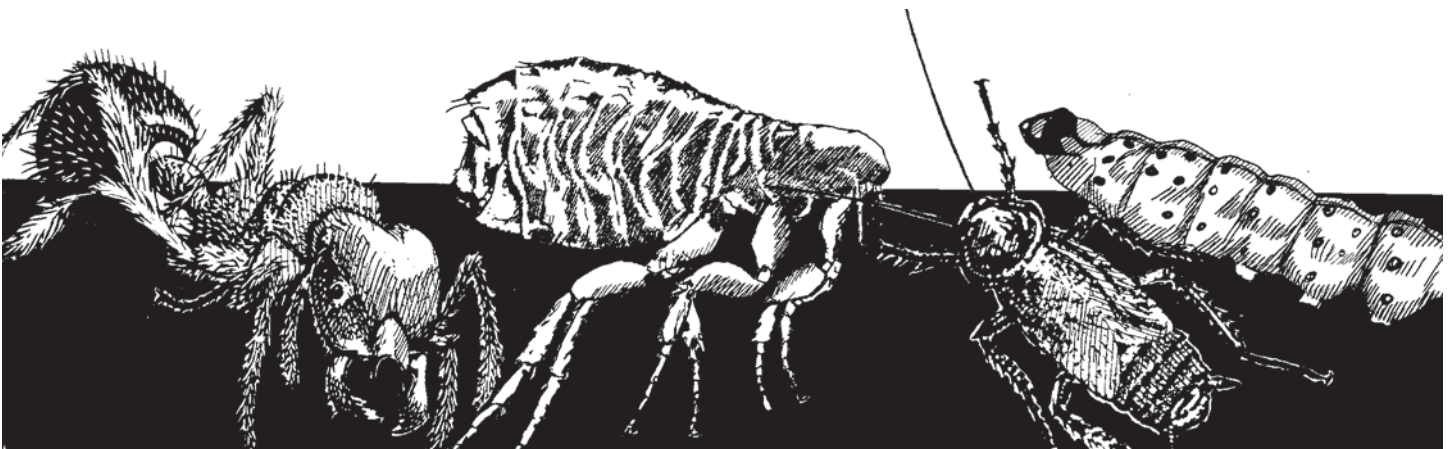
The Agricultural Extension Service receives numerous inquiries for information about where insect predators and parasitoids can be purchased. These insects are intended for use by both homeowners and commercial growers as biological control agents.

Biological control uses beneficial organisms rather than insecticides to reduce insect populations. Almost all insect groups include some beneficial members. The use of beneficial organisms is particularly important where chemical residues are undesirable. Beneficial organisms can be predators, such as ladybugs, lacewings and praying mantids that feed on other insects. Others, such as some species of nematodes and wasps, including *Trichogramma*, are parasitoids with an immature stage that

lives on or inside a host, which the parasitoid eventually kills. *Trichogramma* wasps lay their eggs into the eggs of caterpillars, where they develop by feeding inside the host's egg. An example of a beneficial pathogen is *Bacillus thuringiensis*, which is used as a microbial insecticide.

The Tennessee Department of Agriculture does not list the decollate snail, *Rumina decollata*, as a biological control organism suitable to be brought into Tennessee.

The Agricultural Extension Service is not in the business of advertising, selling or buying beneficial organisms. This list of sources was compiled as a response to public requests for information. This listing and general description of beneficial organisms are not recommendations and do not imply effectiveness in controlling any pest.



Commercially Available Biological Control Agents

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| 1 | <i>Aphidoletes aphidimyza</i> : A predatory midge that feeds on aphids. |
| 2 | <i>Anisopteromalus calandrea</i> : A wasp that is a parasitoid of weevil larvae in stored grain. |
| 3 | <i>Aphelinus abdominalis</i> : A parasitoid wasp of aphids. |
| 4 | Predatory ladybird beetles. |
| 5 | <i>Bracon hebetor</i> : A wasp that is a parasitoid of lepidopteran pests of stored grain such as the Indian meal moth and the Mediterranean flour moth. |
| 6 | <i>Bacillus thuringiensis</i> : Microbial insecticide for control of lepidopteran pests (butterfly and moth caterpillars). |
| 7 | <i>Macrocentrus ancylivorus</i> : Parasitoid wasp of oriental fruit moth. |
| 8 | Mealybug destroyer, <i>Cryptolaemus montrouzieri</i> : A predatory lady beetle that feeds on mealybugs. |
| 9 | <i>Diadegma insulare</i> : An ichneumonid parasitoid wasp of diamondback moth larvae. |
| 10 | <i>Diaeretiella rapae</i> : This wasp is a parasitoid of aphids such as the cabbage aphid and the green peach aphid. |
| 11 | <i>Aphidius matricariae</i> and/or <i>Aphidius colemani</i> and/or <i>Aphidius ervi</i> : Parasitic wasps of aphids. |
| 12 | <i>Eretmocerus eremicus</i> : (=californicus): A parasitoid wasp of whiteflies. |
| 13 | Fly parasites and predators: For fly control in poultry manure, etc. |
| 14 | Greenhouse whitefly parasitoid wasps (<i>Encarsia</i> sp). |
| 15 | <i>Goniozus legneri</i> and/or <i>Pentalitomastix</i> sp.: Navel orange worm parasitoids for almond and walnut crops. |
| 16 | Gnatrol or other brand names of <i>Bacillus thuringiensis</i> subsp. <i>israelensis</i> : Used as a soil drench for fungus gnat larvae in soil mixes. |
| 17 | <i>Neoseiulus</i> (=Amblyseius) <i>cucumeris</i> : A predatory mite of thrips. |
| 18 | <i>Bacillus thuringiensis</i> Berliner var. <i>israelensis</i> , Serotype H-14: For control of mosquitoes and black fly, Mosquito Dunks, Vectobac or other brands. |
| 19 | <i>Neoseiulus</i> (=Amblyseius) <i>barkeri</i> (= mckenziei): A predatory mite of thrips. |
| 20 | <i>Dacnusa sibirica</i> and/or <i>Diglyphus isaea</i> : Parasitoid wasps of leafminers on tomatoes and other plants. |
| 21 | Predatory lacewings, <i>Chrysoperla</i> (= <i>Chrysopa</i>) spp. |
| 22 | Predatory mites. |
| 23 | <i>Macrolophus caliginosus</i> : A predatory mirid bug that feeds on whiteflies. |
| 24 | Mosquito-fish, <i>Gambusia affinis</i> : Feed on the aquatic life stages of mosquitoes. |
| 25 | Parasitic nematodes. BioVector and Millenium are brand names. |
| 26 | <i>Iphiseius</i> (=Amblyseius) <i>degenerans</i> : A predatory mite of thrips. |
| 27 | <i>Orius</i> spp.: The predatory minute pirate bugs. |
| 28 | Pheromone and/or lures. |
| 29 | Praying mantids. |
| 30 | <i>Pyemotes tritici</i> : Fire mite, a mite that feeds on the eggs of stored-grain pests and ants (including imported fire ants). |
| 31 | NPV specific to <i>Spodoptera exigua</i> (beet armyworm): Spod-X is the brand name. |
| 32 | <i>Leptomastix dactylopii</i> : A wasp parasitoid of citrus mealybugs. |
| 33 | Scale parasitoids and predators. |
| 34 | <i>Bacillus thuringiensis</i> var. <i>san diego</i> : Used on Colorado potato beetle larvae and the larvae of elm leaf beetles. |
| 35 | Spined soldier bug: A predatory bug. |
| 36 | Traps. |
| 37 | <i>Thripobius semiluteus</i> : A wasp parasitoid of banded greenhouse thrips on citrus and avocados. |
| 38 | <i>Pediobius foveolatus</i> : A wasp parasitoid of the Mexican bean beetle. |
| 39 | <i>Delphastus catalinae</i> : (=pusillus): A predatory beetle that feeds on greenhouse and silverleaf whiteflies. |

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| 40 | <i>Trichogramma</i> spp., wasps: Egg parasitoids of caterpillars. |
| 41 | Warehouse pirate bug, <i>Xylocoris flavipes</i> : This predaceous bug feeds on the eggs and larvae of beetle and moth pests in stored grains. |
| 42 | <i>Hypoaspis</i> sp: A predatory mite that feeds on fungus gnat larvae and thrips pupae in the soil. |
| 43 | <i>Nosema locustae</i> : A biological insecticide for use on grasshoppers and some species of crickets. |
| 44 | <i>Cotesia marginiventris</i> and/or <i>Cotesia plutellae</i> : A braconid wasp parasitoid of several caterpillar pests. |
| 45 | <i>Atheta coriaria</i> : A rove beetle that preys on fungus gnats and shore flies. |
| 46 | Nuclear polyhedrosis virus (NPV) specific to <i>Heliothis/Helicoverpa</i> spp. (tobacco budworm and cotton bollworm): Gemstar is the brand name. |
| 47 | Microbial fungicide, <i>Gliricladium virens</i> : SoilGard 12 G is one brand name. For control of "damping off" and root rot pathogens of ornamental and food crop plants grown in greenhouses, nurseries and interiorscapes. |
| 48 | Microbial fungicide, <i>Trichoderma harzianum</i> strain T-22: Root shield granules or drench. For control of some root pathogens. |
| 49 | Other microbial fungicides or root inoculants. |
| 50 | Other parasitic wasps. |
| 51 | <i>Feltiella acarisuga</i> : A predaceous cecidomyiid midge that feeds on twospotted spider mites. |
| 52 | Nuclear polyhedrosis virus (NPV) specific to codling moth. Cyd-X is the brand name. |
| 53 | <i>Beauveria bassiana</i> : BotaniGard ES, Mycotrol O and Naturalis H&G are brand names of this biological (fungal) insecticide. |
| 54 | Spinosad: Monterey Garden Insect Spray, Conserve SC and SpinTor are brand names of this mixture of spinosyn A and D, a biological insecticide derived from the soil actinomycete, <i>saccharopolyspora spinosa</i> . |
| 55 | Granulovirus specific to codling moth. Virosoft Cp4 is the brand name. |
| 56 | <i>Carcinops pumilio</i> : A hister beetle predator of fly eggs for poultry manure fly control. |

Commercial Sources

A-1 Unique Insect Control

5504 Sperry Dr.
Citrus Heights, CA 95621
916-961-7945
Fax: 916-967-7082
4, 13, 14, 21, 22, 25, 29, 40

American Lake Doctors and Queen of the River Fish Co., Inc.

3810 N. 115th St.
Longmont, CO 80501
303-651-2514
800-422-2514
Fax: 303-651-2224
24 also grass carp/white amur for aquatic vegetation control

Applied Bio-Control

P.O. Box 118
Waterford, CA 95386
209-874-1862
Fax: 209-974-1808
e-mail: appbio@netfeed.com
4, 13, 15, 21, 22, 40

ARBICO Environmentals

P.O. Box 8910
Tucson, AZ 85738
800-827-2847
602-825-9785 (consultant)
1, 4, 5, 6, 8, 11, 12, 13, 14, 15, 16, 17, 18,
19, 21, 22, 24, 25, 27, 28, 29, 32, 33, 34,
35, 36, 37, 38, 39, 40, 42, 43

Beneficial Insectary

9664 Tanqueray Ct.
Redding, CA 96003
530-226-6300
800-477-3715
Fax: 530-226-6310
<http://www.insectary.com>
13, 15, 21, 40

Beneficial Insectary Canada

60 Taggart St.
Guelph, Ontario, Canada N1H6H8
519-763-8653
Fax: 519-763-9103
13, 21, 40

Better Yield Insects

44 Bristol Rd.
Narragansett, RI 02882
401-792-3416
800-662-6562
Fax: 401-792-8058
1, 4, 6, 8, 13, 14, 17, 18, 19, 21, 22, 25,
27, 29, 33, 36, 39, 40

Biocontrol Network

5116 Williamsburg Rd.
Brentwood, TN 37027
615-370-4301
1-800-441-2847
Fax: 615-370-0662
e-mail: ebugs@biconet.com
orders@biconet.com
<http://www.biocontrolnetwork.com>
<http://www.biconet.com>
1, 4, 6, 8, 11, 12, 13, 14, 16, 17, 18, 19,
20, 21, 22, 25, 27, 28, 29, 32, 33, 34, 36,
37, 38, 39, 40, 42, 43

Biofac Crop Care, Inc.

Beneficial Insects and More
P.O. Box 87
Mathis, TX 78368
800-233-4914
Fax: 512-547-9660
2, 4, 5, 13, 21, 22, 25, 29, 40, 41, 44

BioLogic

Springtown Rd.
P.O. Box 177
Willow Hill, PA 17271
(Phone/Fax) 717-349-2789
e-mail: aep_biologic@hotmail.com
25

Bug Factory

1636 East Island Highway
Nanoose Bay, B.C., Canada
V9P 9A5
250-468-7912
Fax: 250-468-9484
e-mail: info@thebugfactory.ca
office/orders/shipping/sales:
donnak@thebugfactory.ca
8, 17, 22, 25, 35, 42, 51

Buena Biosystems

P.O. Box 4008
Ventura, CA 93007
805-525-2525
4, 8, 13, 14, 21, 22, 40

Caltec Agri Marketing Services

P.O. Box 576155
Modesto, CA 95357
209-575-1295
Fax: 209-575-0366
1, 2, 4, 7, 8, 9, 13, 14, 15, 17, 20, 21, 22,
25, 27, 30, 33, 40, 41, 44

Canadian Insectaries

5 Alderwood Rd.
Winnipeg, Manitoba, Canada R2J2K7
204-257-3775
Fax: 204-256-2206
8, 13, 21, 32, 33

Certis USA

9145 Guilford Rd., Suite 175
Columbia, MD 21046
301-604-7340
Fax: 301-604-7015
<http://www.certisusa.com>
6, 25, 28, 31, 36, 46, 47

Fly Pro

2714 Fleming
Garden City, KS 67846
620-276-7770
Fax: 620-276-7770
<http://www.ggreene@gcnet.com>
13

Foothill Agricultural Research, Inc.

550 W. Foothill Pkwy.
Corona, CA 92882
909-371-0120 and
888-760-0120
Fax: 909-279-5150
33

Gardener's Supply Company

128 Intervale Rd.
Burlington, VT 05401
800-863-1700
4, 6, 16, 18, 25, 34, 36, 48

Gardens Alive!

5100 Schenley Place
Lawrenceburg, IN 47025
513-354-1482
4, 6, 13, 14, 16, 18, 21, 22, 25, 28, 34, 36,
40, 54

Great Lakes IPM

10220 Church Road, NE
Vestaburg, Michigan 48891
989-268-5693
989-268-5911
800-235-0285
Fax: 989-268-5311
email: glimp@nethawk.com
<http://www.greatlakesipm.com>
1, 5, 8, 11, 13, 17, 19, 20, 21, 22, 25, 28,
36, 39, 40, 44

Harmony Farm Supply & Nursery

P.O. Box 460
Graton, CA 95444
707-823-9125
707-823-1734
e-mail: info@harmonyfarm.com
<http://www.harmonyfarm.com>
1, 4, 6, 8, 11, 13, 14, 16, 17, 18, 21, 22,
25, 27, 28, 29, 33, 36, 40, 43, 47, 48,
49, 53, 54

Hydro-Gardens, Inc.

8765 Vollmer Rd.
P.O. Box 25845
Colorado Springs, CO 80936
800-634-6362 anytime phone/fax
Fax: 719-495-2266 normal business
hrs.
e-mail: hgi@hydro-gardens.com
1, 4, 6, 8, 11, 12, 14, 17, 19, 20, 21, 22,
25, 27, 29, 32, 33, 36, 39, 40, 42, 43

IFM

1422 North Miller Street, Number 8
Wenatchee, WA 98801
800-332-3179
509-662-3179
Fax: 509-662-6594
1, 4, 6, 8, 11, 13, 14, 16, 17, 18, 19, 21,
22, 25, 27, 28, 29, 32, 33, 36, 37, 39, 40,
42, 43, 47, 55

IPM Laboratories, Inc.

Main Street
Locke, NY 13092-0300
315-497-2063
Fax: 315-497-3129
carolg@ipmlabs.com
1, 3, 4, 8, 11, 12, 13, 14, 16, 17, 20, 21,
22, 25, 26, 27, 32, 33, 35, 36, 39, 40, 42,
45, 51, 56

Johnny's Selected Seeds

955 Benton Ave.
Winslow, ME 04901
207-861-3900
6, 34, 36

Kunafin "The Insectory"

Rt. 1 Box 39
Quemado, TX 78877
800-832-1113
Fax: 830-757-1468
<http://www.kunafin.com>
email: office@kunafin.com
4, 13, 21, 40

Mellinger's Inc.

2310 W. South Range Rd.
North Lima, Ohio 44452-9731
330-549-9861
Fax: 330-549-3716
4, 6, 13, 14, 18, 21, 22, 25, 29, 34, 36,
40, 43

M & R Durango, Inc.

P.O. Box 886
Bayfield, CO 81122
800-526-4075
303-259-3521
Fax: 303-259-3857
1, 3, 4, 8, 11, 12, 13, 14, 17, 19, 21, 22,
25, 26, 27, 29, 32, 33, 36, 40, 42, 43

Natural Pest Controls

8864 Little Creek Dr.
 Orangevale, CA 95662
 916-726-0855 (also fax)
 916-923-3353 (also fax)
 800-873-1252 (also fax)
<http://www.natpestco.com>
 4, 13, 14, 18, 20, 21, 22, 24, 25, 29, 33, 40

New Earth, Inc.

9810 Taylorsville Rd.
 Louisville, KY 40299
 800-462-5953
 502-261-0005
 1, 4, 6, 8, 11, 12, 14, 16, 17, 18, 21, 22,
 29, 34, 40

N-Viro Products Ltd.

610 Walnut Ave.
 Bohemia, NY 11716
 516-567-2628
 25

Orcon

Organic Control, Inc.
 5132 Venice Blvd.
 Los Angeles, CA 90019
 323-937-7444
 Fax: 323-937-0123
 4, 8, 13, 14, 21, 22, 25, 29, 33, 39, 40

Oxnard Pest Control Assn.

P.O. Box 1187
 Oxnard, CA 93032
 805-483-1024
 805-486-1032
 Fax: 805-487-6867
 8, 14, 22, 32, 33, 37, 40

Peaceful Valley Farm Supply

110 Spring Hill Dr. #2
 P.O. Box 2209
 Grass Valley, CA 95945
 general phone: 530-272-4769
 orders only: 888-784-1722
 Fax: 530-272-4794
 e-mail: contact@groworganic.com
<http://www.groworganic.com>
 1, 4, 6, 8, 13, 14, 16, 17, 18, 21, 22, 25,
 27, 28, 29, 33, 34, 36, 39, 40, 42, 43, 49,
 53, 55

Planet Natural

1612 Gold Avenue
 Bozeman, MT 59715
 800-289-6656
 Fax: 406-587-5891
<http://www.planetnatural.com>
 1, 4, 6, 8, 13, 14, 16, 17, 18, 21, 22, 25,
 27, 28, 29, 34, 36, 40, 42, 43, 49

Plant Sciences, Inc.

342 Green Valley Rd.
 Watsonville, CA 95076
 408-728-7771
 Fax: 408-728-4967
 1, 8, 11, 12, 14, 17, 20, 22, 26, 27, 32, 36,
 39, 40, 42

Richters

Goodwood, Ontario
 Canada LOC 1AO
 e-mail: inquiry@richters.com
<http://www.richters.com>
 905-640-6677
 905-640-6641
 4, 25, 36

Rincon-Vitova Insectaries Inc.

P.O. Box 1555
 Ventura, CA 93002
 800-248-2847 (bugs)
 805-643-5407
 Fax: 805-643-6267
 e-mail: bugnet@rinconvitova.com
 Web: <http://rinconvitova.com>
 1, 4, 8, 11, 12, 13, 14, 15, 16, 17, 18, 20,
 21, 22, 25, 26, 27, 29, 31, 32, 33, 35, 36,
 37, 38, 39, 40, 42, 43, 44, 46, 48, 49, 50,
 53

Syngenta Bioline, Inc.

P.O. Box 2430
 Oxnard, CA 93034-2430
 805-986-8265
 Fax: 805-986-8267
 email: Dcahn@SyngentaBioline.com
 11, 12, 14, 17, 20, 22, 27, 42

Sespe Creek Insectary, Inc.

PO Box 176
 Lindsay, CA 93247
 209-562-6464
 33

Spalding Laboratories, Inc.

760 Printz Road
 Arroyo Grande, CA 93420
 408-929-9577
 800-845-2847
 Fax: 805-489-0336
<http://www.spalding-labs.com>
 email: info@spalding-labs.com
 13

TerraLink Horticulture, Inc.

464 Riverside Road
 Abbotsford, B.C.V2S 7M1 Canada
 604-864-9044
 Fax: 604-864-8418
<http://www.terralink-horticulture.com>
 1, 3, 4, 6, 11, 12, 13, 14, 17, 20, 21, 22,
 25, 26, 27, 28, 36, 40, 42, 45, 51

Territorial Seed Company

P.O. Box 158
 20 Palmer Avenue
 Cottage Grove, OR 97424
 541-942-9547
 541-942-9881
<http://www.territorial-seed.com>
 4, 6, 8, 13, 16, 21, 25, 28, 29, 36, 40, 48

Tri-Cal Biosystems

P.O. Box 1327
 Hollister, CA 95024-1327
 408-637-0195
 1, 8, 11, 12, 13, 14, 17, 19, 21, 22, 25, 27,
 40, 42

Worm's Way

Garden Center & Home Brewing
 Supply
 7850 North Hwy. 37
 Bloomington, IN 47404
 800-274-9676
 Fax: 812-876-6478
<http://www.wormsway.com>
 1, 4, 6, 8, 14, 16, 21, 22, 25, 27, 29, 36, 40

A more complete listing of
 commercial sources is available in:

1. Hunter, C.D. 1997. Suppliers of Beneficial Organisms in North America. California Environmental Protection Agency, Department of Pesticide Regulation, Environmental Monitoring and Pest Management Branch, 1020 N. Street, Room 161, Sacramento, California 95814-5624.
2. <http://www.cdpr.ca.gov/docs/ipminov/bensuppl.htm>

Precautionary Statement

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you mix, apply store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label. Persons who do not obey the law will be subject to penalties.

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