

Insect and Mite Management Options on Commercial Greenhouse-Grown Flower Crops in Florida¹

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Effective management of arthropod pests of 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 economic combinations of cultural controls (such as disposal of crop residue, reducing unnecessary water in the greenhouse, selection of less affected varieties and species, etc.), physical controls (such as glass or 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 summary presents the chemical control measures that are available to commercial flower producers in Florida and includes microbial insecticides that may be considered also as components of biological control. Pesticide labels sometimes provide for the product's use on any "ornamental" or "flower" crop and sometimes for use only on specifically named flower crops. This summary provides the chemical options available for use in the greenhouse production setting for any

ornamental flower crop and the additional specific options available for use on some of the most commonly produced flowers.

Information in Table 1 applies to any flower crop produced in Florida. Tables 2 thru 10 give additional options available for specifically named flower crops. The arthropod pests most likely to damage the crop in Florida are section headings. Producers are permitted by the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) to apply a pesticide to control a pest not named on the label, so long as the product's use is permitted on the target crop and all other provisions of the label are followed. The pesticides listed often are registered for use on additional pests not mentioned in this summary.

For each arthropod pest presented, commercial products available for control are grouped, alphabetically, by active ingredient common name. For each active ingredient, examples of commercial products are given. Other examples may exist that are as effective as those mentioned. Notes from the label are provided to qualify some uses. Precautionary statements and re-entry intervals are given to aid in the safe use of the pesticides. When available,

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hyperlinks to the indicated pesticide label are provided in Table 11 of the electronic forms of this summary. The hyperlinks are to business or governmental Web sites and not to any source maintained by the University of Florida. Occasionally these sites change without notice rendering the link ineffective.

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

Table 1. Control measures available for all commercial greenhouse-grown flower crops in Florida.

Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Aphids (Homoptera: Aphididae)				
Abamectin	Avid 0.15EC	Warning	12	Suppression; do not spray on roses, chrysanthemum or gerbera
Acephate	1300 Orthene TR	Caution	24	
Azadirachtin	Ornazin 3% EC	Warning	12	
	Azatin XL	Caution	4	
<i>Beauveria bassiana</i>	Botanigard ES	Warning	12	
	Botanigard 22 WP	Caution	4	
	Naturalis T&O	Caution	4	
Bifenthrin	Talstar F, GH, N	Caution	12	
	Attain TR	Warning	12	
Chlorpyrifos	Duraguard ME	Caution	24	Do not spray on kalanchoes
	Chlorpyrifos Pro 4	Warning	24	Some varieties of azaleas, camellias, poinsettias, rose bushes, or variegated ivy show varying degrees of phytotoxicity.
Chlorpyrifos & Cyfluthrin	Duraplex TR	Warning	24	
Cinnamaldehyde	Cinnamite	Caution	4	
Clarified Hydrophobic Extract of Neem Oil	Triact 70	Caution	4	
Cyfluthrin	Decathlon 20WP, WSP	Caution	12	
Diazinon	KnoxOut GH	Caution	12	Do not use on Bella palm, cracaena, hoyo, maidenhair fern, neath, and prayer plant.
Endosulfan	Thiodan 3EC	Danger	24	
	Phaser 3EC, 50WSB	Danger	24	Do not apply to 'Bonnafon Delux,' 'Fred Shoemith,' and 'White Knight' chrysanthemums as injury may result.
	Endosulfan 50WP			
Fenoxycarb	Preclude TR	Caution	12	
Fenpropathrin	Tame 2.4EC	Warning	24	
Imidacloprid	Marathon 60WP, 1G, II	Caution	12	
Lambda-Cyhalothrin	Scimitar GC	Caution	24	
Naled	Dibrom 8E	Danger	24	'White Butterfly' and 'Golden Rapture' roses, 'Pink Champagne' chrysanthemums, green wandering jew, poinsettias and Dutchman's pipe may be injured by vapor.
Permethrin	Astro	Caution	12	
Potassium Salts of Fatty Acids	Insecticidal Soap 49.52 CF	Warning	12	See label for specific crop restrictions.
	M-Pede	Warning	12	Combine with other pesticides
Pymetrozine	Endeavor	Caution	12	
Pyrethrins & Piperonyl Butoxide	1100 Pyrethrum TR	Warning	12	
	Pyreth-It	Caution	12	
	Pyrenone Crop Spray			

Table 1. Control measures available for all commercial greenhouse-grown flower crops in Florida.

Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Pyrethrins & Rotenone & Other Cube Resins	Pyrellin EC	Caution	12	
Pyriproxyfen	Distance IGR	Caution	12	Suppression; do not apply to salvia, ghost plant, boston fern, schefflera or coral bells; do not apply to poinsettia after bract formation.
S-Kinoprene	Enstar II	Warning	4	Application should be made to poinsettia before bract formation. Foliar damage on some sensitive varieties can result. Some varieties of roses, such as yellow blooded roses, show delayed damage. Slight to moderate injury has occurred on some blooms under certain conditions, suggest application be made in prebloom stage.
Sulfotepp	Plantfume 103	Danger	See Notes	Use on plants with open flowers (especially geraniums) is not recommended. Do not use when temperature is dropping. See information booklet for list of plants not damaged under normal conditions; Variable REIs see label.
Tau-Fluvalinate	Mavrik Aquaflow	Caution	12	
Armyworms (Lepidoptera: Noctuidae) See also: Caterpillars				
<i>Bacillus thuringiensis aizawai</i>	Xentari, DF	Caution	4	
<i>Bacillus thuringiensis kurstaki</i>	Javelin WG	Caution	4	
	Dipel Pro DF, DF, 2X			
	Troy-BT 2WP			
	Biobit HP			
<i>Bacillus thuringiensis kurstaki</i> EG7841	Crymax WP	Caution	4	
Chlorpyrifos	Chlorpyrifos Pro 4	Warning	24	Some varieties of azaleas, camellias, poinsettias, rose bushes, or variegated ivy show varying degrees of phytotoxicity.
Diflubenzuron	Adept	Caution	12	Do not apply to: poinsettias, hibiscus, Reiger begonia & plants grown on capillary water mats.
	Dimilin SC	Caution	12	
	Dimilin 25W	Caution	12	Beet armyworm
Fenpropathrin	Tame 2.4EC	Warning	24	Beet armyworm
Tebufenozide	Confirm T/O	Caution	4	

Table 1. Control measures available for all commercial greenhouse-grown flower crops in Florida.

Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Caterpillars (Lepidoptera) For armyworms, <i>Helicoverpa</i> (corn earworm, etc.) and <i>Heliothis</i> (tobacco budworm, etc.), leafrollers, leaftiers, loopers & poinsettia hornworm (ello moth) see individual section.				
Azadirachtin	Ornazin 3% EC	Warning	12	
	Azatin XL	Caution	4	
<i>Bacillus thuringiensis aizawai</i>	Xentari, DF	Caution	4	
<i>Bacillus thuringiensis kurstaki</i>	Javelin WG	Caution	4	
	Dipel Pro DF, DF, 2X			
	Troy-BT 2WP			
	Biobit HP			
<i>Bacillus thuringiensis kurstaki</i> EG7841	Crymax WP	Caution	4	
<i>Beauveria bassiana</i>	Naturalis T&O	Caution	4	Leaf-feeding caterpillars
Bifenthrin	Talstar F, GH, N	Caution	12	Leaf-feeding caterpillars
	Attain TR	Warning	12	
Chlorpyrifos & Cyfluthrin	Duraplex TR	Warning	24	
Cyfluthrin	Decathlon 20WP, WSP	Caution	12	Leaf-feeding caterpillars
Lambda-Cyhalothrin	Scimitar GC	Caution	24	Leaf-feeding caterpillars
Permethrin	Astro	Caution	12	Leaf-feeding caterpillars
Pyrethrins & Piperonyl Butoxide	Pyreth-It	Caution	12	
	Pyrenone Crop Spray			
Spinosad	Conserve SC T&O	Caution	4	Lepidopterous larvae
Tau-Fluvalinate	Mavrik Aquaflo	Caution	12	Leaf-feeding caterpillars
Chrysomelid Beetles (cucumber, flea, and leaf beetles) (Coleoptera: Chrysomelidae)				
Azadirachtin	Azatin XL	Caution	4	
<i>Beauveria bassiana</i>	Naturalis T&O	Caution	4	Cucumber & flea beetles
Bifenthrin	Talstar F, GH, N	Caution	12	Flea beetles
Chlorpyrifos	Duraguard ME	Caution	24	Do not spray on kalanchoes
	Chlorpyrifos Pro 4	Warning	24	Some varieties of azaleas, camellias, poinsettias, rose bushes, or variegated ivy show varying degrees of phytotoxicity.
Cyfluthrin	Decathlon 20WP, WSP	Caution	12	Flea beetles
Imidacloprid	Marathon II	Caution	12	Leaf beetles
Lambda-Cyhalothrin	Scimitar GC	Caution	24	Flea beetles
Pyrethrins & Piperonyl Butoxide	1100 Pyrethrum TR	Warning	12	Cucumber beetles
	Pyreth-It	Caution	12	Flea & cucumber beetles
	Pyrenone Crop Spray	Caution	12	
Spinosad	Conserve SC T&O	Caution	4	
Dipterous Leafminers (Diptera: Agromyzidae)				
Abamectin	Avid 0.15EC	Warning	12	<i>Liriomyza</i> leafminers; phytotoxicity has been observed on certain species of ferns and Shasta daisy.

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Azadirachtin	Ornazin 3% EC	Warning	12	
	Azatin XL	Caution	4	
Bifenthrin	Talstar N, GH, F	Caution	12	
Cyromazine	Citation	Caution	12	Not for adults
Fenpropathrin	Tame 2.4EC	Warning	24	
Imidacloprid	Marathon 60WP, 1G, II	Caution	12	
Lambda-Cyhalothrin	Scimitar GC	Caution	24	Adults
Permethrin	Astro	Caution	12	
Potassium Salts of Fatty Acids	M-Pede	Warning	12	Combine with other pesticides.
Pyrethrins & Piperonyl Butoxide	Pyrenone Crop Spray	Caution	12	
Pyrethrins & Rotenone & Other Cube Resins	Pyrellin EC	Caution	12	
Spinosad	Conserve SC T&O	Caution	4	
Fleahoppers (Hemiptera: Miridae)				
Pyrethrins & Rotenone & Other Cube Resins	Pyrellin EC	Caution	12	
Fungus Gnats (Diptera: Sciaridae)				
Acephate	1300 Orthene TR	Caution	24	
Azadirachtin	Ornazin 3% EC	Warning	12	
	Azatin XL	Caution	4	
<i>Bacillus thuringiensis israelensis</i>	Gnatrol	Caution	4	Larvae
<i>Beauveria bassiana</i>	Naturalis T&O	Caution	4	
Bifenthrin	Talstar N, GH, F	Caution	12	
	Attain TR	Warning	12	
Chlorpyrifos	Duraguard ME	Caution	24	Do not spray on kalanchoes.
Chlorpyrifos & Cyfluthrin	Duraplex TR	Warning	24	
Cyfluthrin	Decathlon 20WP, WSP	Caution	12	
Cyromazine	Citation	Caution	12	Not for adults
Diazinon	KnoxOut GH	Caution	12	Larvae; do not use on Bella palm, dracaena, hoya, maidenhair fern, neath, and prayer plant
Diflubenzuron	Adept	Caution	12	Do not apply to: poinsettias, hibiscus, reiger begonia & plants grown on capillary water mats
Fenoxycarb	Precision	Caution	12	
Permethin	Astro	Caution	12	
Pyrethrins & Piperonyl Butoxide	1100 Pyrethrum TR	Warning	12	
	Pyrenone Crop Spray	Caution	12	
Pyriproxyfen	Distance IGR	Caution	12	Do not apply to salvia, ghost plant, boston fern, schefflera or coral bells; do not apply to poinsettia after bract formation.

Table 1. Control measures available for all commercial greenhouse-grown flower crops in Florida.

Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
S-Kinoprene	Enstar II	Warning	4	Application should be made to poinsettia before bract formation. Foliar damage on some sensitive varieties can result. Some varieties of roses, such as yellow blooded roses, show delayed damage. Slight to moderate injury has occurred on some blooms under certain conditions, suggest application be made in prebloom stage.
<i>Steinernema feltiae</i>	Nemasys	None	0	
<i>Heliothis</i>, (Tobacco budworm, etc), <i>Helicoverpa</i> (Corn earworm, etc.) (Lepidoptera: Noctuidae) (See also: Caterpillars)				
<i>Bacillus thuringiensis aizawai</i>	Xentari, DF	Caution	4	<i>Heliothis</i> spp., tobacco budworm
<i>Bacillus thuringiensis kurstaki</i>	Javelin WG	Caution	4	<i>Heliothis</i> spp., tobacco budworm
	Dipel Pro DF, DF, 2X			
	Troy-BT 2WP			
	Biobit HP			
<i>Bacillus thuringiensis kurstaki</i> EG7841	Crymax WP	Caution	4	Tobacco budworm
Leafhoppers (Homoptera: Cicadellidae)				
Azadirachtin	Azatin XL	Caution	4	
Bifenthrin	Talstar N, GH, F	Caution	12	
Chlorpyrifos	Duraguard ME	Caution	24	Do not spray on kalanchoes
	Chlorpyrifos Pro 4	Warning	24	Some varieties of azaleas, camellias, poinsettias, rose bushes, or variegated ivy show varying degrees of phytotoxicity.
Clarified Hydrophobic Extract of Neem Oil	Triact 70	Caution	4	
Cyfluthrin	Decathlon 20WP, WSP	Caution	12	
Fenpropathrin	Tame 2.4EC	Warning	24	
Imidacloprid	Marathon II	Caution	12	
Lambda-Cyhalothrin	Scimitar GC	Caution	24	
Permethrin	Astro	Caution	12	
Potassium Salts of Fatty Acids	Insecticidal Soap 49.52CE	Warning	12	See label for specific crop restrictions.
	M-Pede	Warning	12	
Pyrethrins & Piperonyl Butoxide	1100 Pyrethrum TR	Warning	12	
	Pyreth-It	Caution	12	
	Pyrenone Crop Spray			
Pyrethrins & Rotenone & Other Cube Resins	Pyrellin EC	Caution	12	
Tau-Fluvalinate	Mavrik Aquaflo	Caution	12	
Leafminers (See dipterous leafminers)				

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Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Leafrollers (Lepidoptera: Tortricidae) See also: Caterpillars				
Acephate	1300 Orthene TR	Caution	24	
<i>Bacillus thuringiensis aizawai</i>	Xentari, DF	Caution	4	Omnivorous leafrollers
<i>Bacillus thuringiensis kurstaki</i>	Javelin WG	Caution	4	Omnivorous & obliquebanded leafrollers
	Dipel Pro DF, DF, 2X	Caution	4	Omnivorous leafrollers
	Troy-Bt 2WP			
	Biobit HP			
<i>Bacillus thuringiensis kurstaki</i> EG7841	Crymax WP	Caution	4	Omnivorous leafrollers
Bifenthrin	Attain TR	Warning	12	Omnivorous leafrollers
Chlorpyrifos	Chlorpyrifos Pro 4	Warning	24	
Fenpropathrin	Tame 2.4EC	Warning	24	
Naled	Dibrom 8E	Danger	24	'White Butterfly' and 'Golden Rapture' roses, 'Pink Champagne' chrysanthemums, green wandering jew, poinsettias and Dutchman's pipe may be injured by vapor.
Leaf tiers (Lepidoptera: Crambidae) See also: Caterpillars				
<i>Bacillus thuringiensis kurstaki</i>	Javelin WG	Caution	4	Omnivorous leaf tier
Loopers (Lepidoptera: Noctuidae) See also: Caterpillars				
Acephate	1300 Orthene TR	Caution	24	Cabbage loopers
<i>Bacillus thuringiensis aizawai</i>	Xentari, DF	Caution	4	
<i>Bacillus thuringiensis kurstaki</i>	Javelin WG	Caution	4	
	Dipel Pro DF, DF, 2X			
	Troy-Bt 2WP			
	Biobit HP			
<i>Bacillus thuringiensis kurstaki</i> EG7841	Crymax WP	Caution	4	
Mealybugs (Homoptera: Pseudococcidae)				
Acephate	1300 Orthene TR	Caution	24	
Azadirachtin	Ornazin 3% EC	Warning	12	
	Azatin XL	Caution	4	
<i>Beauveria bassiana</i>	Botanigard ES	Warning	12	
	Botanigard 22 WP	Caution	4	
	Naturalis T&O			
Bifenthrin	Talstar N, GH, F	Caution	12	
	Attain TR	Warning	12	

Table 1. Control measures available for all commercial greenhouse-grown flower crops in Florida.

Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Chlorpyrifos	Duraguard ME	Caution	24	Do not spray on kalanchoes
	Chlorpyrifos Pro 4	Warning	24	Some varieties of azaleas, camellias, poinsettias, rose bushes, or variegated ivy show varying degrees of phytotoxicity.
Chlorpyrifos & Cyfluthrin	Duraplex TR	Warning	24	
Clarified Hydrophobic Extract of Neem Oil	Triact 70	Caution	4	
Cyfluthrin	Decathlon 20WP, WSP	Caution	12	
Diazinon	KnoxOut GH	Caution	12	Citrus, stem & root mealybugs; do not use on Bella palm, dracaena, hoyo, maidenhair fern, neath, and prayer plant.
Fenpropathrin	Tame 2.4EC	Warning	24	
Imidacloprid	Marathon 60WP, 1G, II	Caution	12	
Lambda-Cyhalothrin	Scimitar GC	Caution	24	
Naled	Dibrom 8E	Danger	24	'White Butterfly' and 'Golden Rapture' roses, 'Pink Champagne' chrysanthemums, green wandering jew, poinsettias and Dutchman's pipe may be injured by vapor.
Permethrin	Astro	Caution	12	
Potassium Salts of Fatty Acids	Insecticidal Soap 49.52CE	Warning	12	See label for specific crop restrictions.
	M-Pede	Warning	12	
Pymetrozine	Endeavor	Caution	12	
Pyrethrins & Piperonyl Butoxide	1100 Pyrethrum TR	Warning	12	
	Pyrenone Crop Spray	Caution	12	
Pyrethrins & Rotenone & Other Cube Resins	Pyrellin EC	Caution	12	
S-Kinoprene	Enstar II	Warning	4	Includes root mealybug; application should be made to poinsettia before bract formation. Foliar damage on some sensitive varieties can result. Some varieties of roses, such as yellow blooded roses, show delayed damage. Slight to moderate injury has occurred on some blooms under certain conditions, suggest application be made in prebloom stage.
Sulfotepp	Plantfume 103	Danger	See Notes	Use on plants with open flowers (especially geraniums) is not recommended. Do not use when temperature is dropping. See information booklet for list of plants not damaged under normal conditions; variable REIs see label.
Tau-Fluvalinate	Mavrik Aquaflo	Caution	12	

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Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Mites (Acari)				
Abamectin	Avid 0.15EC	Warning	12	Eriophyid mites (bud, rust), European red mite, southern red mite, tarsonemid mites (broad, cyclamen), twospotted spider mite
<i>Beauveria bassiana</i>	Naturalis T&O	Caution	4	
Bifenazate	Floramite	Caution	4	European red mite, southern red mite & spider mites
Bifenthrin	Talstar N, GH, F	Caution	12	Spider mites
	Attain TR	Warning	12	
Chlorfenapyr	Pylon	Caution	12	Spider mites, broad & cyclamen mites; phytotoxicity is likely to occur to some varieties of carnations, dianthus, kalachoe, poinsettia, roses, salvia, and zinnia.
Chlorpyrifos & Cyfluthrin	Duraplex TR	Warning	24	
Cinnamaldehyde	Cinnamite	Caution	4	
Clarified Hydrophobic Extract of Neem Oil	Triact 70	Caution	4	
Clofentezine	Ovation SC	Caution	12	European red mite & twospotted spider mite
Diazinon	KnoxOut GH	Caution	12	Cyclamen & broad mites; do not use on Bella palm, dracaena, hoyo, maidenhair fern, neath, and prayer plant.
Dicofol	Kelthane 50 WSP	Danger	48	Broad mite, cyclamen mite, European red mite, privet mite & twospotted spider mite
Endosulfan	Phaser 3EC, 50 WSB	Danger	24	Cyclamen mite; do not apply to 'Bonnafon Delux,' 'Fred Shoemith,' and 'White Knight' chrysanthemums
	Endosulfan 50WP			
	Thiodan 3EC	Danger	24	Cyclamen mite
Fenbutatin-Oxide	Vendex 50WP	Danger	48	Twospotted spider mite; apply only on prebloom chrysanthemums and prebract poinsettias
Fenpropathrin	Tame 2.4EC	Warning	24	European red, southern red & twospotted spider mites
Fenpyroximate	Akari 5 SC	Warning	12	Spider mites
Hexythiazox	Hexygon, DF	Caution	12	European red mite, southern red mite, & twospotted spider mite; see supplemental labeling for orchids
Lambda-Cyhalothrin	Scimitar GC	Caution	24	Broad mites & spider mites
Methiocarb	Mesurool 75W	Danger	24	
Potassium Salts of Fatty Acids	Insecticidal Soap 49.52CE	Warning	12	Spider mites; see label for specific crop restrictions.
	M-Pede	Warning	12	Spider mites

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Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Pyrethrins & Piperonyl Butoxide	1100 Pyrethrum TR	Warning	12	Spider mites
Pyrethrins & Rotenone & Other Cube Resins	Pyrellin EC	Caution	12	
Pyridaben	Sanmite	Warning	12	Broad mite; European red mite; southern red mite; tumid mite; twospotted spider mite
Spinosad	Conserve SC T&O	Caution	4	Spider mites
Tau-Fluvalinate	Mavrik Aquaflo	Caution	12	
Plant (Lygus) Bugs (Hemiptera: Miridae)				
Bifenthrin	Talstar F, GH, N	Caution	12	
	Attain TR	Warning	12	
Chlorpyrifos	Duraguard ME	Caution	24	Tarnished plant bugs; do not spray on kalanchoes
	Chlorpyrifos Pro 4	Warning	24	Some varieties of azaleas, camellias, poinsettias, rose bushes, or variegated ivy show varying degrees of phytotoxicity.
Cyfluthrin	Decathlon 20WP, WSP	Caution	12	
Fenpropathrin	Tame 2.4EC	Warning	24	Tarnished plant bug
Lambda-Cyhalothrin	Scimitar GC	Caution	24	
Permethrin	Astro	Caution	12	
Potassium Salts of Fatty Acids	Insecticidal Soap 49.52CF	Warning	12	See label for specific crop restrictions.
	M-Pede	Warning	12	
Pyrethrins & Piperonyl Butoxide	Pyrenone Crop Spray	Caution	12	
Pyrethrins & Rotenone & Other Cube Resins	Pyrellin EC	Caution	12	
Tau-Fluvalinate	Mavrik Aquaflo	Caution	12	
Shore Flies (Diptera: Ephydriidae)				
Bifenthrin	Talstar N, GH, F	Caution	12	
	Attain TR	Warning	12	
<i>Beauveria bassiana</i>	Naturalis T&O	Caution	4	
Chlorpyrifos	Duraguard ME	Caution	24	Do not spray on kalanchoes
Chlorpyrifos & Cyfluthrin	Duraplex TR	Warning	24	
Cyromazine	Citation	Caution	12	Not for adults
Diazinon	KnoxOut GH	Caution	12	Larvae; do not use on Bella palm, dracaena, hoyo, maidenhair fern, neath, and prayer plant
Diflubenzuron	Adept	Caution	12	Do not apply to: poinsettias, hibiscus, Reiger begonia & plants grown on capillary water mats
Fenoxycarb	Precision	Caution	12	
Potassium Salts of Fatty Acids	M-Pede	Warning	12	

Table 1. Control measures available for all commercial greenhouse-grown flower crops in Florida.

Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Pyriproxyfen	Distance IGR	Caution	12	Do not apply to salvia, ghost plant, Boston fern, schefflera or coral bells; do not apply to poinsettia after bract formation
Slugs & Snails (Mollusca: Gastropoda: Pulmonata: Limacidae)				
Metaldehyde	Deadline MP-S, Bullets	Caution	12	
	Durham Granules 3.5, 7.5			
	Trails End 3.5, LG			
Methiocarb	Mesurol Pro	Caution	24	
	Mesurol 75W	Danger	24	
Thrips (Thysanoptera: Thripidae)				
Abamectin	Avid 0.15EC	Warning	12	Suppression; do not spray on roses, chrysanthemum or gerbera
Acephate	1300 Orthene TR	Caution	24	
Azadirachtin	Ornazin 3% EC	Warning	12	
	Azatin XL	Caution	4	
<i>Beauveria bassiana</i>	Botanigard ES, 22WP	Warning	12	
	Botanigard 22WP	Caution	4	
	Naturalis T&O			
Bifenthrin	Talstar N, GH, F	Caution	12	
	Attain TR	Warning	12	
Chlorpyrifos	Duraguard ME	Caution	24	Do not spray on kalanchoes
Chlorpyrifos & Cyfluthrin	Duraplex TR	Warning	24	
Cyfluthrin	Decathlon 20WP, WSP	Caution	12	
Diazinon	KnoxOut GH	Caution	12	Do not use on Bella palm, dracaena, hoyo, maidenhair fern, neath, and prayer plant
Fenoxycarb	Preclude TR	Caution	12	
	Precision	Caution	12	Applications should not be made to poinsettia after bract formation.
Fenpropathrin	Tame 2.4EC	Warning	24	
Imidacloprid	Marathon 60WP, 1G	Caution	12	Suppression
	Marathon II	Caution	12	Thrips are suppressed on foliage only, not in buds or flowers.
Lambda-Cyhalothrin	Scimitar GC	Caution	24	
Methiocarb	Mesurol 75W	Danger	24	Western flower thrips
Permethrin	Astro	Caution	12	Citrus thrips
Potassium Salts of Fatty Acids	Insecticidal Soap 49.52CF	Warning	12	See label for specific crop restrictions.
	M-Pede	Warning	12	Exposed thrips
Pyrethrins & Piperonyl Butoxide	1100 Pyrethrum TR	Warning	12	
	Pyreth-It	Caution	12	
	Pyrenone Crop Spray			
Spinosad	Conserve SC T&O	Caution	4	Exposed thrips

Table 1. Control measures available for all commercial greenhouse-grown flower crops in Florida.

Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Sulfotepp	Plantfume 103	Danger	See Notes	Use on plants with open flowers (especially geraniums) is not recommended. Do not use when temperature is dropping. See information booklet for list of plants not damaged under normal conditions; Variable REIs see label.
Tau-Fluvalinate	Mavrik Aquaflo	Caution	12	
Whiteflies (Homoptera: Aleyrodidae)				
Abamectin	Avid 0.15EC	Warning	12	Suppression; do not spray on roses, chrysanthemum or gerbera
Acephate	1300 Orthene TR	Caution	24	May be more effective when combined with a pyrethroid such as fenpropathrin.
Azadirachtin	Ornazin 3% EC	Warning	12	
	Azatin XL	Caution	4	
<i>Beauveria bassiana</i>	Botanigard ES, 22WP	Warning	12	
	Botanigard 22WP	Caution	4	
	Naturalis T&O			
Bifenthrin	Talstar N, GH, F	Caution	12	
	Attain TR	Warning	12	
Chlorpyrifos	Chlorpyrifos Pro 4	Warning	24	Some varieties of azaleas, camellias, poinsettias, rose bushes, or variegated ivy show varying degrees of phytotoxicity.
Chlorpyrifos & Cyfluthrin	Duraplex TR	Warning	24	
Clarified Hydrophobic Extract of Neem Oil	Triact 70	Caution	4	
Cyfluthrin	Decathlon 20WP, WSP	Caution	12	
Diflubenzuron	Adept	Caution	12	Suppression; do not apply to: poinsettias, hibiscus, Reiger begonia & plants grown on capillary water mats
	Dimilin SC	Caution	12	Suppression
Endosulfan	Thiodan 3EC	Danger	24	
	Phaser 3EC, 50WSB	Danger	24	Do not apply to 'Bonnafon Delux,' 'Fred Shoemith,' and 'White Knight' chrysanthemums as injury may result.
	Endosulfan 50WP			
Fenoxycarb	Precision	Caution	12	Silverleaf [alias sweetpotato] & greenhouse whitefly
	Preclude TR	Caution	12	
Fenpropathrin	Tame 2.4EC	Warning	24	Silverleaf & sweetpotato whitefly
Imidacloprid	Marathon 60WP, 1G, II	Caution	12	
Lambda-Cyhalothrin	Scimitar GC	Caution	24	

Table 1. Control measures available for all commercial greenhouse-grown flower crops in Florida.

Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Permethrin	Astro	Caution	12	
Potassium Salts of Fatty Acids	Insecticidal Soap 49.52CF	Warning	12	See label for specific crop restrictions.
	M-Pede	Warning	12	
Pymetrozine	Endeavor	Caution	12	
Pyrethrins & Piperonyl Butoxide	1100 Pyrethrum TR	Warning	12	
	Pyreth-It	Caution	12	
	Pyrenone Crop Spray			
Pyrethrins & Rotenone & Other Cube Resins	Pyrellin EC	Caution	12	
Pyridaben	Sanmite	Warning	12	
Pyriproxyfen	Distance IGR	Caution	12	Do not apply to salvia, ghost plant, Boston fern, schefflera or coral bells; do not apply to poinsettia after bract formation.
	Pyrigro ME	Caution	12	
S-Kinoprene	Enstar II	Warning	4	Application should be made to poinsettia before bract formation. Foliar damage on some sensitive varieties can result. Some varieties of roses such as yellow blooded roses, show delayed damage. Slight to moderate injury has occurred on some blooms under certain conditions, suggest application be made in prebloom stage.
Sulfotepp	Plantfume 103	Danger	See Notes	Use on plants with open flowers (especially geraniums) is not recommended. Do not use when temperature is dropping. See information booklet for list of plants not damaged under normal conditions; Variable REIs see label.
Tau-Fluvalinate	Mavrik Aquaflo	Caution	12	

Table 2. Additional control measures available for commercial greenhouse-grown azalea in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Aphids (Homoptera: Aphididae)				
Acephate	Pinpoint 15G	Caution	12	
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			

Table 2. Additional control measures available for commercial greenhouse-grown azalea in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Armyworms (Lepidoptera: Noctuidae)				
POBs of the Nuclear Polyhedrosis Virus of <i>Spodoptera exigua</i>	Spod-X LC	Caution	4	Beet armyworm
Fungus Gnats (Diptera: Sciaridae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Lace Bugs (Hemiptera: Tingidae)				
Acephate	Pinpoint 15G	Caution	12	Container-grown nursery stock
	1300 Orthene TR	Caution	24	
Bifenthrin	Talstar N, GH, F	Caution	12	
Chlorpyrifos	Chlorpyrifos Pro 4	Warning	24	Some varieties show varying degrees of phytotoxicity.
Cyfluthrin	Decathlon 20WP, WSP	Caution	12	
Fenpropathrin	Tame 2.4EC	Warning	24	
Imidacloprid	Marathon 60WP, 1G, II	Caution	12	
Lambda-Cyhalothrin	Scimitar GC	Caution	24	
Permethrin	Astro	Caution	12	
Potassium Salts of Fatty Acids	Insecticidal Soap 49.52CF	Warning	12	See label for specific crop restrictions.
	M-Pede	Warning	12	
Pyrethrins & Piperonyl Butoxide	Pyrenone Crop Spray	Caution	12	
Mealybugs (Homoptera: Pseudococcidae)				
Acephate	Pinpoint 15G	Caution	12	Container-grown nursery stock
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Mites (Acari)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Spider mites
	Saf-T-Side Spray Oil	Caution	4	
Scales (Homoptera: Diaspididae; Coccidae)				
Acephate	1300 Orthene TR	Caution	24	
Azadirachtin	Ornazin 3% EC	Warning	12	Soft scales
Bifenthrin	Talstar N, GH, F	Caution	12	Brown soft scale; California red & San Jose scale crawlers
	Attain TR	Warning	12	
Chlorpyrifos	Duraguard ME	Caution	24	
	Chlorpyrifos Pro 4	Warning	24	Some varieties show varying degrees of phytotoxicity.
Chlorpyrifos & Cyfluthrin	Duraplex TR	Warning	24	
Clarified Hydrophobic Extract of Neem Oil	Triact 70	Caution	4	

Table 2. Additional control measures available for commercial greenhouse-grown azalea in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Cyfluthrin	Decathlon 20WP, WSP	Caution	12	Crawlers
Diazinon	KnoxOut GH	Caution	12	
Fenoxycarb	Precision	Caution	12	Soft scales, crawlers
	Preclude TR	Caution	12	
Fenpropathrin	Tame 2.4EC	Warning	24	San Jose scale, crawlers
Imidacloprid	Marathon 60WP	Caution	12	
	Marathon 1G	Caution	12	Soft scale; armored scale suppression
Lambda-Cyhalothrin	Scimitar GC	Caution	24	Scale crawlers; brown soft scale
Potassium Salts of Fatty Acids	Insecticidal Soap 49.52CF	Warning	12	See label for specific crop restrictions.
	M-Pede	Warning	12	Euonymus scale
Pyriproxyfen	Distance IGR	Caution	12	
	Pyrigro ME	Caution	12	
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
S-Kinoprene	Enstar II	Warning	4	Armored & soft-bodied scales
Sulfotepp	Plantfume 103	Danger	See Notes	Brown soft scale; Use on plants with open flowers is not recommended. Do not use when temperature is dropping. See information booklet for list of lants not damaged under normal conditions; Variable REIs, see label.
Thrips (Thysanoptera: Thripidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Whiteflies (Homoptera: Aleyrodidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			

Table 3. Additional control measures available for commercial greenhouse-grown carnations in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre-Caution	REI (Hrs)	Notes from Label
Aphids (Homoptera: Aphididae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP			
	Acephate Pro 75 WSP			

Table 3. Additional control measures available for commercial greenhouse-grown carnations in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Armyworms (Lepidoptera: Noctuidae)				
POBs of the Nuclear Polyhedrosis Virus of <i>Spodoptera exigua</i>	Spod-X LC	Caution	4	Beet armyworm
Dipterous Leafminers (Diptera: Agromyzidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Fungus Gnats (Diptera: Sciaridae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Mealybugs (Homoptera: Pseudococcidae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP			
	Acephate Pro 75 WSP			
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Mites (Acari)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Spider mites
	Saf-T-Side Spray Oil	Caution	4	
Thrips (Thysanoptera: Thripidae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP			
	Acephate Pro 75 WSP			
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Whiteflies (Homoptera: Aleyrodidae)				
Acephate	Orthene TT&O, S	Caution	24	May be more effective when combined with a pyrethroid such as fenpropathrin.
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP			
	Acephate Pro 75 WSP			

Table 3. Additional control measures available for commercial greenhouse-grown carnations in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			

Table 4. Additional control measures available for commercial greenhouse-grown chrysanthemums in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Aphids (Homoptera: Aphididae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75 SP	Caution	24	
	Acephate Pro 75 WSP			
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Armyworms (Lepidoptera: Noctuidae)				
POBs of the Nuclear Polyhedrosis Virus of <i>Spodoptera exigua</i>	Spod-X LC	Caution	4	Beet armyworm
Dipterous Leafminers (Diptera: Agromyzidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Fungus Gnats (Diptera: Sciaridae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Leafminers See: Dipterous Leafminers				
Leafrollers (Lepidoptera: Tortricidae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP	Caution	24	
	Acephate Pro 75 WSP			
				Phytotoxicity has occurred on: 'Albatross,' 'Bonnie Jean,' 'Dixie,' 'Garland,' 'Gent,' 'Iceberg,' 'Pride,' 'Showoff,' 'Statesman,' 'Tally Ho,' 'Westward Ho,' and 'Wild Honey'; Do not apply to open flowers.

Table 4. Additional control measures available for commercial greenhouse-grown chrysanthemums in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Mealybugs (Homoptera: Pseudococcidae)				
Acephate	Orthene TT&O	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP			
Acephate Pro 75 WSP				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Mites (Acari)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Spider mites
	Saf-T-Side Spray Oil	Caution	4	
Thrips (Thysanoptera: Thripidae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP	Caution	24	
Acephate Pro 75 WSP				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Whiteflies (Homoptera: Aleyrodidae)				
Acephate	Orthene TT&O, S	Caution	24	May be more effective when combined with a pyrethroid such as fenpropathrin
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP	Caution	24	
Acephate Pro 75 WSP				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			

Table 5. Additional control measures available for commercial greenhouse-grown gerbera daisy in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Table
Aphids (Homoptera: Aphididae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
Armyworms (Lepidoptera: Noctuidae)				
POBs of the Nuclear Polyhedrosis Virus of <i>Spodoptera exigua</i>	Spod-X LC	Caution	4	Beet armyworm
Dipterous Leafminers (Diptera: Agromyzidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
Fungus Gnats (Diptera: Sciaridae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
Leafminers (See Dipterous Leafminers)				
Mealybugs (Homoptera: Pseudococcidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
Mites				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Spider mites
Thrips (Thysanoptera: Thripidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
Whiteflies (Homoptera: Aleyrodidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	

Table 6. Additional control measures available for commercial greenhouse-grown lily in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Aphids (Homoptera: Aphididae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Easter lily
	Saf-T-Side Spray Oil	Caution	4	
Fungus Gnats (Diptera: Sciaridae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Easter lily
	Saf-T-Side Spray Oil	Caution	4	

Table 6. Additional control measures available for commercial greenhouse-grown lily in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Leafminers (See Dipterous Leafminers)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Easter lily
	Saf-T-Side Spray Oil	Caution	4	
Mealybugs (Homoptera: Pseudococcidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Easter lily
	Saf-T-Side Spray Oil	Caution	4	
Mites (Acari)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Easter lily; spider mites
	Saf-T-Side Spray Oil	Caution	4	
Thrips (Thysanoptera: Thripidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Easter lily
	Saf-T-Side Spray Oil	Caution	4	
Whiteflies (Homoptera: Aleyrodidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Easter lily
	Saf-T-Side Spray Oil	Caution	4	

Table 7. Additional control measures available for commercial greenhouse-grown orchids in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Aphids (Homoptera: Aphididae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP			
	Acephate Pro 75 WSP			
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Fungus Gnats (Diptera: Sciaridae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Mealybugs (Homoptera: Pseudococcidae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP			
	Acephate Pro 75 WSP			

Table 7. Additional control measures available for commercial greenhouse-grown orchids in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Safe-T-Side Spray Oil			
Mites (Acari)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Spider mites
	Safe-T-Side Spray Oil	Caution	4	
Thrips (Thysanoptera: Thripidae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP			
	Acephate Pro 75 WSP			
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Whiteflies (Homoptera: Aleyrodidae)				
Acephate	Orthene TT&O, S	Caution	24	May be more effective when combined with a pyrethroid such as fenpropathrin.
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP			
	Acephate Pro 75 WSP			
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			

Table 8. Additional control measures available for commercial greenhouse-grown poinsettias in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Fungus Gnats (Diptera: Sciaridae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Mealybugs (Homoptera: Pseudococcidae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75 SP			
	Acephate Pro 75 WSP			
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Spider Mites (Acari: Tetranychidae)				
Refined Petroleum Distillate	Ultra-Fine-Oil	Caution	4	
	Saf-T-Side Spray Oil			

Table 8. Additional control measures available for commercial greenhouse-grown poinsettias in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Poinsettia Hornworm (Ello Moth) (Lepidoptera: Sphingidae) See also: Caterpillars				
<i>Bacillus thuringiensis aizawai</i>	Xentari, DF	Caution	4	
<i>Bacillus thuringiensis kurstaki</i>	Javelin WG	Caution	4	
	Dipel Pro DF, DF, 2X			
	Troy-Bt 2WP			
	Biobit HP			
<i>Bacillus thuringiensis kurstaki</i> EG7841	Crymax WP	Caution	4	
Chlorpyrifos	Duraguard ME	Caution	24	Some varieties show varying degrees of phytotoxicity.
	Chlorpyrifos Pro 4	Warning	24	
Pyrethrins & Piperonyl Butoxide	1100 Pyrethrum TR	Warning	12	
	Pyrenone Crop Spray	Caution	12	
Thrips (Thysanoptera: Thripidae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP			
	Acephate Pro 75 WSP			
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			
Whiteflies (Homoptera: Aleyrodidae)				
Acephate	Orthene TT&O, S	Caution	24	May be more effective when combined with a pyrethroid such as fenpropathrin.
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP			
	Acephate Pro 75 WSP			
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
	Saf-T-Side Spray Oil			

Table 9. Additional control measures available for commercial greenhouse-grown roses in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Aphids (Homoptera: Aphididae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP	Caution	24	Do not apply to open flowers.
	Acephate Pro 75 WSP			

Table 9. Additional control measures available for commercial greenhouse-grown roses in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Refined Petroleum Distillate	Saf-T-Side Spray Oil	Caution	4	
Armyworms (Lepidoptera: Noctuidae)				
Permethrin	Pounce 3.2 EC	Caution	12	
	Ambush	Warning	12	
	Pounce 25WP, WSB			
POBs of the Nuclear Polyhedrosis Virus of <i>Spodoptera exigua</i>	Spod-X LC	Caution	4	Beet armyworm
Leafrollers (Lepidoptera: Tortricidae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP	Caution	24	Do not apply to open flowers.
	Acephate Pro 75 WSP			
Permethrin	Pounce 3.2EC	Caution	12	Omnivorous leafroller
	Ambush	Warning	12	Omnivorous leafroller
	Pounce 25WP, WSB			
Loopers (Lepidoptera: Noctuidae)				
Permethrin	Pounce 3.2EC	Caution	12	Cabbage looper
	Ambush	Warning	12	Cabbage looper
	Pounce 25WP, WSB			
Mealybugs (Homoptera: Pseudococcidae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP	Caution	4	Do not apply to open flowers.
	Acephate Pro 75 WSP			
Refined Petroleum Distillate	Saf-T-Side Spray Oil	Caution	4	
Mites (Acari)				
Refined Petroleum Distillate	Saf-T-Side Spray Oil	Caution	4	
Thrips (Thysanoptera: Thripidae)				
Acephate	Orthene TT&O, S	Caution	24	
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP	Caution	24	Do not apply to open flowers.
	Acephate Pro 75 WSP			
Refined Petroleum Distillate	Saf-T-Side Spray Oil	Caution	4	

Table 9. Additional control measures available for commercial greenhouse-grown roses in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Whiteflies (Homoptera: Aleyrodidae)				
Acephate	Orthene TT&O, S	Caution	24	May be more effective when combined with a pyrethroid such as fenpropathrin.
	Bracket TT&O			
	Address T/O			
	Sedagri 75SP	Caution	24	
	Acephate Pro 75 WSP			
Refined Petroleum Distillate	Saf-T-Side Spray Oil	Caution	4	

Table 10. Additional control measures available for commercial greenhouse-grown snapdragons in Florida. (Also see Table 1).

Common Name	Trade Name/ Formulation	Pre- Caution	REI (Hrs)	Notes from Label
Aphids (Homoptera: Aphididae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
Dipterous Leafminers (Diptera: Agromyzidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
Fungus Gnats (Diptera: Sciaridae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
Mealybugs (Homoptera: Pseudococcidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
Mites (Acari)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	Spider mites
Thrips (Thysanoptera: Thripidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	
Whiteflies (Homoptera: Aleyrodidae)				
Refined Petroleum Distillate	Ultra-Fine Oil	Caution	4	

Table 11. Common names, trade names, and formulations of pesticides for greenhouse-grown flower crops and links to labels in electronic version of table.

Common Name	Trade Name/Formulation	REI (Hrs)	Pre-Caution
Abamectin	Avid 0.15 EC	12	Warning
Acephate	1300 Orthene TR	24	Caution
	Acephate Pro 75 WSP		
	Address T/O		
	Bracket TT&O		
	Orthene TT&O, S		
	Pinpoint 15G	12	Caution
	Sedagri 75 SP	24	Caution
Azadirachtin	Azatin XL	4	Caution
	Ornazin 3% EC	12	Warning
<i>Bacillus thuringiensis aizawai</i>	XenTari, DF	4	Caution
<i>Bacillus thuringiensis israelensis</i>	Gnatrol	4	Caution
<i>Bacillus thuringiensis kurstaki</i>	Biobit HP	4	Caution
	Dipel Pro DF, DF, 2X		
	Javelin WG		
	Troy-Bt 2WP		
<i>Bacillus thuringiensis kurstaki</i> EG7841	Crymax WP	4	Caution
<i>Beauveria bassiana</i>	Botanigard 22 WP	4	Caution
	Botanigard ES	12	Warning
	Naturalis T&O	4	Caution
Bifenazate	Floramite	4	Caution
Bifenthrin	Attain TR	12	Warning
	Talstar F, GH, N		Caution
Chlorfenapyr	Pylon	12	Caution
Chlorpyrifos	Chlorpyrifos Pro 4	24	Warning
	Duraguard ME	24	Caution
Chlorpyrifos & Cyfluthrin	Duraplex TR	24	Warning
Cinnamaldehyde	Cinnamite	4	Caution
Clarified Hydrophobic Extract of Neem Oil	Triact 70 EC	4	Caution
Clofentezine	Ovation SC	12	Caution
Cyfluthrin	Decathlon 20WP, WSP	12	Caution
Cyromazine	Citation	12	Caution
Diazinon	KnoxOut GH	12	Caution
Dicofol	Kelthane 50 WSP	48	Danger
Diflubenzuron	Adept	12	Caution
	Dimilin 25W		
	Dimilin SC		
Endosulfan	Endosulfan 50WP	24	Danger
	Phaser 3EC		
	Thiodan 3EC		
Fenbutatin-Oxide	Vendex 50WP	48	Danger

Table 11. Common names, trade names, and formulations of pesticides for greenhouse-grown flower crops and links to labels in electronic version of table.

Common Name	Trade Name/Formulation	REI (Hrs)	Pre-Caution
Fenoxycarb	Precision	12	Caution
	Preclude TR		
Fenpropathrin	Tame 2.4EC	24	Warning
Fenpyroximate	Akari 5SC	12	Warning
Hexythiazox	Hexygon, DF	12	Caution
Imidacloprid	Marathon 60WP, 1G,	12	Caution
Lambda-Cyhalothrin	Scimitar GC	24	Caution
Metaldehyde	Deadline M-PS, Bullets	12	Caution
	Durham Granules 3.5, 7.5		
	Trails End 3.5, LG		
Methiocarb	MesuroI 75W	24	Danger
	MesuroI Pro	24	Caution
Naled	Dibrom 8E	24	Danger
Permethrin	Ambush	12	Warning
	Astro	12	Caution
	Pounce 3.2EC	12	Caution
	Pounce 25WP, WSB	12	Warning
POBs of the Nuclear Polyhedrosis Virus of <i>Spodoptera exigua</i>	Spod-X LC	4	Caution
Potassium Salts of Fatty Acids	Insecticidal Soap 49.52 DF	12	Warning
	M-Pede		
Pymetrozine	Endeavor	12	Caution
Pyrethrins & Piperonyl Butoxide	1100 Pyrethrum	12	Warning
	Pyrenone Crop Spray	12	Caution
	Pyreth-It		
Pyrethrins & Rotenone & Other Cube Resins	Pyrellin EC	12	Caution
Pyridaben	Sanmite	12	Warning
Pyriproxyfen	Distance IGR	12	Caution
	Pyrigro ME		
Refined Petroleum Distillate	Saf-T-Side Spray Oil	4	Caution
	Ultra-Fine Oil		
S-Kinoprene	Enstar II	4	Warning
Spinosad	Conserve SC T&O	4	Caution
Sulfotepp	Plantfume 103		Danger
<i>Steinernema feltiae</i>	Nemasys	0	None
Tau-Fluvalinate	Mavrik Aquaflow	12	Caution
Tebufenozide	Confirm T/O	4	Caution