

Pesticide Options for Important Insect, Mite, and Mollusk Pests of Commercial Flowers in Florida¹

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Effective arthropod pest management in commercial floral crops requires that pests be detected in a timely manner through systematic scouting and that appropriate control measures be applied as conditions warrant. Control measures may include economical combinations of cultural controls (such as disposal of crop residue, reducing unnecessary water in the production environment, selection of less affected varieties and species, etc.), physical controls (such as screen barriers, hot water treatments of certain planting stock, hand removal of pests, etc.), biological controls (such as release of beneficial parasites, predators, and pathogens to attack the pests) and chemical controls. This insect control guide is a summary of chemical control measures that are presently available to commercial flower producers in Florida and includes beneficial nematode and microbial insecticides that also are components of biological control.

The table in this document lists pesticides, most of whose labels provide for use on any “ornamental” or “flower” crop; however, some product labels permit use on named flower or ornamental crops only. Therefore, it is helpful to consult electronic versions of specimen labels that are usually available at the websites of CDMS (<http://www.cdms.net/manuf/default.asp>), C&P Press (<http://www.greenbook.net/>), or

the affiliated manufacturer. The table also indicates the permitted production site, either greenhouse (G) or field or shade house (F). Usually just a few or only one example of an active ingredient’s formulation is given; however, there may be other products as effective as those listed. The table is organized alphabetically by active ingredient within each of the following major pest groups:

- Aphids
- Armyworms
- Caterpillars
- Beetles (including weevils)
- Fungus gnats
- Leafhoppers
- Leafminers
- Mealybugs
- Mites
- Plant (Lygus) bugs & fleahoppers
- Shore flies
- Slugs & snails
- Thrips
- Whiteflies

The product label communicates the lawful use of the product and must be read, understood, and followed. The label contains important limitations that are not presented here,

1. This document is ENY-695, one of a series of the Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication December 2003. Revised November 2012. Visit the EDIS website at <http://edis.ifas.ufl.edu>.
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The use of trade names in this publication is solely for the purpose of providing specific information. UF/IFAS does not guarantee or warranty the products named, and references to them in this publication do not signify our approval to the exclusion of other products of suitable composition. Use pesticides safely. Read and follow directions on the manufacturer’s label.

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and it remains the pesticide applicator's legal responsibility to read and follow all label instructions that accompany the pesticide container. When using a pesticide for the first time, it is important to apply the product first to a small portion of the crop and wait to observe possible detrimental effects, such as leaf distortion and plant stunting.

Many pesticides decompose in the spray tank when mixed with water above pH 7. Growers should test the pH of their water and, when above 7, should add a buffering solution to maintain pH between 6.5 and 7.

This summary is only a guide to aid in selection of pesticides. Care has been given to provide accurate and up-to-date information, but it is possible that, through label changes, etc., improper uses may be indicated. In all cases it is the responsibility of the applicator to read, understand, and comply with the label that accompanies each pesticide container.

As an additional precaution, the telephone number and address of the nearest county poison control center must be kept in a convenient location in case of an accidental poisoning; also, copies of all pesticide labels on the production premises must be available. In the event of a poisoning, the label of the pesticide involved should accompany the victim to the poison control center or hospital.

Products permitted for insect and mite management in specified commercial flowering plants in Florida..

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
Aphids		
abamectin (suppression)	F, G	Avid 0.15EC
acephate	F, G	Orthene Turf, Tree & Ornamental WSP
acephate & fenpropathrin	G	Tame/Orthene TR
acetamiprid	F, G	TriStar 30SG
azadirachtin	F, G	Azahar, Azatin XL
<i>Beauveria bassiana</i>	F, G	BotaniGard ES, Mycotrol O
bifenazate & abamectin (suppression)	F, G	Sirocco
bifenthrin	F, G	Attain TR, Talstar Select
capsaicin & other capsaicinoids	F, G	Hot Pepper Wax
chlorpyrifos	F, G	Dursban 50W
chlorpyrifos & cyfluthrin	G	Duraplex TR
cyfluthrin	F, G	Decathlon 20 WP
cyfluthrin & imidacloprid	F	Discus Nursery
deltamethrin	F	DeltaGard GC 5SC
diazinon	F	Diazinon 50W
dimethoate	F	Dimate 4E
dinotefuran (suppression)	F, G	Safari 20SG
fenoxycarb	G	Preclude TR
fenpropathrin	F, G	Tame 2.4EC
flonicamid	F, G	Aria
imidacloprid	F, G	Marathon II, 1%G, 60 WP
<i>Isaria fumosorosea</i> (formerly <i>Paecilomyces fumosoroseus</i>)	F, G	Preferal
lambda-cyhalothrin	F, G	Scimitar GC
malathion	F	Malathion 5 EC
methiocarb	F, G	Mesuro 75-W
naled	F, G	Dibrom 8 Emulsive
neem oil	F, G	Triact 70
oil (mineral, paraffinic, petroleum, vegetable, etc.)	F, G	Ultra-Fine Oil
oxydemeton-methyl	F	MSR Spray Concentrate
permethrin	F, G	Perm-UP 3.2 EC
potassium salts of fatty acids (insecticidal soap)	F, G	M-Pede, Des-X
potassium silicate (suppression)	F	Sil-Matrix
pymetrozine	F, G	Endeavor
pyrethrins	F, G	PyGanic EC 5.0II
pyrethrins & piperonyl butoxide	F, G	Pyreth-It Formula 2

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
pyrethrins, piperonyl butoxide & silicon dioxide	F	Diatect II Multipurpose
pyrethrins, rotenone & associated resins	F, G	Pyrellin E.C.
pyriproxyfen (suppression)	F, G	Distance Insect Growth Regulator
rosemary & peppermint oils	F, G	Ecotrol EC
s-kinoprene	F, G	Enstar II
sorbitol octanoate	F, G	SorbiShield 90
spirotetramat	F, G	Kontos
sucrose octanoate	F, G	SucraShield
<i>tau</i> -fluvalinate	F, G	Mavrik Aquaflow
thiamethoxam	F, G	Flagship 25WG
tolfenpyrad	G	Hachi-Hachi
Armyworms (see also caterpillars)		
acetamiprid	F, G	TriStar 30SG
azadirachtin	F, G	Azahar, Azatin XL
<i>Bacillus thuringiensis aizawai</i>	F, G	Jackpot WP, XenTari Dry Flowable
<i>Bacillus thuringiensis kurstaki</i>	F, G	DiPel Pro DF, Javelin WG
<i>Beauveria bassiana</i>	F, G	Naturalis L
bifenthrin	F, G	Attain TR, Talstar Select
capsaicin & other capsaicinoids	F, G	Hot Pepper Wax
carbaryl	F	Sevin 80 WSP
chlorpyrifos	F, G	Dursban 50W
<i>Chromobacterium subtsugae</i>	F, G	MBI-203 EP
cyfluthrin	F, G	Decathlon 20 WP
cyfluthrin & imidacloprid	F	Discus Nursery
deltamethrin	F	DeltaGard GC 5SC
diflubenzuron	F, G	Adept, Dimilin SC Insect Growth Regulator
fenpropathrin	F, G	Tame 2.4EC
lambda-cyhalothrin	F, G	Scimitar GC
naled	F	Dibrom 8 Emulsive
novaluron	F, G	Pedestal
permethrin	F, G	Perm-UP 3.2 EC
Polyhedral occlusion bodies (OBs) of the nuclear polyhedrosis virus of <i>Spodoptera exigua</i>	F, G	Spod-X LC
pyrethrins	F, G	PyGanic EC 5.0II
pyrethrins & piperonyl butoxide	F, G	Pyreth-It Formula 2

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
pyrethrins, rotenone & associated resins	F, G	Pyrellin E.C.
spinosad	F, G	Conserve SC
<i>Steinernema</i> spp.	F, G	Millenium
<i>tau</i> -fluvalinate	F, G	Mavrik Aquaflow
(Z,E)-9,12-Tetradecadien-1-yl acetate & (Z)-11-Hexadecen-1-yl acetate	F, G	CheckMate BAW-F
Beetles (including weevils)		
acephate	F	Orthene Turf, Tree & Ornamental WSP
acetamiprid	F, G	TriStar 30SG
azadirachtin	F, G	Azahar, Azatin XL
<i>Beauveria bassiana</i>	F, G	BotaniGard ES, Mycotrol O
bifenthrin	F, G	Attain TR Micro, Talstar Select
carbaryl	F	Sevin 80 WSP
carbofuran	F	Furadan 4F
chlorpyrifos	F, G	DuraGuard ME
<i>Chromobacterium subtsugae</i>	F, G	MBI-203 EP
cryolite	F	Kryocide
cyfluthrin	F, G	Decathlon 20 WP
cyfluthrin & imidacloprid	F	Discus Nursery
deltamethrin	F	DeltaGard GC 5SC
diazinon	F	Diazinon 50W
diflubenzuron	F	Dimilin 25W Insect Growth Regulator
dimethoate	F	Dimate 4E
dinotefuran	F, G	Safari 20SG
fenoxycarb	G	Preclude TR
fenpropathrin	F, G	Tame 2.4EC
<i>Heterorhabditis bacteriophora</i>	F, G	Nemasys G
imidacloprid	F, G	Marathon II, 1%G, 60 WP
<i>Isaria fumosorosea</i> (formerly <i>Paecilomyces fumosoroseus</i>)	F, G	Preferal
kaolin (suppression)	F, G	Surround WP
lambda-cyhalothrin	F, G	Scimitar GC
malathion	F	Malathion 5 EC
naled	F	Dibrom 8 Emulsive
oil (mineral, paraffinic, petroleum, vegetable, etc.)	F	Ultra-Fine Oil
oxydemeton-methyl	F	MSR Spray Concentrate
permethrin	F, G	Perm-UP 3.2 EC
phosmet	F	Imidan 70-W
potassium salts of fatty acids (insecticidal soap)	F, G	M-Pede

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
pyrethrins	F, G	PyGanic EC 5.0II
pyrethrins & piperonyl butoxide	F, G	Pyreth-It Formula 2
pyrethrins, piperonyl butoxide & silicon dioxide	F	Diatect II Multipurpose
pyrethrins, rotenone & associated resins	F, G	Pyrellin E.C.
rosemary oil & peppermint oil	F, G	Ecotrol EC
spinosad	F, G	Conserve SC
<i>tau</i> -fluvalinate	F, G	Mavrik Aquaflow
thiamethoxam	F, G	Flagship 25WG
Caterpillars (see also armyworms)		
acephate	G	1300 Orthene TR
acephate & fenpropathrin	G	Tame/Orthene TR
acetamiprid	F, G	TriStar 30SG
azadirachtin	F, G	Azahar, Azatin XL
<i>Bacillus thuringiensis aizawai</i>	F, G	Jackpot WP, XenTari Dry Flowable
<i>Bacillus thuringiensis kurstaki</i>	F, G	DiPel Pro DF, Javelin WG
<i>Beauveria bassiana</i>	F, G	Mycotrol O
bifenthrin	F, G	Attain TR, Talstar Select
carbaryl	F	Sevin 80 WSP
chlorfenapyr	G	Pylon Miticide
chlorpyrifos	F, G	DuraGuard ME
chlorpyrifos & cyfluthrin	G	Duraplex TR
<i>Chromobacterium subtsugae</i>	F, G	MBI-203 EP
cryolite	F	Kryocide
cyfluthrin	F, G	Decathlon 20 WP
diazinon	F	Diazinon 50W
dimethoate	F	Dimate 4E
fenoxycarb	G	Preclude TR
imidacloprid	F, G	Marathon II, 1%G, 60 WP
<i>Isaria fumosorosea</i> (formerly <i>Paecilomyces fumosoroseus</i>)	F, G	Preferal
lambda-cyhalothrin	F, G	Scimitar GC
malathion	F	Malathion 5 EC
naled	G	Dibrom 8 Emulsive
oil (mineral, paraffinic, petroleum, vegetable, etc.)	F	Ultra-Fine Oil
oxydemeton-methyl	F	MSR Spray Conc.
phosmet	F	Imidan 70-W

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
potassium salts of fatty acids (insecticidal soap)	F, G	M-Pede, Des-X
permethrin	F, G	Perm-UP 3.2 EC
pyrethrins	F, G	PyGanic EC 5.0II
pyrethrins & piperonyl butoxide	G	Pyreth-It Formula 2
pyrethrins, piperonyl butoxide & silicon dioxide	F	Diatect II Multipurpose
pyrethrins, rotenone & associated resins	F, G	Pyrellin E.C.
pyridalyl	G	Overture 35 WP
rosemary oil & peppermint oil	F, G	Ecotrol EC
sorbitol octanoate	F, G	SorbiShield 90
spinosad	F, G	Conserve SC
<i>Steinernema carpocapsae</i>	F, G	Millenium
sucrose octanoate	F, G	SucraShield
<i>tau</i> -fluvalinate	F, G	Mavrik Aquaflow
tolfenpyrad	G	Hachi-Hachi
Fungus gnats		
acephate	G	1300 Orthene TR
acephate & fenpropathrin	G	Tame/Orthene TR
acetamidprid	F, G	TriStar 30SG
azadirachtin	F, G	Azahar, Azatin XL
<i>Bacillus thuringiensis israelensis</i>	F, G	Gnatrol
<i>Beauveria bassiana</i>	F, G	Naturalis L
bifenthrin	F, G	Attain TR, Talstar Select
chlorfenapyr	G	Pylon Miticide
chlorpyrifos	F, G	DuraGuard ME
chlorpyrifos & cyfluthrin	G	Duraplex TR
cyfluthrin	F, G	Decathlon 20 WP
cyfluthrin & imidacloprid	F	Discus Nursery
cyromazine	F, G	Citation
deltamethrin	F	DeltaGard GC 5SC
diflubenzuron	F, G	Adept Insect Growth Regulator
dinotefuran	F, G	Safari 20SG
imidacloprid	F, G	Marathon II, 1%G, 60 WP
oil (mineral, paraffinic, petroleum, vegetable, etc.)	G	Ultra-Fine Oil
permethrin	F, G	Perm-UP 3.2 EC
pyrethrins	F, G	PyGanic EC 5.0II
pyrethrins & piperonyl butoxide	F, G	Pyreth-It Formula 2
pyriproxyfen	F, G	Distance Insect Growth Regulator
s-kinoprene	F, G	Enstar II

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
<i>Steinernema feltiae</i>	G	Nemasys
thiamethoxam	F, G	Flagship 25WG
Leafhoppers		
acephate	F	Orthene Turf, Tree & Ornamental WSP
acetamidprid	F, G	TriStar 30SG
azadirachtin	F, G	Azahar, Azatin XL
<i>Beauveria bassiana</i>	F, G	BotaniGard ES, Mycotrol O
bifenthrin	F, G	Menace GC 7.9% Flowable, Talstar Select
buprofezin	F, G	Talus 40SC, 70DF
carbaryl	F	Sevin 80 WSP
chlorpyrifos	F, G	DuraGuard ME
cyfluthrin	F, G	Decathlon 20 WP
cyfluthrin & imidacloprid	F	Discus Nursery
deltamethrin	F	DeltaGard GC 5SC
diazinon	F	Diazinon 50W
dimethoate	F	Dimate 4E
dinotefuran	F, G	Safari 20SG
fenpropathrin	F, G	Tame 2.4EC
flonicamid	F, G	Aria
imidacloprid	F, G	Marathon II, 1%G, 60 WP
kaolin (suppression)	F, G	Surround WP
lambda-cyhalothrin	F, G	Scimitar GC
malathion	F	Malathion 5 EC
neem oil	F, G	Triact 70
permethrin	F, G	Perm-UP 3.2 EC
phosmet	F	Imidan 70-W
potassium salts of fatty acids (insecticidal soap)	F, G	M-Pede, Des-X
pyrethrins	F, G	PyGanic EC 5.0II
pyrethrins & piperonyl butoxide	F, G	Pyreth-It Formula 2
pyrethrins, piperonyl butoxide & silicon dioxide	F	Diatect II Multipurpose
pyrethrins, rotenone & associated resins	F, G	Pyrellin E.C.
rosemary oil & peppermint oil	F, G	Ecotrol EC
sorbitol octanoate	F, G	SorbiShield 90
spirotetramat	F, G	Kontos
sucrose octanoate	F, G	SucraShield
<i>tau</i> -fluvalinate	F, G	Mavrik Aquaflow
thiamethoxam	F, G	Flagship 25WG
tolfenpyrad	G	Hachi-Hachi

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
Leafminers		
abamectin	F, G	Avid 0.15EC ³
acephate ⁴	F, G	1300 Orthene TR, Orthene Turf, Tree & Ornamental WSP
acephate ⁴ & fenpropathrin ⁴	G	Tame/Orthene TR
acetamiprid	F, G	TriStar 30SG
azadirachtin	F, G	Azahar, Azatin XL
bifenazate & abamectin	F, G	Sirocco ⁵
bifenthrin ⁴	F, G	Menace GC 7.9% Flowable, Talstar Select
carbaryl	F	Sevin 80 WSP ⁶
chlorpyrifos ⁴	F, G	DuraGuard ME
cyfluthrin & imidacloprid	F	Discus Nursery
cyromazine	F, G	Citation ⁷
deltamethrin ⁴	F	DeltaGard GC 5SC
diazinon ⁴	F	Diazinon 50W ⁷
diflubenzuron	F, G	Adept ⁸ , Dimilin SC Insect Growth Regulator ⁸
dimethoate ⁴	F	Dimate 4E
dinotefuran	F, G	Safari 20SG
fenoxycarb	G	Preclude TR
fenpropathrin ⁴	F, G	Tame 2.4EC
imidacloprid	F, G	Marathon II, 1%G, 60 WP
<i>Isaria fumosorosea</i> (formerly <i>Paecilomyces fumosoroseus</i>)	F, G	Preferal ⁹
Lambda-cyhalothrin ⁴	F, G	Scimitar GC
malathion ⁴	F	Malathion 5 EC ¹⁰
naled ⁴	F	Dibrom 8 Emulsive
novaluron (suppression)	F, G	Pedestal
oil (mineral, paraffinic, petroleum, vegetable, etc.)	F, G	Ultra-Fine Oil
oxydemeton-methyl	F	MSR Spray Concentrate
permethrin ⁴	F, G	Perm-UP 3.2 EC
phosmet ⁴	F	Imidan 70-W ¹¹
potassium salts of fatty acids (insecticidal soap)	F, G	M-Pede ⁷
pyrethrins, piperonyl butoxide & silicon dioxide	F	Diatect II Multipurpose
pyrethrins, rotenone & associated resins	F, G	Pyrellin E.C.
pyriproxyfen	F, G	Distance Insect Growth Regulator ¹²
rosemary oil & peppermint oil	F, G	Ecotrol EC
spinosad	F, G	Conserve SC ⁷
thiamethoxam	F, G	Flagship 25WG

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
Mealybugs		
acephate	G	Orthene Turf, Tree & Ornamental WSP
acephate & fenpropathrin	G	Tame/Orthene TR
acetamiprid	F, G	TriStar 30SG
azadirachtin	F, G	Azahar, Azatin XL
<i>Beauveria bassiana</i>	F, G	BotaniGard ES, Mycotrol O
bifenthrin	F, G	Attain TR, Talstar Select
buprofezin	F, G	Talus 40SC, 70DF
carbaryl	F	Sevin 80 WSP
chlorpyrifos	F, G	DuraGuard ME
chlorpyrifos & cyfluthrin	G	Duraplex TR
cyfluthrin	F, G	Decathlon 20 WP
cyfluthrin & imidacloprid	F	Discus Nursery
deltamethrin	F	DeltaGard GC 5SC
dimethoate	F	Dimate 4E
dinotefuran	F, G	Safari 20SG
fenoxycarb	G	Preclude TR
fenpropathrin	F, G	Tame 2.4EC
fenpyroximate (suppression)	F, G	Akari 5SC
flonicamid	F, G	Aria
imidacloprid	F, G	Marathon II, 1%G, 60 WP
<i>Isaria fumosorosea</i> (formerly <i>Paecilomyces fumosoroseus</i>)	F, G	Preferal
lambda-cyhalothrin	F, G	Scimitar GC
malathion	F	Malathion 5 EC
naled	G	Dibrom 8 Emulsive
neem oil	F, G	Triact 70
oil (mineral, paraffinic, petroleum, vegetable, etc.)	F, G	Ultra-Fine Oil
permethrin	F, G	Perm-UP 3.2 EC
phosmet	F	Imidan 70-W
potassium salts of fatty acids (insecticidal soap)	F, G	M-Pede, Des-X
pyrethrins	F, G	PyGanic EC 5.0II
pyrethrins & piperonyl butoxide	F, G	Pyreth-It Formula 2
pyrethrins, piperonyl butoxide & silicon dioxide	F	Diatect II Multipurpose
pyrethrins, rotenone & associated resins	F, G	Pyrellin E.C.
pyriproxyfen (suppression)	F, G	Distance Insect Growth Regulator
rosemary oil & peppermint oil	F, G	Ecotrol EC
s-kinoprene	F, G	Enstar II

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
sorbitol octanoate	F, G	SorbiShield 90
spirotetramat	F, G	Kontos
sucrose octanoate	F, G	SucraShield
<i>tau</i> -fluvalinate	F, G	Mavrik Aquaflow
thiamethoxam	F, G	Flagship 25WG
Mites		
abamectin ^{13,14,15}	F, G	Avid 0.15EC
acephate ¹⁵	G	1300 Orthene TR
acephate & fenpropathrin ¹⁵	G	Tame/Orthene TR
acequinocyl ¹⁵	F, G	Shuttle 15 SC, Shuttle O
azadirachtin	F, G	Azahar, Azatrol EC
<i>Beauveria bassiana</i>	F, G	Naturalis L
bifenazate ¹⁵	F, G	Floramite SC
bifenazate & abamectin ^{13,14,15}	F, G	Sirocco
bifenthrin	F, G	Attain TR, Talstar Select
capsaicin and other capsaicinoids ¹⁵	F, G	Hot Pepper Wax
carbaryl ¹⁴	F	Sevin 80 WSP
chlorfenapyr ^{13,14,15}	G	Pylon Miticide
chlorpyrifos	F, G ⁴	DuraGuard ME
chlorpyrifos & cyfluthrin	G	Duraplex TR
<i>Chromobacterium subsugae</i>	F, G	MBI-203 EP
clofentezine ¹⁵	F, G	Ovation SC
deltamethrin (suppression)	F	DeltaGard GC 5SC
diazinon ^{13,14,15}	F	Diazinon 50W
dimethoate	F	Dimate 4E
etoxazole	G	Beethoven TR
etoxazole	F, G	TetraSan 5 WDG ¹⁵
fenazaquin	F, G	Magus Miticide
fenbutatin-oxide ¹⁵	F, G	Vendex 50 WP
fenoxycarb	G	Preclude TR
fenpropathrin ¹⁵	F, G	Tame 2.4EC
fenpyroximate ^{13,14,15}	F, G	Akari 5SC
hexythiazox ¹⁵	F, G	Hexygon DF
<i>Isaria fumosorosea</i> (formerly <i>Paecilomyces fumosoroseus</i>) ^{13,14,15}	F, G	Preferal
lambda-cyhalothrin	F, G	Scimitar GC
malathion ¹⁵	F	Malathion 5 EC
methiocarb	F, G	Mesurool 75-W
milbemectin ¹⁵	F	Ultiflora
naled ¹⁵ (suppression)	F, G	Dibrom 8 Emulsive
neem oil	F, G	Triact 70
oil (mineral, paraffinic, petroleum, vegetable, etc.)	F, G	Ultra-Fine Oil

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
oxydemeton-methyl	F	MSR Spray Concentrate
potassium salts of fatty acids (insecticidal soap)	F, G	M-Pede, Des-X
potassium silicate (suppression)	F	Sil-Matrix
pyrethrins & piperonyl butoxide	G	Pyrethrum TR Micro
pyrethrins, piperonyl butoxide & silicon dioxide	F	Diatect II Multipurpose
pyrethrins, rotenone & associated resins	F, G	Pyrellin E.C.
pyridaben ^{13,15}	F, G	Sanmite
sorbitol octanoate	F, G	SorbiShield 90
spinosad ¹⁵	F, G	Conserve SC
spiromesifen ^{13,14,15,16}	F, G	Judo Insecticide/ Miticide
spirotetramat ¹⁵	F, G	Kontos
sucrose octanoate	F, G	SucraShield
<i>tau</i> -fluvalinate	F, G	Mavrik Aquaflow
Plant (Lygus) bugs & fleahoppers		
acephate	F, G	1300 Orthene TR, Orthene Turf, Tree & Ornamental WSP
acetamiprid	F, G	TriStar 30SG
acephate & fenpropathrin	G	Tame/Orthene TR
azadirachtin	F, G	Azahar, Azatrol EC
<i>Beauveria bassiana</i>	F, G	Mycotrol O
bifenthrin	F, G	Attain TR, Talstar Select
carbaryl	F	Sevin 80 WSP
chlorpyrifos	F, G	DuraGuard ME
cyfluthrin	F, G	Decathlon 20 WP
cyfluthrin & imidacloprid	F	Discus Nursery
deltamethrin	F	DeltaGard GC 5SC
fenpropathrin	F, G	Tame 2.4EC
flonicamid	F, G	Aria
<i>Isaria fumosorosea</i> (formerly <i>Paecilomyces fumosoroseus</i>)	F, G	Preferal
lambda-cyhalothrin	F, G	Scimitar GC
malathion	F	Malathion 5 EC
oil (mineral, paraffinic, petroleum, vegetable, etc.)	F, G	Ultra-Fine Oil
permethrin	F, G	Perm-UP 3.2 EC
potassium salts of fatty acids (insecticidal soap)	F, G	M-Pede, Des-X
pyrethrins	F, G	PyGanic EC 5.0II
pyrethrins & piperonyl butoxide	F, G	Pyreth-It Formula 2

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
pyrethrins, piperonyl butoxide & silicon dioxide	F	Diatect II Multipurpose
pyrethrins, rotenone & associated resins	F, G	Pyrellin E.C.
sorbitol octanoate	F, G	SorbiShield 90
sucrose octanoate	F, G	SucraShield
<i>tau</i> -fluvalinate	F, G	Mavrik Aquaflow
thiamethoxam	F, G	Flagship 25WG
Shore flies		
azadirachtin	F, G	Azahar, Azatin XL
<i>Beauveria bassiana</i>	F, G	Naturalis L
chlorpyrifos	F, G	DuraGuard ME
chlorpyrifos & cyfluthrin	G	Duraplex TR
cyromazine	G	Citation
diflubenzuron	F, G	Adept Insect Growth Regulator
potassium salts of fatty acids (insecticidal soap)	F, G	AllPro Insecticidal Soap 40%, M-Pede
pyriproxyfen	F, G	Distance Insect Growth Regulator
<i>Steinernema carpocapsae</i>	F, G	Millenium
Slugs & snails		
iron phosphate	F, G	Sluggo-Ag
metaldehyde	F, G	Deadline Bullets, Slug-Fest
methiocarb	F, G	MesuroI 75-W
phosmet	F	Imidan 70-W
sodium ferric EDTA	F	Dr.T's Slug & Snail Killer
Thrips		
abamectin (suppression)	F, G	Avid 0.15EC
acephate	F, G	Orthene Turf, Tree & Ornamental WSP
acephate & fenpropathrin	G	Tame/Orthene TR
acetamiprid	F, G	TriStar 30SG
azadirachtin	F, G	Azahar, Azatin XL
<i>Beauveria bassiana</i>	F, G	BotaniGard ES, Mycotrol O
bifenazate & abamectin (suppression)	F, G	Sirocco
bifenthrin	F, G	Attain TR, Talstar Select
carbaryl	F	Sevin 80 WSP
chlorfenapyr	G	Pylon Miticide
chlorpyrifos	F	DuraGuard ME
chlorpyrifos & cyfluthrin	G	Duraplex TR
cyfluthrin	F, G	Decathlon 20 WP
cyfluthrin & imidacloprid	F	Discus Nursery
deltamethrin	F	DeltaGard GC 5SC

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
diazinon	F	Diazinon 50W
dimethoate	F	Dimate 4E
dinotefuran (chilli thrips suppression)	F, G	Safari 20SG
fenoxycarb	G	Preclude TR
fenpropathrin	F, G	Tame 2.4EC
flonicamid (suppression)	F, G	Aria
imidacloprid (suppression)	F, G	Marathon II, 1%G, 60 WP
<i>Isaria fumosorosea</i> (formerly <i>Paecilomyces fumosoroseus</i>)	F, G	Preferal
kaolin (suppression)	F, G	Surround WP
lambda-cyhalothrin	F, G	Scimitar GC
malathion	F	Malathion 5 EC
methiocarb	F, G	MesuroI 75-W
naled	F	Dibrom 8 Emulsive
novaluron	F, G	Pedestal
oil (mineral, paraffinic, petroleum, vegetable, etc.)	G	Ultra-Fine Oil
oxydemeton-methyl	F	MSR Spray Concentrate
permethrin	F, G	Perm-UP 3.2 EC
potassium salts of fatty acids (insecticidal soap)	F, G	AllPro Insecticidal Soap 40%, M-Pede
pyrethrins	F, G	PyGanic EC 5.0II
pyrethrins & piperonyl butoxide	F, G	Pyreth-It Formula 2
pyrethrins, piperonyl butoxide & silicon dioxide	F	Diatect II Multipurpose
pyrethrins, rotenone & associated resins	F, G	Pyrellin E.C.
pyridalyl	G	Overture 35 WP
rosemary oil & peppermint oil	F, G	Ecotrol EC
s-kinoprene	F, G	Enstar II
sorbitol octanoate	F, G	SorbiShield 90
spinosad	F, G	Conserve SC
<i>Steinernema feltiae</i>	G	Nemasys
sucrose octanoate	F, G	SucraShield
<i>tau</i> -fluvalinate	F, G	Mavrik Aquaflow
thiamethoxam	F, G	Flagship 25WG
tolfenpyrad	G	Hachi-Hachi
Whiteflies		
abamectin (suppression)	F, G	Avid 0.15EC
acephate	F, G	Orthene Turf, Tree & Ornamental WSP
acephate & fenpropathrin ¹⁷	G	Tame/Orthene TR
acetamiprid	F, G	TriStar 30SG
azadirachtin	F, G	Azahar, Azatin XL

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
<i>Beauveria bassiana</i>	F, G	BotaniGard ES, Mycotrol O
bifenazate & abamectin (suppression)	F, G	Sirocco
bifenthrin	F, G	Menace GC 7.9% Flowable, Talstar Select
buprofezin	F, G	Talus 40SC, 70DF
capsaicin and other capsaicinoids	F, G	Hot Pepper Wax
carbaryl	F	Sevin 80 WSP
chlorpyrifos	F	Dursban 50W
chlorpyrifos & cyfluthrin	G	Duraplex TR
cyfluthrin	F, G	Decathlon 20 WP
cyfluthrin & imidacloprid	F	Discus Nursery
diazinon	F	Diazinon 50W
diflubenzuron (suppression)	F, G	Adept, Dimilin SC Insect Growth Regulator
dimethoate	F	Dimate 4E
dinotefuran	F, G	Safari 20SG
etoxazole (suppression)	G	Beethoven TR
fenazaquin	F, G	Magus Miticide
fenoxycarb	G	Preclude TR
fenpropathrin	F, G	Tame 2.4EC
flonicamid	F, G	Aria
imidacloprid	F, G	Marathon II, 1%G, 60 WP
<i>Isaria fumosorosea</i> (formerly <i>Paecilomyces fumosoroseus</i>)	F, G	Preferal
lambda-cyhalothrin	F, G	Scimitar GC
malathion	F	Malathion 5 EC
naled	F, G	Dibrom 8 Emulsive
neem oil	F, G	Triact 70
novaluron	F, G	Pedestal
oil (mineral, paraffinic, petroleum, vegetable, etc.)	F, G	Ultra-Fine Oil
permethrin	F, G	Perm-UP 3.2 EC
potassium salts of fatty acids (insecticidal soap)	F, G	M-Pede, Des-X
potassium silicate (suppression)	F	Sil-Matrix
pymetrozine	F, G	Endeavor
pyrethrins	F, G	PyGanic EC 5.0II
pyrethrins & piperonyl butoxide	F, G	Pyreth-It Formula 2
pyrethrins, piperonyl butoxide & silicon dioxide	F	Diatect II Multipurpose
pyrethrins, rotenone & associated resins	F, G	Pyrellin E.C.

Active Ingredient Common Name	Production Site ¹	Trade Name(s)/ Formulation ²
pyridaben	F, G	Sanmite
pyriproxyfen	F, G	Distance Insect Growth Regulator
rosemary oil & peppermint oil	F, G	Ecotrol EC
s-kinoprene	F, G	Enstar II
sorbitol octanoate	F, G	SorbiShield 90
spiromesifen	F, G	Judo Insecticide/ Miticide
spirotetramat	F, G	Kontos
sucrose octanoate	F, G	SucraShield
<i>tau</i> -fluvalinate	F, G	Mavrik Aquaflow
thiamethoxam	F, G	Flagship 25WG
tolfenpyrad	G	Hachi-Hachi

Footnotes:

- ¹ "F" indicates field, including shade house, production. "G" indicates greenhouse production.
- ² Usually only one or a few examples of an active ingredient's formulation is given; however, there may be other products as effective as those listed.
- ³ Labeled for *Liriomyza* leafminers only.
- ⁴ *Liriomyza trifolii* leafminers have become resistant to organophosphate and pyrethroid insecticides. Infrequent use may be effective, but repeated use may be ineffective, depending on the history of the target population.
- ⁵ Labeled for *Liriomyza* and boxwood leafminers.
- ⁶ Labeled for boxwood and azalea leafminers.
- ⁷ Labeled for dipterous leafminers only.
- ⁸ Labeled for lepidopterous leafminers only.
- ⁹ Labeled for *Liriomyza* and lepidopterous leafminers.
- ¹⁰ Labeled for boxwood leafminer, a dipterous leafminer.
- ¹¹ Labeled for the magnolia leafminer, a lepidopterous leafminer.
- ¹² Labeled for spotted tentiform leafminer, a lepidopterous leafminer.
- ¹³ Labeled for tarsonemid mites, such as broad & cyclamen mites.
- ¹⁴ Labeled for eriophyid mites, such as bud, gall and rust mites.
- ¹⁵ Labeled for tetranychid mites, such as twospotted spider mite.
- ¹⁶ Labeled for tenuipalpid mites such as false spider mites.
- ¹⁷ The combination of acephate with a pyrethroid, such as fenpropathrin, has resulted in synergistic effects on whitefly mortality.