



INSECT CONTROL Greenhouses

Commercial Greenhouses Insect Control*

Insect	Insecticide and Formulation**	Registered Crops	Comments***
Aphids			
	acephate ORTHENE TT&O SPRAY 97 ACEPHATE PRO 75 ORTHENE 1300TR	Airplane plant, aloe, begonia, bird-of-paradise, bloodleaf, Boston fern, cactus, calendula, carnation, chicken gizzard, Christmas cactus, chrysanthemum, coleus, columbine, croton, crown-of-thorns, cutleaf philodendron, devil's ivy, dieffenbachia, dusty miller, euonymus, gardenia, geranium, German ivy, grapeleaf ivy, impatiens, jade plant, Moses-in-the-cradle, night-blooming cereus, ornamental pepper, orchid, pansy, peperomia, peperomia (variegated), philodendron, poinsettia, polka-dot plant, sansevieria, santolina, schefflera, shrimp plant, snapdragon, spider plant, sprengeri asparagus, velvetleaf, wandering jew, white-edged Swedish ivy, zinnia	Foliar spray. Injures some chrysanthemum cultivars and foliage plants. See label. REI-24 hours MOA-group 1B
	acetamiprid TRISTAR	---	REI-24 hours MOA-group 4A
	azadirachtin AZATIN XL ORNAZIN	---	Complete coverage is important, but avoid excessive runoff. Use a fine spray; can also be applied as a drench. Azatin REI-4 hours Ornazin REI-12 hours MOA-group unknown
	<i>Beauveria bassiana</i> BOTANIGARD BOTANIGARD WP	---	Wait 48 hours before applying fungicides. REI-12 hours MOA-group M

*Check the product label before purchase; read carefully for use directions, rates, application frequency, re-entry, and phytotoxicity information. No endorsement is intended of products included nor criticism of those excluded.

**Some insecticides are negatively affected by the pH of the spray solution, especially pH values above 7.0. For most insecticides the optimum spray solution pH is 4 to 6. These values can be achieved by using a buffering adjuvant. (Pesticides containing fixed copper—for example, copper sulfate, copper hydroxide, Bordeaux mixture, and lime or lime sulfur—should not be acidified.)

***REI = Re-entry Interval. MOA= Mode of Action. To delay the possibility of insecticide resistance, it is important to rotate among pesticides with different modes of action (MOA). Thus spraying DeltaGard followed by Decathlon would not rotate insecticide MOAs because they are both in group 3; however, spraying Orthene 97 followed by DeltaGard would rotate insecticide MOAs since Orthene 97 is in group 1 and DeltaGard is in group 3.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Aphids (cont.)			
	bifenthrin ATTAIN TR TALSTAR S	All greenhouse ornamentals	Check label for cultivar sensitivity. Not effective against green peach aphid. Talstar S is a RESTRICTED USE pesticide. Attain TR is an aerosol fog. REI-12 hours MOA-group 3
	chlorpyrifos DURAGUARD 20 ME	Many greenhouse ornamentals DO NOT use on kalanchoes.	Plant damage information listed on label. Duraguard is a RESTRICTED USE pesticide. REI-24 hours MOA-group 1B
	chlorpyrifos + cyfluthrin DURAPLEX TR	---	Aerosol fogger REI-12 hours MOA-groups 1B and 3
	cyfluthrin DECATHLON 20WP	All greenhouse ornamentals	Read label for use information. REI-12 hours MOA-group 3
	dinotefuran SAFARI	---	Drench application may be more effective than spray for control of aphids. REI-12 hours MOA-group 4A
	fenoxycarb PRECLUDE TR	---	Fenoxycarb is an insect growth regulator. REI-12 hours MOA-group 7B
	fenpropathrin TAME 2.4EC	Anthurium, bedding plants, chamomile, chrysanthemum, columbine, foliage plants, geranium, gladiolus, impatiens, lily, lirioppe, marigold, poinsettia, snapdragon	Tame is a RESTRICTED USE pesticide. See label for additional application information. REI-24 hours MOA-group 3
	fenpropathrin/acephate TAME/ORTHENE TR	---	Aerosol fogger REI 24 hours MOA-groups 3 and 1B
	flonicamid ARIA	---	Labeled for use only in greenhouses and interiorscapes. REI-12 hours MOA-group 9B
	fluvalinate MAVRIK 2F	All greenhouse ornamentals	REI-12 hours MOA-group 3
	horticultural oil SUNSPRAY ULTRA- FINE OIL Many others	Azalea, begonia, camellia, chrysanthemum, crown-of-thorns, dieffenbachia, ferns, gardenia, geranium, jade plant, palms, philodendron, poinsettia, portulaca, zinnia	See label for additional application information. REI-4 hours MOA-group M

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Aphids (cont.)			
	imidacloprid MARATHON 1% G MARATHON 60 WP MARATHON II Generic versions available	All greenhouse ornamentals	Apply when cuttings are well established. Do not overwater following application. Marathon II is labeled for foliar and broadcast applications. REI-12 hours MOA-group 4A
	insecticidal soap M-PEDE OLYMPIC INSECTICIDAL SOAP	Many greenhouse ornamentals	Wet foliage thoroughly. REI-12 hours MOA-group M
	kinoprene ENSTAR II SEC	Many greenhouse ornamentals	See label for plant damage information. REI-4 hours MOA-group 7A
	methiocarb MESUROL 75W	---	Mesurool 75W is a RESTRICTED USE pesticide. Performance may be reduced when the spray solution has a pH greater than 7. Handlers must be checked every 2 hours when using this product. REI-24 hours MOA-group 1A
	neem oil TRIACT 70	---	REI-4 hours MOA-group M
	permethrin ASTRO	Marginal leaf burn may occur in dieffenbachia, salvia, and pteris ferns.	Direct application to blooms may cause browning of petals. REI-12 hours MOA-group 3
	pymetrozine ENDEAVOR	---	REI-12 hours MOA-group 9A
	pyrethrins PYRETHRUM TR	---	Aerosol fogger REI-12 hours MOA-group 3
	thiamethoxam FLAGSHIP	---	Flagship is a contact and systemic insecticide that moves in the leaf when sprayed or systemically throughout the plant when applied as a drench. With proper precautions, Flagship can be applied through chemigation systems. DO NOT exceed 8 ounces of product per acre per year or per crop, whichever is shorter. REI-12 hours MOA-group 4A

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Caterpillars			
	acephate ORTHENE TT&O SPRAY 97 ORTHENE 1300TR	Same as listed for aphids	REI-24 hours MOA-group 1B
	azadirachtin AZATIN XL ORNAZIN	---	Complete coverage is important but avoid excessive runoff. Use a fine spray; can also be applied as a drench. Azatin REI-4 hours Ornazin REI-12 hour MOA-group unknown
	<i>Bacillus thuringiensis</i> BIOBIT DIPEL WP MVP SOK-BT THORACIDE VICTORY ISAS Other formulations	All greenhouse ornamentals	Most effective when young larvae are present. REI-4 hours MOA-group M
	<i>Beauveria bassiana</i> NATURALIS-L	---	Wait 48 hours before applying fungicides. REI-4 hours MOA-group M
	bifenthrin ATTAIN TR TALSTAR S	All greenhouse ornamentals	Talstar S is a RESTRICTED USE pesticide. REI-12 hours MOA-group 3
	chlorfenapyr PYLON	PHYTOTOXICITY IS LIKELY TO OCCUR to some varieites of carnations, dianthus, kalanchoe, poinsettia, roses, salvia, and zinnia.	REI-12 hours MOA-group 13
	chlorpyrifos DURAGUARD 20 ME	Many greenhouse ornamentals DO NOT use on kalanchoes.	See label for plant damage information. Duraguard in a RESTRICTED USE pesticide. REI-24 hours MOA-group 1B
	cyfluthrin DECATHLON 20WP	All greenhouse ornamentals	REI-12 hours MOA-group 3
	diflubenzuron ADEPT 25 WSP	---	Read label and follow directions carefully to avoid plant injury. REI-12 hours MOA-group 15
	fenpropathrin TAME 2.4EC	Same as listed for aphids	Tame is a RESTRICTED USE pesticide. REI-24 hours MOA-group 3
	fluvalinate MAVRIK 2F	All greenhouse ornamentals	REI-12 hours MOA-group 3

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Caterpillars (cont.)			
	insecticidal soap OLYMPIC INSECTICIDAL 25 EC	---	REI-12 hours MOA-group M
	permethrin ASTRO	Marginal leaf burn may occur on dieffenbachia, salvia, and pteris ferns.	Direct application to blooms may cause browning of petals. REI-12 hours MOA-group 3
	pyrethrins PYRETHRUM TR	---	REI-12 hours MOA-group 3
	spinosad CONSERVE SC	---	REI-4 hours MOA-group 5
	tebufenozide CONFIRM 2E	---	Should be used with appropriate spray adjuvant to improve deposition and weatherability. Rate: 4.2- 16.7 fl. oz./100 gal. REI-4 hours MOA-group 18
Fungus Gnats			
<i>Larvae</i>			
	acetamiprid TRISTAR	---	REI-24 hours MOA-group 4A
	azadirachtin AZATIN XL ORNAZIN	---	Apply as a soil drench for larvae. Thoroughly wet the first 1 to 1.5 inches of soil in containers. Also, treat under benches and other places where algae builds up. REI-4 hours MOA-group unknown
	<i>Bacillus thuringiensis israelensis</i> GNATROL	All greenhouse ornamentals	Apply as a drench. REI-4 hours MOA-group M
	chlorfenapyr PYLON	PHYTOTOXICITY IS LIKELY TO OCCUR to some varieties of carnations, dianthus, kalanchoe, poinsettia, roses, salvia, and zinnia.	REI-12 hours MOA-group 13
	chlorpyrifos DURAGUARD 20 ME	DO NOT use on kalanchoes.	Shake concentrate well before using. Duraguard is a RESTRICTED USE pesticide. REI-24 hours MOA-group 1B
	cyromazine CITATION 75WP	---	Repeat application at 7- to 14-day intervals as necessary for control. REI-12 hours MOA-group 17
	diflubenzuron ADEPT	Greenhouse/shadehouse ornamentals	Soil drench. Read and follow label directions carefully to avoid plant injury. REI-12 hours MOA-group 15

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Fungus Gnats (cont.)			
<i>Larvae (cont.)</i>			
	dinotefuran SAFARI	---	REI-12 hours MOA-group 4A
	imidacloprid MARATHON 1% G MARATHON 60 WP MARATHON II	All greenhouse ornamentals	Do not overwater following drench or granular application. Marathon II is labeled for foliar and broadcast applications. REI-12 hours MOA-group 4A
	kinoprene ENSTAR II 5EC	Many greenhouse ornamentals	See label for plant damage information. REI-4 hours MOA-group 7A
	pyriproxyfen DISTANCE	---	REI-12 hours MOA-group 7C
	thiamethoxam FLAGSHIP	---	Flagship is a contact and systemic insecticide that moves in the leaf when sprayed or systemically throughout the plant when applied as a drench. It can be applied, with proper precautions, through chemigation systems. DO NOT exceed 8 ounces of Flagship per acre per year or crop, whichever is shorter. REI-12 hours MOA-group 4A
<i>Adults</i>			
	acephate ORTHENE 1300TR	---	Aerosol fogger REI-24 hours MOA-group 1B
	bifenthrin ATTAIN TR	---	Aerosol fogger REI-12 hours MOA-group 3
	chlorpyrifos + cyfluthrin DURAPLEX TR	---	Aerosol fogger REI-12 hours MOA-groups 1B and 3
	fenpropathrin/acephate TAME/ ORTHENE TR	---	Aerosol fogger REI 24 hours MOA-groups 3 and 1B
	permethrin ASTRO	Marginal leaf burn may occur on dieffenbachia, salvia, and pteris ferns.	Direct application to blooms may cause browning of petals. REI-12 hours MOA-group 3
	pyrethrum 1600 X-CLUDE	---	Aerosol fogger REI-12 hours MOA-group 3

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Leafminers			
	abamectin AVID 0.15EC FLORA-MEK 0.15EC	All greenhouse ornamentals	Repeat every 7 days as needed. REI-12 hours MOA-group 6
	acephate ORTHENE 1300TR	---	REI-24 hours MOA-group 1B
	azadirachtin AZATIN XL ORNAZIN	---	Complete coverage is important but avoid excessive runoff. Use a fine spray; can also be applied as a drench. Azatin REI-4 hours Ornazin REI-12 hours MOA-group unknown
	bifenthrin TALSTAR S	---	Talstar S is a RESTRICTED USE pesticide. REI-12 hours MOA-group 3
	chlorpyrifos DURAGUARD 20 ME	Many greenhouse ornamentals DO NOT use on kalanchoes.	Check label for recommended plants. Duraguard is a RESTRICTED USE pesticide. REI-24 hours MOA-group 1B
	cyromazine CITATION 75WP	---	Repeat at 7-day intervals or as necessary for control. For resistance control purposes, make no more than three consecutive applications or six total applications per crop. REI-12 hours MOA-group 17
	dinotefuran SAFARI	---	REI-12 hours MOA-group 4A
	malathion Various formulations	---	REI-12 hours MOA-group 1B
	novaluron PEDESTAL	DO NOT apply to poinsettias.	For population suppression ONLY . Resistance management restrictions. REI-12 hours MOA-group 15

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Leafminers (cont.)			
	permethrin ASTRO	---	REI-12 hours MOA-group 3
	spinosad CONSERVE SC	---	Adding a non-ionic spray adjuvant has been shown to increase efficacy. REI-4 hours MOA-group 5
Mealybugs			
	acephate ORTHENE TT&O ORTHENE TT&O SPRAY 97 ORTHENE 1300TR	Foliage plants, anthurium, cactus, orchid, poinsettia Same as listed for aphids	Foliar spray. Repeat at 2- to 3-week intervals. See label for plant damage information. REI-24 hours MOA-group 1B
	acetamiprid TRISTAR		REI-24 hours MOA-group 4A
	azadirachtin AZATIN XL ORNAZIN	---	Complete coverage is important but avoid excessive runoff. Use a fine spray; can also be applied as a drench. Azatin REI-4 hours Ornazin REI-12 hours MOA-group unknown
	<i>Beauveria bassiana</i> NATURALIS-L	---	Wait 48 hours before applying fungicides. REI-4 hours MOA-group M
	bifenthrin ATTAIN TR TALSTAR S	All greenhouse ornamentals	Talstar S is a RESTRICTED USE pesticide. REI-12 hours MOA-group 3
	buprofezin TALUS	---	Rate: 12 oz./100 gal. REI-12 hours MOA-group 16
	chlorpyrifos DURAGUARD 20 ME	Many greenhouse ornamentals DO NOT use on kalanchoes.	Plant damage information listed on the label. Duraguard is a RESTRICTED USE pesticide. REI-24 hours MOA-group 1B
	cyfluthrin DECATHLON 20WP	All greenhouse ornamentals	REI-12 hours MOA-group 3

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Mealybugs (cont.)			
	dinotefuran SAFARI	---	REI-12 hours MOA-group 4A
	fenpropathrin TAME 2.4EC	---	Tame is a RESTRICTED USE pesticide. REI-24 hours MOA-group 3
	flonicamid ARIA	---	Labeled for use only in greenhouses and interiorscapes. REI-12 hours MOA-group 9B
	horticultural oil SUNSPRAY ULTRA-FINE OIL	Many greenhouse ornamentals	REI-4 hours MOA-group M
	imidacloprid MARATHON 1% G MARATHON 60 WP MARATHON II	All greenhouse ornamentals	Do not overwater following drench or granular applications. Marathon II is labeled for foliar and broadcast applications. REI-12 hours MOA-group 4A
	insecticidal soap M-PEDE 49EC OLYMPIC INSECTICIDAL 25 EC	Many greenhouse ornamentals	REI-12 hours MOA-group M
	kinoprene ENSTAR II SE	Many greenhouse ornamentals	See label for plant damage information. REI-4 hours MOA-group 7A
	malathion Various formulations	See label.	REI-12 hours MOA-group 1B
	permethrin ASTRO	Marginal leaf burn may occur on dieffenbachia, salvia, and pteris ferns.	Direct application to blooms may cause browning of petals. REI-12 hours MOA-group 3
	pyrethrins PYRETHRUM TR	---	REI-12 hours MOA-group 3
	thiamethoxam FLAGSHIP	---	Flagship is a contact and systemic insecticide that moves in the leaf when sprayed or systemically throughout the plant when applied as a drench. With proper precautions, Flagship can be applied through chemigation systems. DO NOT exceed 8 ounces of product per acre per crop, whichever is shorter. REI-12 hours MOA-group 4A

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Mites			
<i>Cyclamen and Broad Mites</i>			
	abamectin AVID 0.15EC FLORA-MEK 0.15EC	All greenhouse ornamentals EXCEPT ferns.	DO NOT make consecutive applications of Avid. See label. Label includes two-spotted mites, southern red mites, and cyclamen and broad mites among others. Rate, Avid: 4 fl.oz/100 gal. REI-12 hours MOA-group 6
	chlorfenapyr PYLON	PHYTOTOXICITY IS LIKELY TO OCCUR to some varieties of carnations, dianthus, kalanchoe, poinsettia, roses, salvia, and zinnia.	REI-12 hours MOA-group 13
	dicofol KELTHANE 35WP	---	Applicators must be in enclosed cabs or cockpits. REI-48 hours MOA-group unknown
	fenpyroximate AKARI 5SC	---	DO NOT apply more than 10 gallons of spray per 1000 square feet per application. DO NOT apply more than 48 fluid ounces per crop cycle or per growing season, whichever is longer. Chemical family: phenoxyprazole group REI-12 hours MOA-group 21A
	pyridaben SANMITE	---	REI-12 hours MOA-group 21A
	spiromesifen JUDO	---	REI-12 hours MOA-group 23
<i>Two-Spotted Spidermites</i>			
	abamectin AVID 0.15EC FLORA-MEK 0.15EC	All greenhouse ornamentals EXCEPT ferns	DO NOT make consecutive applications of Avid. See label. Label includes two-spotted mites, southern red mites, and cyclamen and broad mites among others. Rate, Avid: 4 fl.oz/100 gal. REI-12 hours MOA-group 6
	acequinocyl SHUTTLE	---	DO NOT mix with pesticides containing the active ingredient fosetyl (e.g. Aliette). Label includes spruce spidermites. Rate: 6.4-12.8 fl.oz./100 gal. REI-12 hours MOA-group 20B

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Mites (cont.)			
<i>Two-Spotted Spidermites (cont.)</i>			
	<i>Beauveria bassiana</i> NATURALIS-L	---	Wait 48 hours before applying fungicides. REI-4 hours MOA-group M
	bifenazate FLORAMITE	---	REI-12 hours MOA-group unknown
	bifenthrin ATTAIN TR TALSTAR S	All greenhouse ornamentals	Apply foliar spray to upper and lower leaf surfaces. Talstar S is a RESTRICTED USE pesticide. REI-12 hours MOA-group 3
	chlorfenapyr PYLON	PHYTOTOXICITY IS LIKELY TO OCCUR to some varieties of carnations, dianthus, kalanchoe, poinsettia, roses, salvia, and zinnia.	REI-12 hours MOA-group 13
	chlorpyrifos DURAGUARD 20 ME	DO NOT use on kalanchoes.	Shake concentrate well before using. Duraguard is a RESTRICTED USE pesticide. REI-12 hours MOA-group 1B
	clofentezine OVATION	---	Two-spotted spidermites, European red mites, Pacific spidermites, yellow spidermites, McDaniel spidermites. REI-12 hours MOA-group 10A
	dicofol KELTHANE 35WP KELTHANE 50WP	---	Apply to upper and lower leaf surfaces. Applicators must be in enclosed cabs or cockpits. REI-48 hours MOA-group unknown

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Mites (cont.)			
<i>Two-Spotted Spidermites (cont.)</i>			
	etoxazole TETRASAN 5WDG	---	Labeled for control of spidermites, including citrus red mites, European red mites, Lewis spidermites, Pacific spidermites, southern red mites, spruce spidermites, two-spotted spidermites. Rate: 8-16 oz./1- gal. REI-12 hours MOA-group 10B
	fenbutatin-oxide PROMITE	---	Promite is a RESTRICTED USE pesticide. Handlers must be checked every 2 hours when using this product. Label includes spruce spider mite, <i>oligonychus</i> spp.(e.g. southern red mites), and two-spotted spidermites. REI-48 hours MOA-group 12
	fenpropathrin TAME 2.4EC	Same as listed for aphids	Tame is a RESTRICTED USE pesticide. Spray upper and lower leaf surfaces. Repeat in 7 to 10 days. REI-24 hours MOA-group 3
	fenpyroximate AKARI 5SC	---	DO NOT apply more than 10 gallons of spray per 1000 square feet per application. DO NOT apply more than 48 fluid ounces per crop cycle or per growing season, whichever is longer. Chemical family: phenoxy pyrazole group REI-12 hours MOA-group 21A
	fluvalinate MAVRIK 2F	All greenhouse ornamentals	Use higher rates for mite control. REI-12 hours MOA-group 3

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Mites (cont.)			
<i>Two-Spotted Spidermites (cont.)</i>			
	horticultural oil SUNSPRAY ULTRA-FINE OIL	Same as listed for aphids	REI-4 hours MOA-group M
	insecticidal soap	Many greenhouse ornamentals	REI-12 hours MOA-group M
	methiocarb MEASUROL 75W	---	Measurol 75W is a RESTRICTED USE pesticide. Performance may be reduced when the spray solution has a pH greater than 7. Handlers must be checked every 2 hours when using this product. REI-24 hours MOA-group 1A
	pyridaben SANMITE	---	REI-12 hours MOA-group 21A
	spinosad CONSERVE SC	---	Control of spidermites in certain research trials has been variable. The addition of a non-ionic spray adjuvant has been shown to increase efficacy. REI-4 hours MOA-group 5
	spiromesifen JUDO	---	Label includes two-spotted spider, southern red, Lewis, spruce spider, and cyclamen and broad mites as well as others. Rate: 2-4 fl.oz./100 gal. REI-12 hours MOA-group 23
Scale Insects			
	acephate ORTHENE TT&O ORTHENE 1300TR	Anthurium, cactus, foliage plants Same as listed for aphids	Repeat in 2 to 3 weeks. See label for plant damage information. REI-24 hours MOA-group 1B
	azadirachtin AZATIN XL ORNAZIN	---	Complete coverage is important but avoid excessive runoff. Use a fine spray; can also be applied as a drench. Azatin REI-4 hours Ornazin REI-12 hours MOA-group unknown
	buprofezin TALUS	---	Rate: 14 oz./100 gal. REI-12 hours MOA-group 16

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Scale Insects (cont.)			
	chlorpyrifos DURAGUARD 20 ME	Many greenhouse ornamentals DO NOT use on kalanchoes.	Plant damage information listed on label. Duraguard is a RESTRICTED USE pesticide. REI-24 hours MOA-group 1B
	dinotefuran SAFARI	---	REI-12 hours MOA-group 4A
	fenoxycarb PRECLUDE TR	---	Aerosol fogger This is an insect growth regulator. REI-12 hours MOA-group 7B
	horticultural oil SUNSPRAY ULTRA- FINE OIL	See label.	REI-4 hours MOA-group M
	imidacloprid MARATHON 1% G MARATHON 60 WP MARATHON II	All greenhouse ornamentals	Marathon II is labeled for foliar and broadcast applications. REI-12 hours MOA-group 4A
	insecticidal soap M-PEDE OLYMPIC INSECTI- CIDAL 25 EC	---	REI-12 hours MOA-group M
	kinoprene ENSTAR II 5E	Many greenhouse ornamentals	See label for plant damage information. REI-4 hours MOA-group 7A
	pyrethrins PYRETHRUM TR	---	REI-12 hours MOA-group 3
	pyriproxyfen DISTANCE	---	REI-12 hours MOA-group 7C
	thiamethoxam FLAGSHIP	---	Flagship is a contact and systemic insecticide that moves in the leaf when sprayed or systemically throughout the plant when applied as a drench. With precaution, Flagship can be applied through chemigation systems. DO NOT exceed 8 ounces of thiamethoxam per acre per year or crop, whichever is shorter. REI-12 hours MOA-group 4A

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Shoreflies			
	azadirachtin AZATIN XL ORNAZIN	---	Apply as a soil drench for larvae. Thoroughly wet the first 1 to 1.5 inches of soil in containers. Also treat under benches and other places where algae build up. REI-4 hours MOA-group unknown
	cyromazine CITATION 75WP	---	Citation 75WP is labeled for dipterous leafminers only. REI-12 hours MOA-group 17
Slugs and Snails			
	iron phosphate SLUGGO-AG	---	Rate: 24-44 lb./A REI-0 hours
	metaldehyde baits	All greenhouse ornamentals	REI-12 hours
	methiocarb MESUROL 75W MESUROL PRO	---	Mesuro 75W is a RESTRICTED USE pesticide. Performance may be reduced when the spray solution has a pH greater than 7. Handlers must be checked every 2 hours when using this product. REI-24 hours MOA-group 1A
Sowbugs/Pillbugs			
	cyfluthrin DECATHLON 20WP	---	REI-12 hours MOA-group 3
	malathion WP	---	Apply to growing medium. REI-12 hours MOA-group 1B
Thrips			
	abemectin AVID 0.15EC FLORA-MEK 0.15EC	---	For suppression of pest populations. Rate, Avid: 8 fl.oz./100 gal. REI-12 hours MOA-group 6
	acephate ORTHENE TT&O ORTHENE TT&O SPRAY 97 ORTHENE 1300TR	Same as listed for aphids	See label for plant damage information. REI-24 hours MOA-group 1B
	acetamiprid TRISTAR	---	REI-24 hours MOA-group 4A
	azadirachtin AZATIN XL ORNAZIN	---	Complete coverage is important but avoid excessive runoff. Use a fine spray; can also be applied as a drench. Azatin REI-4 hours Ornazin REI-12 hours MOA-group unknown

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Thrips (cont.)			
	<i>Beauveria bassiana</i> BOTANIGARD NATURALIS-L	---	Wait 48 hours before applying fungicides. REI-4 hours MOA-group M
	bifenthrin ATTAIN TR TALSTAR S	---	Talstar S is a RESTRICTED USE pesticide. REI-12 hours MOA-group 3
	chlorpyrifos DURAGUARD 20 ME	Many greenhouse ornamentals DO NOT use on kalanchoes.	See label for plant damage information. Duraguard is a RESTRICTED USE pesticide. REI-24 hours MOA-group 1B
	cyfluthrin DECATHLON 20WP	All greenhouse ornamentals	REI-12 hours MOA-group 3
	dinotefuran SAFARI	---	Drench application may be more effective than spray for control of thrips. REI-12 hours MOA-group 4A
	fenoxycarb PRECLUDE TR	---	Fenoxycarb is an insect growth regulator. REI-12 hours MOA-group 7B
	flonicamid ARIA	---	Aria is labeled for use only in greenhouses and interiorscapes. For suppression of thrips in flowers. REI-12 hours MOA-group 9B
	fluvalinate MAVRIK 2F	All greenhouse ornamentals	REI-12 hours MOA-group 3
	imidacloprid MARATHON 1% G MARATHON 60 WP MARATHON II	All greenhouse ornamentals	Apply when cuttings are well established. Do not overwater. Marathon II is labeled for foliar and broadcast applications. REI-12 hours MOA-group 4A
	insecticidal soap OLYMPIC INSECTI- CIDAL 25 EC	---	REI-12 hours MOA-group M
	methiocarb MESUROL 75W	---	Mesurool 75W is a RESTRICTED USE pesticide. Performance may be reduced when the spray solution has a pH greater than 7. Handlers must be checked every 2 hours when using this product. REI-24 hours MOA-group 1A

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Thrips (cont.)			
	novaluron PEDESTAL	DO NOT apply to poinsettias.	Resistance management restrictions. REI-12 hours MOA-group 15
	pyrethrins PYRETHRUM TR	---	REI-12 hours MOA-group 3
	pyrethrum + rotenone PYRELLIN EC	---	REI-12 hours MOA-groups 3 and 21B
	spinosad CONSERVE SC	---	REI-4 hours MOA-group 5
Whiteflies			
	abemectin AVID 0.15EC FLORA-MEK 0.15EC	---	For suppression of pest populations. Rate, Avid: 8 fl.oz./100 gal. REI-12 hours MOA-group 6
	acephate ORTHENE TT&O ORTHENE TT&O SPRAY 97 ORTHENE 1300TR	Anthurium, cacti, foliage plants, orchids, poinsettia	Read label for plant damage information. REI-24 hours MOA-group 1B
	acetamiprid TRISTAR	---	REI-24 hours MOA-group 4A
	azadirachtin AZATIN XL ORNAZIN	POTTED FLOWERING: African violet, begonia, chrysanthemum, cineraria, crossandra, cyclamen, Easter lily, exacum, fuchsia, gardenia, geranium, gerbera, gloxinia, hibiscus, hydrangea, impatiens, lantana, poinsettia (see label for varieties trialed). FOLIAGE: aglaonema, anthurium, aphelandra, dieffenbachia, dracaena, ficus benamina, ficus pumula, palm-NB. BEDDING: ageratum, alyssum, begonia, brachycome, celosia, coleus, dahlia, delphinium, dianthus, dusty miller, gazania, impatiens, lobelia, marigold, nemesia, pansy, periwinkle, petunia, portulaca, salvia, snapdragon, tobacco, torenia, verbena, zinnia.	Use before population levels become high. See label. Azatin REI-4 hours Ornazin REI-12 hours MOA-group unknown
	<i>Beauveria bassiana</i> BOTANIGARD NATURALIS-L	---	Wait 48 hours before applying fungicides. BotaniGard REI-12 hours Naturalis-L- 4 hours MOA-group M
	bifenthrin ATTAIN TR TALSTAR S	All greenhouse ornamentals	Talstar S is a RESTRICTED USE pesticide. REI-12 hours MOA-group 3
	buprofezin TALUS	---	Rate: 6 oz./100 gal. REI-12 hours MOA-group 16

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Whiteflies (cont.)			
	chlorpyrifos DURAGUARD 20 ME	DO NOT use on kalanchoes.	Shake concentrate well before using. Duraguard is a RESTRICTED USE pesticide. REI-24 hours MOA-group 1B
	cyfluthrin DECATHLON 20WP	All greenhouse ornamentals	REI-12 hours MOA-group 3
	diflubenzuron ADEPT 25 WSP	---	Read label and follow directions carefully to avoid plant injury. REI-12 hours MOA-group 15
	dinotefuran SAFARI	---	REI-12 hours MOA-group 4A
	fenoxycarb PRECLUDE TR	---	Preclude TR is an insect growth regulator. REI-12 hours MOA-group 7B
	fenpropathrin TAME 2.4EC	Same as listed for aphids	Tame is a RESTRICTED USE pesticide. REI-24 hours MOA-group 3
	flonicamid ARIA	---	Aria is labeled for use only in greenhouses and interiorscapes. Suppression of silverleaf whitefly. REI-12 hours MOA-group 9B
	fluvalinate AQUAFLOW MAVRIK	All greenhouse ornamentals	REI-12 hours MOA-group 3
	horticultural oil SUNSPRAY ULTRA-FINE OIL	Same as listed for aphids	REI-4 hours MOA-group M
	imidacloprid MARATHON 1% G MARATHON 60 WSP MARATHON II	All greenhouse ornamentals	Apply when cuttings are well established. Do not overwater. Marathon II is labeled for foliar and broadcast applications. REI-12 hours MOA-group 4A
	insecticidal soap M-PEDE SOAP OLYMPIC INSECTICIDAL SOAP	Many greenhouse ornamentals	Wet foliage thoroughly. REI-12 hours MOA-group M
	kinoprene ENSTAR II	Many greenhouse ornamentals	See label for plant damage information. REI-4 hours MOA-group 7A

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Whiteflies (cont.)			
	novaluron PEDESTAL	DO NOT apply to poinsettias.	Observe resistance management restrictions. REI–12 hours MOA–group 15
	permethrin ASTRO	Marginal leaf burn may occur on dieffenbachia, salvia, and pteris ferns.	Direct application to blooms may cause browning of petals. REI–12 hours MOA–group 3
	pymetrozine ENDEAVOR	---	REI–12 hours MOA–group 9A
	pyridaben SANMITE	---	REI–12 hours MOA–group 21A
	pyrethrum PT1200 AEROSOL FOG	Many greenhouse ornamentals, arum lily, azalea, begonia, bird-of-paradise, Chinese fan palm, coleus, crane lily, dieffenbachia, English ivy, foundation palm, gardenia, geranium, India rubber tree, Norfolk Island pine, poinsettia, palms, snapdragon, wandering jew, zephyr lily	See label. MOA–group 3
	pyrethrum + rotenone PYRELLIN EC	---	REI–12 hours MOA–groups 3 and 21B
	pyriproxyfen DISTANCE	---	REI–12 hours MOA–group 7C
	spiromesifen JUDO	---	Rate: 2-4 fl.oz./100 gal. REI–12 hours MOA–group 23
	thiamethoxam FLAGSHIP	---	Flagship is a contact and systemic insecticide that moves in the leaf when sprayed or systemically throughout the plant when applied as a drench. With precaution, Flagship can be applied through chemigation systems. DO NOT use more than 8 ounces of product per acre per year or crop, whichever is shorter. REI–12 hours MOA–group 4A

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For more information, contact your county Extension office. Visit <http://www.aces.edu/counties> or look in your telephone directory under your county's name to find contact information.

Use pesticides **only** according to the directions on the label. Follow all directions, precautions, and restrictions that are listed. Do not use pesticides on plants that are not listed on the label.

The pesticide rates in this publication are recommended **only** if they are registered with the Environmental Protection Agency or the Alabama Department of Agriculture and Industries. If a registration is changed or canceled, the rate listed here is no longer recommended. Before you apply **any** pesticide, check with your county Extension agent for the latest information.

Trade names are used **only** to give specific information. The Alabama Cooperative Extension System does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.

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