



2020 Updated Product Tables

Guide for Purchasing and Using Commercial Natural Enemies in North America

<https://edis.ifas.ufl.edu/in849>

Table 1. Habitats of plant or animal pests in North America, typical pests, type of commercial natural enemies available to manage each pest, and species reference number.

Habitats of Plant or Animal Pests	Identified Pest	Commercial Natural Enemies	
		Type	No. (see Table 2)
Citrus	aphids	predatory insects	32, 34, 38-40, 42
	beetles (grubs)	parasitic nematodes	4, 9
	caterpillars	predatory insects	37-40, 42
		parasitic wasps	65, 66
	mealybugs	predatory insects	25, 27, 42
		parasitic wasps	54
	mites	predatory mites	20, 21
	scales	predatory insects	27
		parasitic wasps	45
	thrips	predatory mites	17
		predatory insects	34, 42
	psyllids	Parasitic wasps	57
	whiteflies	predatory insects	26, 34, 38-40, 42
Fruits, Vegetables and Tree Crops	aphids	predatory insects	32, 34, 35, 38-42
		parasitic wasps	44, 49-51
	beetles (grubs)	parasitic nematodes	2
		predatory insects	37
		parasitic wasps	56

	caterpillars	predatory insects	26, 34, 35, 38-40, 42
		parasitic wasps	65, 66, 69
	fungus gnats	predatory insects	13, 31
	leafminers	parasitic wasps	52, 55
	mealybugs	predatory insects	25, 27, 41, 42, 54
	mites	predatory mites	19-22, 24
		predatory insects	28, 33, 43
	scales	predatory insects	27, 29
	thrips	predatory mites	13, 16, 20
		predatory insects	31, 34, 38-40, 42
whiteflies	predatory mites	17	
	predatory insects	25, 34-40, 41	
	psyllids (tomato/potato psyllid)	parasitic wasps	57
	<i>Lygus</i> bugs (strawberries)	parasitic wasps	53
	root-knot nematode (greenhouse tomatoes)	parasitic nematodes	7
Ornamental Plants and Landscapes	aphids	predatory insects	32, 34, 35, 38-42
		parasitic wasps	44, 49-51
	beetles (grubs)	parasitic nematodes	1, 2, 4, 8, 12
		predatory insects	37-40
	caterpillars	parasitic wasps	65, 69
	fungus gnats	parasitic nematodes	6, 12
predatory mites		13, 14	

		predatory insects	27, 31
	leafminers	parasitic nematodes	6
		parasitic wasps	52, 55
	mealybugs	parasitic nematodes	1
		predatory insects	25, 76, 41, 42
		parasitic wasps	54
	mites	predatory mites	19-24
		predatory insects	28,33
	scales	predatory insects	27,29
	thrips	parasitic nematodes	6, 12
		predatory mites	13, 14, 16, 17, 20
		predatory insects	31, 34, 38-40, 42
	whiteflies	predatory mites	17
		predatory insects	26, 34, 38-42
Greenhouses and Interiorscapes	aphids	predatory insects	32, 35, 41, 42
		parasitic wasps	44, 46, 49-51
	caterpillars (eggs)	parasitic wasps	65
	fungus gnats	parasitic nematodes	5
		predatory mites	14
		predatory insects	31
	leafminers	parasitic wasps	52, 55
	mealybugs	predatory insects	25, 41, 42
parasitic wasps		54	

	mites	predatory mites	19-24
		predatory insects	28, 33
	scales	predatory insects	30
		parasitic wasps	46
	thrips	predatory mites	14, 18, 20
		predatory insects	31
	whiteflies	predatory insects	26, 35, 41, 42
		parasitic wasps	46-48
Turf and Lawns	caterpillars	parasitic nematodes	10
	beetles (grubs)	parasitic nematodes	10, 12
	mole crickets	parasitic nematodes	12
Animal Waste	filth flies	predatory insects	30
		parasitic wasps	58-64

Table 2. Parasitic nematodes. Numbered biological control products [family, genus and species], some (target pests) and source companies.

PARASITIC NEMATODES	
Heterorhabditidae	Source Company (Randomized)
<p>1. <i>Heterorhabditis bacteriophora</i> (cucumber, scarab, Japanese and flea beetles, thrips, white grubs, corn root worms, Colorado potato beetles, black vine weevils, and root mealybugs, on ornamentals, trees and shrubs)</p>	<p>BioWorks ▪ Crop Defenders ▪ Bioline AgroSciences ▪ Buglogical Control Systems ▪ Anatis Bioprotection ▪ Biobest Mexico S.A. de C.V. ▪ Green Methods ▪ BioBee ▪ Evergreen Growers Supply ▪ Rincon-Vitova ▪ Natural Enemies ▪ Sound Horticulture ▪ BASF ▪ ARBICO ▪ Beneficial Insectary ▪ Everwood Farm ▪ Natural Insect Control ▪ Sierra Biological ▪ Biobest ▪ Koppert ▪ Plant Products</p>
<p>2. <i>Heterorhabditis megidis</i> (vine weevil larvae on ornamentals, trees, shrubs and strawberries)</p>	<p>Global Horticultural</p>
<p>3. <i>Heterorhabditis indica</i></p>	<p>Rincon-Vitova ▪ ARBICO</p>
<p>4. <i>Heterorhabditis</i> spp. (mix) (vine weevil larvae and other soil borne beetle larvae on ornamentals, trees and shrubs)</p>	<p>Dynamic Ecosystems Crop Supply ▪ Natural Insect Control</p>
Steinernematidae	
<p>5 <i>Steinernema carpocapsae</i> (fungus gnats on potted plants)</p>	<p>Sierra Biological ▪ Natural Insect Control ▪ Natural Enemies ▪ Buglogical Control Systems ▪ BASF ▪ Koppert ▪ Rincon-Vitova ▪ Hydro-Gardens ▪ Everwood Farm ▪ Biobest ▪ Beneficial Insectary ▪ Green Methods ▪ Anatis Bioprotection ▪ Plant Products ▪ ARBICO ▪ Sound Horticulture ▪ Bioline AgroSciences ▪ BioBee ▪ Global Horticultural ▪ Crop Defenders ▪ Evergreen Growers Supply</p>
<p>6. <i>Steinernema feltiae</i> (thrips, fungus gnats and leafminers on ornamentals)</p>	<p>BASF ▪ Global Horticultural ▪ BioBee ▪ Green Methods ▪ Bioline AgroSciences ▪ Crop Defenders ▪ Buglogical Control Systems ▪</p>

	Sierra Biological ▪ Tip Top Bio-Control ▪ Bio-Control, S. A. ▪ Hydro-Gardens ▪ Natural Insect Control ▪ BioWorks ▪ Koppert ▪ ARBICO ▪ Rincon-Vitova ▪ Beneficial Insectary ▪ Biobest ▪ Anatis Bioprotection ▪ Orcon ▪ Biobest Mexico S.A. de C.V. ▪ Everwood Farm ▪ Sound Horticulture ▪ Plant Products ▪ Evergreen Growers Supply ▪ Natural Enemies
7. <i>Steinernema feltiae</i> MG-13 (root-knot nematodes on greenhouse tomatoes)	Sierra Biological
8. <i>Steinernema kraussei</i> (black vine weevil)	Biobest ▪ ARBICO ▪ Rincon-Vitova ▪ Evergreen Growers Supply ▪ Beneficial Insectary ▪ Sound Horticulture ▪ Global Horticultural ▪ BASF ▪ Boline AgroSciences ▪ Crop Defenders
9. <i>Steinernema riobrave</i> (mole crickets, root weevils on citrus)	BASF ▪ ARBICO ▪ Sierra Biological ▪ Sound Horticulture
10. <i>Steinernema</i> spp. (grubs, caterpillars, and fungus gnats)	Green Methods ▪ Natural Insect Control ▪ Bio Control, S.A. ▪ Dynamic Ecosystems Crop Supply ▪ Crop Defenders
Other Nematode Mixes	
11. <i>Heterorhabditis bacteriophora</i> and <i>Steinernema carpocapsae</i> (soil borne pests)	Sierra Biological ▪ Sound Horticulture ▪ Buglogical Control Systems ▪ Natural Insect Control
12. <i>Steinernema feltiae</i> and <i>Heterorhabditis</i> spp. mix (soil borne pests)	Buglogical Control Systems ▪ Hydro-Gardens ▪ Anatis Bioprotection ▪ Dynamic Ecosystems Crop Supply ▪ Natural Insect Control ▪ Sound Horticulture ▪ Crop Defenders

Table 3. Predatory mites. Numbered biological control products [family, genus and species], some (target pests) and source companies.

PREDATORY MITES	
Laelapidae	Source Company (Randomized)
13. <i>Hypoaspis (Gaeolaelaps) gillespiei</i> (fungus gnats, thrips)	Dynamic Ecosystems Crop Supply ▪ Crop Defenders ▪ Anatis Bioprotection ▪ Natural Insect Control ▪ Applied Bio-nomics ▪ WestGrow Biological Solutions
14. <i>Stratiolaelaps scimitus</i> (also called <i>Hypoaspis</i> or <i>Stratiolaelaps miles</i>) (fungus gnats and thrips on potted plants, bedding plants and seedlings)	BioBee ▪ WestGrow Biological Solutions ▪ Plant Products ▪ Sound Horticulture ▪ Evergreen Growers Supply ▪ GrowLiv Biologicals ▪ Natural Insect Control ▪ Beneficial Insectary ▪ Everwood Farm ▪ IPM Laboratories ▪ Natural Enemies ▪ Green Methods ▪ Global Horticultural ▪ Crop Defenders ▪ Dynamic Ecosystems Crop Supply ▪ Buglogical Control Systems ▪ Bioline AgroSciences ▪ Tip Top Bio-Control ▪ Anatis Bioprotection ▪ Rincon-Vitova ▪ Biobest ▪ Applied Bio-nomics ▪ Koppert ▪ ARBICO ▪ Bio Control, S.A.
Phytoseiidae	
15. <i>Amblyseius andersoni</i> (spider, russet, rust and broad mite)	Everwood Farm ▪ Green Methods ▪ Natural Enemies ▪ Global Horticultural ▪ Hydro-Gardens ▪ Rincon-Vitova ▪ Bioline AgroSciences ▪ ARBICO ▪ Biobest ▪ Tip Top Bio-Control ▪ Sound Horticulture ▪ Evergreen Growers Supply ▪ Crop Defenders ▪ Plant Products ▪ Beneficial Insectary ▪ Natural Insect Control ▪ IPM Laboratories ▪ BioBee
16. <i>Amblyseius degenerans</i> (also called <i>Iphiseius degenerans</i>) (thrips, broad and spider mites on peppers and ornamentals)	Beneficial Insectary ▪ Plant Products ▪ Bio Control, S.A. ▪ Natural Insect Control ▪ Biobest Mexico S.A. de C.V. ▪ Sound Horticulture ▪ Biobest ▪ Crop Defenders ▪ Global Horticultural
17. <i>Amblyseius swirskii</i> (whiteflies and thrips on vegetables, melons and ornamentals)	BioBee ▪ Evergreen Growers Supply ▪ Biobest ▪ Natural Insect Control ▪ ARBICO ▪ Green Methods ▪ Biobest Mexico S.A. de C.V. ▪ Crop

	<p>Defenders ▪ Rincon-Vitova ▪ Buglogical Control Systems ▪ Biotactics ▪ Tip Top Bio-Control ▪ Bioline AgroSciences ▪ Hydro-Gardens ▪ Beneficial Insectary ▪ Global Horticultural ▪ Koppert ▪ Bio Control, S.A. ▪ Everwood Farm ▪ GrowLiv Biologicals ▪ Sound Horticulture ▪ Dynamic Ecosystems Crop Supply ▪ Natural Enemies ▪ Plant Products</p>
<p>18. <i>Amblydromalus limonicus</i> (formerly called <i>Typhlodromalus limonicus</i>) (thrips and whiteflies in greenhouses)</p>	<p>Koppert ▪ Everwood Farm</p>
<p>19. <i>Neoseiulus californicus</i> (formerly called <i>Amblyseius californicus</i>) (two-spotted spider, broad and cyclamen mites on ornamentals, vegetables, fruit and potted plants)</p>	<p>Associates Insectary ▪ Beneficial Insectary ▪ Hydro-Gardens ▪ Koppert ▪ Buglogical Control Systems ▪ Crop Defenders ▪ Foothill Agricultural Research ▪ Bio Control, S.A. ▪ Plant Products ▪ Bioline AgroSciences ▪ ARBICO ▪ Biobest Mexico S.A. de C.V. ▪ Evergreen Growers Supply ▪ Sound Horticulture ▪ Biotactics ▪ Rincon-Vitova ▪ Everwood Farm ▪ Biobest ▪ BioBee ▪ Natural Insect Control ▪ Tip Top Bio-Control ▪ Green Methods ▪ IPM Laboratories ▪ Orcon ▪ Global Horticultural ▪ Natural Enemies ▪ WestGrow Biological Solutions ▪ Dynamic Ecosystems Crop Supply ▪ GrowLiv Biologicals</p>
<p>20. <i>Neoseiulus cucumeris</i> (formerly called <i>Amblyseius cucumeris</i>) (two-spotted spider mite and tarsonemid mites, and flower thrips on all crops)</p>	<p>Tip Top Bio-Control ▪ Bio Control, S.A. ▪ Koppert ▪ Rincon-Vitova ▪ Dynamic Ecosystems Crop Supply ▪ Biobest Mexico S.A. de C.V. ▪ Anatis Bioprotection ▪ Natural Insect Control ▪ Applied Bio-nomics ▪ Hydro-Gardens ▪ Beneficial Insectary ▪ Plant Products ▪ Sound Horticulture ▪ Crop Defenders ▪ Buglogical Control Systems ▪ IPM Laboratories ▪ Global Horticultural ▪ GrowLiv Biologicals ▪ Biobest ▪ Natural Enemies ▪ Everwood Farm ▪ ARBICO ▪ Evergreen Growers Supply ▪ BioBee ▪ Green Methods ▪ Bioline AgroSciences ▪ Orcon</p>
<p>21. <i>Neoseiulus fallacis</i> (formerly called <i>Amblyseius fallacis</i>) (two-spotted spider, European red, and citrus red mites on</p>	<p>Biotactics ▪ Beneficial Insectary ▪ Tip Top Bio-Control ▪ Everwood Farm ▪ Applied Bio-nomics ▪ Dynamic Ecosystems Crop Supply ▪ Anatis</p>

<p>many crops)</p>	<p>Bioprotection ▪ Rincon-Vitova ▪ Sound Horticulture ▪ ARBICO ▪ Green Methods ▪ Crop Defenders ▪ Natural Enemies ▪ Buglogical Control Systems ▪ Evergreen Growers Supply ▪ Natural Insect Control ▪ WestGrow Biological Solutions ▪ Plant Products</p>
<p>22. <i>Galendromus occidentalis</i> (spider, eriophyid and russet mites on ornamentals and vegetables in greenhouses and interiorscapes)</p>	<p>Foothill Agricultural Research ▪ ARBICO ▪ Evergreen Growers Supply ▪ Buglogical Control Systems ▪ Biotactics ▪ Hydro-Gardens ▪ Natural Insect Control ▪ Rincon-Vitova ▪ Sound Horticulture</p>
<p>23. <i>Mesoseiulus longipes</i> (also called <i>Phytoseiulus longipes</i>) (two spotted spider mites in greenhouses and interiorscapes)</p>	<p>Natural Insect Control ▪ Hydro-Gardens ▪ Evergreen Growers Supply ▪ Sound Horticulture ▪ Buglogical Control Systems ▪ IPM Laboratories ▪ ARBICO ▪ Rincon-Vitova ▪ Tip Top Bio-Control ▪ Biotactics</p>
<p>24. <i>Phytoseiulus persimilis</i> (spider mites on many crops)</p>	<p>Anatis Bioprotection ▪ Plant Products ▪ Green Methods ▪ Biotactics ▪ BioBee ▪ Koppert ▪ Biobest ▪ Rincon-Vitova ▪ Hydro-Gardens ▪ Orcon ▪ Applied Bio-nomics ▪ Buglogical Control Systems ▪ Natural Enemies ▪ Everwood Farm ▪ Crop Defenders ▪ Sound Horticulture ▪ Biobest Mexico S.A. de C.V. ▪ ARBICO ▪ WestGrow Biological Solutions ▪ Evergreen Growers Supply ▪ Bioline AgroSciences ▪ Bio Control, S.A. ▪ Beneficial Insectary ▪ Natural Insect Control ▪ Dynamic Ecosystems Crop Supply ▪ Global Horticultural ▪ GrowLiv Biologicals</p>

Table 4. Predatory insects. Numbered biological control products [family, genus and species], some (target pests) and source companies.

PREDATORY INSECTS	
Coleoptera	
Coccinellidae	Source Company (Randomized)
25. <i>Cryptolaemus montrouzieri</i> Mealybug destroyer (mealybugs on citrus, ornamentals, and vegetables, including greenhouses and interiorscapes)	Crop Defenders ▪ IPM Laboratories ▪ Evergreen Growers Supply ▪ Beneficial Insectary ▪ Associates Insectary ▪ Hydro-Gardens ▪ BioBee ▪ Global Horticultural ▪ Buglogical Control Systems ▪ Bio Control, S.A. ▪ Foothill Agricultural Research ▪ Sound Horticulture ▪ Biobest ▪ Everwood Farm ▪ Green Methods ▪ Koppert ▪ Plant Products ▪ Natural Insect Control ▪ Anatis Bioprotection ▪ Orcon ▪ Bionline AgroSciences ▪ Rincon-Vitova ▪ Biobest Mexico S.A. de C.V. ▪ Tip Top Bio-Control ▪ ARBICO
26. <i>Delphastus catalinae</i> (formerly called <i>Delphastus pusillus</i>) Whitefly predator (greenhouse, banded-winged, sweetpotato, woolly, azalea, hibiscus, cloudywinged, citrus and rhododendron whiteflies on ornamentals, vegetables, fruit, and citrus, including greenhouses and interiorscapes)	Orcon ▪ WestGrow Biological Solutions ▪ Crop Defenders ▪ Anatis Bioprotection ▪ Applied Bio-nomics ▪ Buglogical Control Systems ▪ Dynamic Ecosystems Crop Supply ▪ Natural Enemies ▪ Koppert ▪ Sound Horticulture ▪ ARBICO ▪ Natural Insect Control ▪ Evergreen Growers Supply ▪ Rincon-Vitova ▪ Plant Products ▪ IPM Laboratories ▪ Hydro-Gardens ▪ Beneficial Insectary ▪ BioBee
27. <i>Rhyzobius lophanthae</i> (also called <i>Lindorus lophanthae</i>) (hard and soft scales and mealybugs on ornamentals, vegetables, citrus and fruit)	Evergreen Growers Supply ▪ Rincon-Vitova ▪ Anatis Bioprotection ▪ Buglogical Control Systems ▪ IPM Laboratories ▪ ARBICO ▪ Natural Insect Control ▪ Foothill Agricultural Research
28. <i>Stethorus punctillum</i> (two-spotted spider mites)	Applied Bio-nomics ▪ BioBee ▪ Natural Insect Control ▪ Crop Defenders ▪ Sound Horticulture ▪ Dynamic Ecosystems Crop Supply ▪ ARBICO ▪ Anatis Bioprotection ▪ Buglogical Control Systems ▪ Natural Enemies ▪ Evergreen

	Growers Supply ▪ IPM Laboratories ▪ Rincon-Vitova
Cybocephalidae	
29. <i>Cybocephalus nipponicus</i> Scale picnic beetle (euonymus and San Jose scale on ornamentals, vegetables and fruit, including greenhouses and interiorscapes)	Crop Defenders
Histeridae	
30. <i>Carcinops pumilio</i> (flies in manure)	IPM Laboratories
Staphylinidae	
31. <i>Dalotia coriaria</i> (also called <i>Atheta coriaria</i>) (fungus gnats, shore flies and thrips in vegetables and ornamentals, including greenhouses and interiorscapes)	Plant Products ▪ Crop Defenders ▪ ARBICO ▪ Evergreen Growers Supply ▪ Tip Top Bio-Control ▪ Sound Horticulture ▪ Global Horticulture ▪ Natural Insect Control ▪ GrowLiv Biologicals ▪ Rincon-Vitova ▪ Biobest ▪ WestGrow Biological Solutions ▪ Natural Enemies ▪ Bioline AgroSciences ▪ Bio Control, S.A. ▪ Green Methods ▪ Applied Bio-nomics ▪ Dynamic Ecosystems Crop Supply ▪ Beneficial Insectary ▪ Buglogical Control Systems ▪ Anatis Bioprotection ▪ Everwood Farm ▪ BioBee
Diptera	
Cecidomyiidae	
32. <i>Aphidoletes aphidimyza</i> (aphids in citrus, ornamentals, fruits and vegetables, including greenhouses and interiorscapes)	Koppert ▪ Global Horticulture ▪ Anatis Bioprotection ▪ Rincon-Vitova ▪ Natural Enemies ▪ Applied Bio-nomics ▪ ARBICO ▪ BioBee ▪ Green Methods ▪ Buglogical Control Systems ▪ Bioline AgroSciences ▪ Natural Insect Control ▪ Beneficial Insectary ▪ Everwood Farm ▪ Biobest ▪ Evergreen Growers Supply ▪ WestGrow Biological Solutions ▪ Sound Horticulture ▪ Tip Top Bio-Control ▪ Biobest

	<p>Mexico S.A. de C.V. ▪ Orcon ▪ Bio Control, S.A. ▪ IPM Laboratories ▪ Hydro-Gardens ▪ Crop Defenders ▪ Dynamic Ecosystems Crop Supply ▪ Plant Products</p>
<p>33. <i>Feltiella acarisuga</i> (spider mites in ornamentals and vegetables, including greenhouses and interiorscapes)</p>	<p>Biobest Mexico S.A. de C.V. ▪ Beneficial Insectary ▪ Rincon-Vitova ▪ Global Horticultural ▪ Koppert ▪ ARBICO ▪ Hydro-Gardens ▪ Biobest ▪ Bio Control, S.A. ▪ Crop Defenders ▪ Sound Horticulture ▪ Plant Products ▪ Natural Enemies ▪ Everwood Farm ▪ Natural Insect Control ▪ Buglogical Control Systems</p>
<p>Hemiptera</p>	
<p>Anthocoridae</p>	
<p>34. <i>Orius insidiosus</i> Minute pirate bug (thrips, aphids and whiteflies on ornamentals, vegetables and citrus, including greenhouses and interiorscapes)</p>	<p>Sound Horticulture ▪ Bio Control, S.A. ▪ Dynamic Ecosystems Crop Supply ▪ Natural Enemies ▪ Natural Insect Control ▪ Bioline AgroSciences ▪ Tip Top Bio-Control ▪ Evergreen Growers Supply ▪ Everwood Farm ▪ Biobest ▪ Buglogical Control Systems ▪ Biobest Mexico S.A. de C.V. ▪ Rincon-Vitova ▪ IPM Laboratories ▪ Beneficial Insectary ▪ Koppert ▪ Crop Defenders ▪ GrowLiv Biologicals ▪ Anatis Bioprotection ▪ ARBICO ▪ Plant Products ▪ BioBee</p>
<p>Reduviidae</p>	
<p>35. <i>Zelus renardii</i> Assassin bug (generalist predator)</p>	<p>ARBICO</p>
<p>Miridae</p>	
<p>36. <i>Dicyphus hesperus</i> (greenhouse and tobacco whiteflies)</p>	<p>Bioline AgroSciences ▪ Biobest ▪ Sound Horticulture ▪ Crop Defenders ▪ Natural Insect Control ▪ ARBICO ▪ Anatis Bioprotection ▪</p>

	GrowLiv Biologicals ▪ BioBee
Pentatomidae	
37. <i>Podisus maculiventris</i> Spined soldier bug (Colorado potato beetles and caterpillars on ornamentals, vegetables and citrus)	ARBICO ▪ Bioline AgroSciences ▪ Sound Horticulture ▪ Rincon-Vitova ▪ Evergreen Growers Supply ▪ Buglogical Control Systems
Neuroptera	
Chrysopidae	
38. <i>Chrysoperla carnea</i> Green lacewing (aphids and other small soft bodied insects on ornamentals, citrus, fruit and vegetables)	Beneficial Insectary ▪ BioBee ▪ Plant Products ▪ Crop Defenders ▪ Natural Insect Control ▪ Biobest ▪ Bio Control, S.A. ▪ GrowLiv Biologicals ▪ Buglogical Control Systems ▪ Everwood Farm ▪ Anatis Bioprotection ▪ Orcon ▪ Koppert
39. <i>Chrysoperla rufilabris</i> Green lacewing (aphids and other small soft bodied insects on ornamentals, citrus, fruit and vegetables)	Evergreen Growers Supply ▪ Global Horticultural ▪ Natural Enemies ▪ Buglogical Control Systems ▪ Everwood Farm ▪ Plant Products ▪ Sound Horticulture ▪ IPM Laboratories ▪ BioBee ▪ Rincon-Vitova ▪ Natural Insect Control
40. <i>Chrysoperla spp.</i> Lacewing (aphids and any other small soft bodied insects on ornamentals, citrus, fruit and vegetables)	Biobest ▪ Crop Defenders ▪ ARBICO ▪ Bioline AgroSciences ▪ Kunafin ▪ Natural Insect Control
Hemerobiidae	
41. <i>Micromus variegatus</i> Brown lacewing (aphids, whiteflies and mealybugs on vegetables and ornamentals)	Everwood Farm ▪ Applied Bio-nomics ▪ Crop Defenders ▪ Natural Insect Control ▪ Anatis Bioprotection ▪ WestGrow Biological Solutions ▪ Evergreen Growers Supply ▪ Dynamic Ecosystems Crop Supply
42. <i>Sympherobius barberi</i> Brown lacewing (mealybugs, psyllids, thrips, mites, whiteflies, aphids, small caterpillars, leafhoppers, and	Foothill Agricultural Research

insect eggs on grapes, citrus, tree crops and greenhouse crops)	
Thysanoptera	
Thripidae	
43. <i>Scolothrips sexmaculatus</i> (spider mites on fruit trees)	Rincon-Vitova

Table 5. Parasitic wasps. Numbered biological control products [family, genus and species], some (target pests) and source companies.

PARASITIC WASPS	
Hymenoptera	
Aphelinidae	Source Company (Randomized)
44. <i>Aphelinus abdominalis</i> (potato aphids on ornamentals, fruits and vegetables, including greenhouses)	ARBICO ▪ Crop Defenders ▪ Biobest Mexico S.A. de C.V. ▪ Dynamic Ecosystems Crop Supply ▪ Rincon-Vitova ▪ Bio Control, S.A. ▪ Tip Top Bio-Control ▪ Koppert ▪ IPM Laboratories ▪ Global Horticultural ▪ Bioline AgroSciences ▪ Hydro-Gardens ▪ Sound Horticulture ▪ Plant Products ▪ Green Methods ▪ Natural Insect Control ▪ Beneficial Insectary ▪ Everwood Farm ▪ Biobest ▪ Buglogical Control Systems
45. <i>Aphytis melinus</i> (oleander, citrus scales, including greenhouses)	Hydro-Gardens ▪ Natural Insect Control ▪ IPM Laboratories ▪ Anatis Bioprotection ▪ Buglogical Control Systems ▪ Orcon ▪ Rincon-Vitova ▪ Tip Top Bio-Control ▪ Sound Horticulture ▪ Foothill Agricultural Research ▪ Plant Products ▪ Evergreen Growers Supply ▪ ARBICO ▪ Associates Insectary ▪ Green Methods

<p>46. <i>Encarsia formosa</i> (whiteflies in greenhouses)</p>	<p>Koppert ▪ Global Horticultural ▪ Biobest ▪ Natural Insect Control ▪ IPM Laboratories ▪ Natural Enemies ▪ Evergreen Growers Supply ▪ Crop Defenders ▪ Everwood Farm ▪ Anatis Bioprotection ▪ Orcon ▪ Bio Control, S.A. ▪ Buglogical Control Systems ▪ Rincon-Vitova ▪ Green Methods ▪ ARBICO ▪ Beneficial Insectary ▪ Hydro-Gardens ▪ Dynamic Ecosystems Crop Supply ▪ Applied Bio-nomics ▪ Sound Horticulture ▪ Bioline AgroSciences ▪ WestGrow Biological Solutions ▪ BioBee ▪ Plant Products</p>
<p>47. <i>Eretmocerus eremicus</i> (sweetpotato whiteflies, including greenhouses and interiorscapes)</p>	<p>BioBee ▪ Global Horticultural ▪ Beneficial Insectary ▪ Sound Horticulture ▪ ARBICO ▪ Green Methods ▪ Buglogical Control Systems ▪ Biobest Mexico S.A. de C.V. ▪ IPM Laboratories ▪ Biobest ▪ Bioline AgroSciences ▪ Natural Insect Control ▪ Koppert ▪ Rincon-Vitova ▪ Plant Products ▪ Bio Control, S.A. ▪ Evergreen Growers Supply ▪ Hydro-Gardens ▪ Crop Defenders ▪ Everwood Farm</p>
<p>48. <i>Eretmocerus mundus</i> (sweetpotato and tobacco whiteflies in greenhouses)</p>	<p>Bio Control, S.A. ▪ Global Horticultural</p>
<p>Aphidiidae</p>	
<p>49. <i>Aphidius colemani</i> (cotton, melon, green peach and other aphids on vegetables, fruit and ornamentals, including greenhouses and interiorscapes)</p>	<p>GrowLiv Biologicals ▪ Sound Horticulture ▪ Everwood Farm ▪ Global Horticultural ▪ Natural Insect Control ▪ Biobest Mexico S.A. de C.V. ▪ IPM Laboratories ▪ Bio Control, S.A. ▪ Anatis Bioprotection ▪ Green Methods ▪ Tip Top Bio-Control ▪ Beneficial Insectary ▪ BioBee ▪ Evergreen Growers Supply ▪ Rincon-Vitova ▪ Buglogical Control Systems ▪ ARBICO ▪ Koppert ▪ Hydro-Gardens ▪ Biobest ▪ Bioline AgroSciences ▪ Plant Products ▪ Crop Defenders ▪ Natural Enemies</p>
<p>50. <i>Aphidius ervi</i> (potato, pea, and green peach aphids on vegetables, fruit and ornamentals, including</p>	<p>Green Methods ▪ Crop Defenders ▪ Buglogical Control Systems ▪ Plant Products ▪ Biobest Mexico S.A. de C.V. ▪ Beneficial Insectary ▪</p>

greenhouses and interiorscapes)	Bioline AgroSciences ▪ Rincon-Vitova ▪ BioBee ▪ Tip Top Bio-Control ▪ Hydro-Gardens ▪ Global Horticultural ▪ ARBICO ▪ Biobest ▪ Everwood Farm ▪ Koppert ▪ Evergreen Growers Supply ▪ Natural Insect Control ▪ IPM Laboratories ▪ Bio Control, S.A. ▪ Natural Enemies ▪ Global Horticultural ▪ Dynamic Ecosystems Crop Supply
51. <i>Aphidius matricariae</i> (green peach aphids on vegetables, fruit and ornamentals, including greenhouses and interiorscapes)	Beneficial Insectary ▪ Crop Defenders ▪ Evergreen Growers Supply ▪ Sound Horticulture ▪ Rincon-Vitova ▪ Dynamic Ecosystems Crop Supply ▪ Biobest ▪ Natural Insect Control ▪ Koppert ▪ Buglogical Control Systems ▪ Plant Products ▪ BioBee
Braconidae	
52. <i>Dacnusa sibirica</i> (leafminers on vegetables, fruit and ornamentals, including greenhouse and interiorscapes)	Beneficial Insectary ▪ Natural Insect Control ▪ Biobest ▪ Bio Control, S.A. ▪ Evergreen Growers Supply ▪ Crop Defenders ▪ ARBICO ▪ Global Horticultural
53. <i>Peristenus relictus</i> <i>Peristenus (relictus</i> and <i>digoneutis)</i> (<i>Lygus</i> bugs in strawberries)	Rincon-Vitova
Encyrtidae	
54. <i>Anagyrus pseudococci</i>. (New name is <i>Anagyrus vladimiri</i>) (mealybugs on grapes and citrus)	Foothill Agricultural Research ▪ Rincon-Vitova ▪ Sound Horticulture ▪ ARBICO ▪ BioBee ▪ Associates Insectary ▪ Biobest ▪ Evergreen Growers Supply ▪ Koppert
Eulophidae	
55. <i>Diglyphus isaea</i> (vegetable, tomato, serpentine and chrysanthemum leafminers on vegetables, fruit and ornamentals, and in greenhouses and	Biobest ▪ Plant Products ▪ Global Horticultural ▪ Biobest Mexico S.A. de C.V. ▪ BioBee ▪ Bio Control, S.A. ▪ Tip Top Bio-Control ▪ Sound Horticulture ▪ Rincon-Vitova ▪ Natural Insect

interiorscapes)	Control ▪ Bioline AgroSciences ▪ Buglogical Control Systems ▪ Koppert ▪ Beneficial Insectary ▪ Evergreen Growers Supply ▪ Green Methods ▪ ARBICO ▪ Hydro-Gardens ▪ Crop Defenders
56. <i>Pediobius foveolatus</i> (Mexican bean beetle on vegetables)	Buglogical Control Systems ▪ Natural Insect Control ▪ Sound Horticulture ▪ Rincon-Vitova
57. <i>Tamarixia radiata</i>	Foothill Agricultural Research ▪ Associates Insectary
Pteromalidae	
58. <i>Muscidifurax raptor</i> (flies in garbage, manure and compost)	Spalding Laboratories ▪ Evergreen Growers Supply ▪ Rincon-Vitova ▪ Buglogical Control Systems ▪ Natural Insect Control ▪ Sound Horticulture ▪ IPM Laboratories ▪ Kunafin
59. <i>Muscidifurax raptorellus</i> (flies in garbage, manure and compost)	IPM Laboratories ▪ Buglogical Control Systems ▪ Spalding Laboratories ▪ Plant Products ▪ Kunafin ▪ Evergreen Growers Supply ▪ Natural Insect Control ▪ Rincon-Vitova ▪ Koppert
60. <i>Muscidifurax zaraptor</i> (flies in garbage, manure and compost)	Evergreen Growers Supply ▪ Buglogical Control Systems ▪ Rincon-Vitova ▪ Kunafin ▪ Plant Products
61. <i>Muscidifurax spp.</i> (flies in garbage, manure and compost)	Kunafin ▪ Natural Insect Control ▪ Tip Top Bio-Control ▪ Sound Horticulture ▪ Evergreen Growers Supply ▪ Everwood Farm
62. <i>Nasonia vitripennis</i> (flies in garbage, manure and compost)	Buglogical Control Systems
63. <i>Spalangia cameroni</i> (flies in garbage, manure and compost)	Spalding Laboratories ▪ Rincon-Vitova ▪ Buglogical Control Systems ▪ Plant Products ▪ Kunafin

64. <i>Spalangia endius</i> (flies in garbage, manure and compost)	Kunafin ▪ Spalding Laboratories
Trichogrammatidae	
65. <i>Trichogramma brassicae</i> (caterpillar eggs on vegetables, fruit, citrus and ornamentals, including greenhouse and interiorscapes)	Everwood Farm ▪ Tip Top Bio-Control ▪ Natural Insect Control ▪ Orcon ▪ Anatis Bioprotection ▪ Global Horticultural ▪ Beneficial Insectary ▪ IPM Laboratories ▪ Kunafin ▪ ARBICO ▪ Green Methods ▪ Sound Horticulture ▪ Plant Products ▪ Rincon-Vitova ▪ Biobest ▪ Evergreen Growers Supply ▪ Crop Defenders ▪ Buglogical Control Systems
66. <i>Trichogramma minutum</i> (caterpillar eggs on fruit trees in eastern U.S. orchards)	Buglogical Control Systems ▪ Green Methods ▪ Anatis Bioprotection ▪ Crop Defenders ▪ Rincon-Vitova ▪ Orcon ▪ Tip Top Bio-Control ▪ Sound Horticulture ▪ Evergreen Growers Supply ▪ ARBICO ▪ Natural Insect Control ▪ Plant Products ▪ Global Horticultural
67. <i>Trichogramma ostriniae</i> (European corn borer on corn and peppers, and grape berry moth on grapes)	Natural Insect Control ▪ Anatis Bioprotection ▪ Plant Products
68. <i>Trichogramma platneri</i> (caterpillar eggs in fruit trees in western U.S. orchards)	Sound Horticulture ▪ Crop Defenders ▪ ARBICO ▪ Evergreen Growers Supply ▪ Rincon-Vitova ▪ Buglogical Control Systems ▪ Everwood Farm ▪ Foothill Agricultural Research ▪ Natural Insect Control ▪ Tip Top Bio-Control
69. <i>Trichogramma pretiosum</i> (moth eggs on vegetables, field crops and ornamentals)	Plant Products ▪ Crop Defenders ▪ ARBICO ▪ Orcon ▪ Sound Horticulture ▪ Rincon-Vitova ▪ Natural Insect Control ▪ Buglogical Control Systems ▪ Everwood Farm ▪ Green Methods ▪ Bio Control, S.A. ▪ Tip Top Bio-Control
70. <i>Trichogramma species</i>	Plant Products ▪ Kunafin

For more information on **ANBP** member companies selling these beneficial species visit our website at: <http://anbp.org/index.php/members-products>

