



INSECT CONTROL Greenhouses

Commercial Greenhouses Insect Control*

Insect	Insecticide and Formulation**	Registered Crops	Comments***
Aphids			
	acephate ORTHENE TT&O SPRAY 97 ACEPHATE PRO 75 1300 ORTHENE TR	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.
	acetamiprid TRISTAR		REI-24 hours.
	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.
	<i>Beauveria bassiana</i> BOTANIGARD ES BOTANIGARD WP		Wait 48 hours before applying fungicides. REI-12 hours.

*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.

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. REI-12 hours.
	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.
	chlorpyrifos + cyfluthrin DURAPLEX TR		REI-12 hours.
	cyfluthrin DECATHLON 20WP	All greenhouse ornamentals	Read label for use information. REI-12 hours.
	dichlorvos DDVP FUMIGATOR		Applicators must be observed by a supervisor every 2 hours during application. REI-See WPD ventilation criteria for greenhouses.
	dinotefuran SAFARI		Drench application may be more effective than spray for control of aphids. REI-12 hours.
	endosulfan THIODAN SMOKE	All greenhouse ornamentals	Applicators must be observed by a supervisor every 2 hours during application. REI-24 hours.
	fenoxycarb PRECLUDE TR		Fenoxycarb is an insect growth regulator. REI-12 hours.
	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.
	flonicamid ARIA		Labeled for use only in greenhouses and interiorscapes. REI-12 hours.
	fluvalinate MAVRIK 2F	All greenhouse ornamentals	REI-12 hours.
	garlic extract ALLITYN		Allityn is an insect repellent. Rate: 4- 32 fl. oz./100 gal. REI-4 hours.
	horticultural oil ULTRA-FINE OIL	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.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Aphids (cont.)			
	imidacloprid MARATHON 1% G MARATHON 60 WP MARATHON II	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.
	insecticidal soap M-PEDE OLYMPIC INSECTI- CIDAL SOAP	Many greenhouse ornamentals	Wet foliage thoroughly. REI-12 hours.
	kinoprene ENSTAR II SEC	Many greenhouse ornamentals	See label for plant damage information. REI-4 hours.
	methiocarb MESUROL 75W		Mesurool 75W is a RESTRICTED USE pesticide. Performance may be reduced when the spray solution has a pH greater than 7. The pH of the spray solution must be corrected by the addition of a suitable buffering or acidifying agent for optimum activity. Handlers must be checked every 2 hours when using this product. REI-24 hours.
	neem oil TRIACT 70		REI-4 hours.
	nicotine FULEX NICOTINE FUMIGATOR	Many greenhouse ornamentals	Nicotine is a RESTRICTED USE pesticide. Applicators must be observed by a supervisor every 2 hours during application. REI-4 hours minimum; see label for REI specifications.
	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.
	pymetrozine ENDEAVOR		REI-12 hours.
	pyrethrins PYRETHRUM TR		REI-12 hours.
	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.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Caterpillars			
	acephate ORTHENE TT&O SPRAY 97 1300 ORTHENE TR	Same as listed for aphids	REI–24 hours.
	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.
	<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.
	<i>Beauveria bassiana</i> NATURALIS-O		Wait 48 hours before applying fungicides. REI–4 hours.
	bifenthrin ATTAIN TR TALSTAR S	All greenhouse ornamentals	Talstar S is a RESTRICTED USE pesticide. REI–12 hours.
	chlorfenapyr PYLON	PHYTOTOXICITY IS LIKELY TO OCCUR to some varieties of carnations, dianthus, kalanchoe, poinsettia, roses, salvia, and zinnia.	REI–12 hours.
	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.
	cyfluthrin DECATHLON 20WP	All greenhouse ornamentals	REI–12 hours.
	diflubenzuron ADEPT 25 WSP		Read label and follow directions carefully to avoid plant injury. REI–12 hours.
	fenpropathrin TAME 2.4EC	Same as listed for aphids	Tame is a RESTRICTED USE pesticide. REI–24 hours.
	fluvalinate MAVRIK 2F	All greenhouse ornamentals	REI–12 hours.
	garlic extract ALLITYN		Allityn is an insect repellent. Rate: 4–32 fl. oz./100 gal. REI–4 hours.
	insecticidal soap OLYMPIC INSECTICIDAL 25 EC		REI–12 hours.
	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.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Caterpillars (cont.)			
	pyrethrins PYRETHRUM TR		REI-12 hours.
	spinosad CONSERVE SC		REI-4 hours.
Fungus Gnats			
<i>Larvae</i>			
	acetamiprid TRISTAR		REI-24 hours.
	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.
	<i>Bacillus thuringiensis israelensis</i> GNATROL	All greenhouse ornamentals	Apply as a drench. REI-4 hours.
	chlorfenapyr PYLON	PHYTOTOXICITY IS LIKELY TO OCCUR to some varieties of carnations, dianthus, kalanchoe, poinsettia, roses, salvia, and zinnia.	REI-12 hours.
	chlorpyrifos DURAGUARD 20 ME	DO NOT use on kalanchoes.	Shake concentrate well before using. Duraguard is a RESTRICTED USE pesticide. REI-24 hours.
	cyromazine CITATION 75WP		Repeat application at 7- to 14-day intervals as necessary for control. REI-12 hours.
	diflubenzuron ADEPT	Greenhouse/shadehouse ornamentals	Soil drench. Read and follow label directions carefully to avoid plant injury. REI-12 hours.
	dinotefuran SAFARI		REI-12 hours.
	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.
	kinoprene ENSTAR II 5EC	Many greenhouse ornamentals	See label for plant damage information. REI-4 hours.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Fungus Gnats (cont.)			
<i>Larvae (cont.)</i>			
	pyriproxyfen DISTANCE		REI-12 hours.
	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.
<i>Adults</i>			
	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.
Leafminers			
	abamectin AVID 0.15EC FLORA-MEK 0.15EC	All greenhouse ornamentals	Repeat every 7 days as needed. REI-12 hours.
	acephate ORTHENE 1300 TR		REI-24 hours.
	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.
	bifenthrin TALSTAR S		Talstar S is a RESTRICTED USE pesticide. REI-12 hours.
	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.
	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.
	dinotefuran SAFARI		REI-12 hours.
	garlic extract ALLITYN		Allityn is an insect repellent. REI-4 hours.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Leafminers (cont.)			
	malathion Various formulations		REI-12 hours.
	novaluron PEDESTAL	DO NOT apply to poinsettias.	For population suppression ONLY . Resistance management restrictions. REI-12 hours.
	permethrin ASTRO		REI-12 hours.
	spinosad CONSERVE SC		Adding a non-ionic spray adjuvant has been shown to increase efficacy. REI-4 hours.
Mealybugs			
	acephate ORTHENE TT&O ORTHENE TT&O SPRAY 97 ORTHENE 1300 TR	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.
	acetamiprid TRISTAR		REI-24 hours.
	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.
	<i>Beauveria bassiana</i> NATURALIS-O		Wait 48 hours before applying fungicides. REI-4 hours.
	bifenthrin ATTAIN TR TALSTAR S	All greenhouse ornamentals	Talstar S is a RESTRICTED USE pesticide. REI-12 hours.
	buprofezin TALUS		Rate: 12 oz./100 gal. REI-12 hours.
	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.
	cyfluthrin DECATHLON 20WP	All greenhouse ornamentals	REI-12 hours.
	dichlorvos DDVP FUMIGATOR		Applicators must be observed by a supervisor every 2 hours during application. REI-See WPS ventilation criteria for greenhouses.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Mealybugs (cont.)			
	dinotefuran SAFARI		REI-12 hours.
	fenpropathrin TAME 2.4EC		Tame is a RESTRICTED USE pesticide. REI-24 hours.
	flonicamid ARIA		Labeled for use only in greenhouses and interiorscapes. REI-12 hours.
	garlic extract ALLITYN		Allityn is an insect repellent. Rate: 4- 32 fl. oz./100 gal. REI-4 hours.
	horticultural oil ULTRA-FINE OIL	Many greenhouse ornamentals	REI-4 hours.
	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.
	insecticidal soap M-PEDE 49EC OLYMPIC INSECTICIDAL 25 EC	Many greenhouse ornamentals	REI-12 hours.
	kinoprene ENSTAR II SE	Many greenhouse ornamentals	See label for plant damage information. REI-4 hours.
	malathion Various formulations	See label.	REI-12 hours.
	nicotine formulations FULEX NICOTINE FUMIGATOR	All greenhouse ornamentals	Nicotine is a RESTRICTED USE pesticide. Applicators must be observed by a supervisor every 2 hours during application. REI-4 hours minimum; see label for REI specifications.
	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.
	pyrethrins PYRETHRUM TR		REI-12 hours.
	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.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Mites			
<i>Cyclamen and Broad Mites</i>			
	chlorfenapyr PYLON	PHYTOTOXICITY IS LIKELY TO OCCUR to some varieties of carnations, dianthus, kalanchoe, poinsettia, roses, salvia, and zinnia.	REI-12 hours.
	pyradaben SANMITE		REI-12 hours.
	spiromesifen JUDO		REI-12 hours.
<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.
	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.
	<i>Beauveria bassiana</i> NATURALIS-O		Wait 48 hours before applying fungicides. REI-4 hours.
	bifenazate FLORAMITE		REI-12 hours.
	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.
	chlorfenapyr PYLON	PHYTOTOXICITY IS LIKELY TO OCCUR to some varieties of carnations, dianthus, kalanchoe, poinsettia, roses, salvia, and zinnia.	REI-12 hours.
	chlorpyrifos DURAGUARD 20 ME	DO NOT use on kalanchoes.	Shake concentrate well before using. Duraguard is a RESTRICTED USE pesticide. REI-12 hours.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Mites (cont.)			
<i>Two-Spotted Spidermites (cont.)</i>			
	clofentezine OVATION		Two-spotted spidermites, European red mites, Pacific spidermites, yellow spidermites, McDaniel spidermites. REI-12 hours.
	dichlorvos DDVP FUMIGATOR		Applicators must be observed by a supervisor every 2 hours during application. REI-See WPD ventilation criteria for greenhouses.
	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.
	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.
	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.
	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: phenoxypropylazole group REI-12 hours.
	fluvalinate MAVRIK 2F	All greenhouse ornamentals	Use higher rates for mite control. REI-12 hours.
	garlic extract ALLITYN		Allityn is an insect repellent. Rate: 4- 32 fl. oz./100 gal. REI-4 hours.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Mites (cont.)			
<i>Two-Spotted Spidermites (cont.)</i>			
	horticultural oil ULTRA-FINE OIL	Same as listed for aphids	REI-4 hours.
	insecticidal soap	Many greenhouse ornamentals	REI-12 hours.
	methiocarb MEASUROL 75W		Mesuro 75W is a RESTRICTED USE pesticide. Performance may be reduced when the spray solution has a pH greater than 7. The pH of the spray solution must be corrected by the addition of a suitable buffering or acidifying agent for optimum activity. Handlers must be checked every 2 hours when using this product. REI-24 hours.
	nicotine FULEX NICOTINE FUMIGATOR	All greenhouse ornamentals	Nicotine is a RESTRICTED USE pesticide. Applicators must be observed by a supervisor every 2 hours during application. REI-4 hours minimum; see label for REI specifications.
	pyradaben SANMITE		REI-12 hours.
	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.
	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.
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.
	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.
	buprofezin TALUS		Rate: 14 oz./100 gal. REI-12 hours.

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.
	dinotefuran SAFARI		REI–12 hours.
	fenoxycarb PRECLUDE TR		This is an insect growth regulator. REI–12 hours.
	horticultural oil ULTRA-FINE OIL	See label.	REI–4 hours.
	imidacloprid MARATHON 1% G MARATHON 60 WP MARATHON II	All greenhouse ornamentals	Marathon II is labeled for foliar and broadcast applications. REI–12 hours.
	insecticidal soap M-PEDE OLYMPIC INSECTI- CIDAL 25 EC		REI–12 hours.
	kinoprene ENSTAR II 5E	Many greenhouse ornamentals	See label for plant damage information. REI–4 hours.
	pyrethrins PYRETHRUM TR		REI–12 hours.
	pyriproxyfen DISTANCE		REI–12 hours.
	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.
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.
	cyromazine CITATION 75WP		Citation 75WP is labeled for dipterous leafminers only. REI–12 hours.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Slugs and Snails			
	garlic extract ALLITYN BIOREPEL		Allityn is a repellent. Rate, Allityn: 4- 32 fl. oz./100 gal. Rate, Biorepel: 1 gal./100 gal. REI-4 hours.
	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		Mesurol 75W is a RESTRICTED USE pesticide. Performance may be reduced when the spray solution has a pH greater than 7. The pH of the spray solution must be corrected by the addition of a suitable buffering or acidifying agent for optimum activity. Handlers must be checked every 2 hours when using this product. REI-24 hours.
Sowbugs/Pillbugs			
	cyfluthrin DECATHLON 20WP		REI-12 hours.
	malathion WP		Apply to growing medium. REI-12 hours.
Thrips			
	abemectin AVID 0.15EC FLORA-MEK 0.15EC		For suppression of pest populations. Rate, Avid: 8 fl.oz./100 gal. REI-12 hours.
	acephate ORTHENE TT&O ORTHENE TT&O SPRAY 97 ORTHENE 1300 TR	Same as listed for aphids	See label for plant damage information. REI-24 hours.
	acetamiprid TRISTAR		REI-24 hours.
	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.
	<i>Beauveria bassiana</i> BOTANIGARD ES NATURALIS-O		Wait 48 hours before applying fungicides. BotaniGard REI-12 hours. Naturalis-O REI-4 hours.
	bifenthrin ATTAIN TR TALSTAR S		Talstar S is a RESTRICTED USE pesticide. REI-12 hours.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Thrips (cont.)			
	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.
	cyfluthrin DECATHLON 20WP	All greenhouse ornamentals	REI–12 hours.
	dinotefuran SAFARI		Drench application may be more effective than spray for control of thrips. REI–12 hours.
	fenoxycarb PRECLUDE TR		Fenoxycarb is an insect growth regulator. REI–12 hours.
	flonicamid ARIA		Aria is labeled for use only in greenhouses and interiorscapes. For suppression of thrips in flowers. REI–12 hours.
	fluvalinate MAVRIK 2F	All greenhouse ornamentals	REI–12 hours.
	garlic extract ALLITYN BIOREPEL		Allityn is an insect repellent. Rate, Allityn: 4- 32 fl. oz./100 gal. Rate, Biorepel: 1 gal.100 gal. REI–4 hours.
	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.
	insecticidal soap OLYMPIC INSECTI- CIDAL 25 EC		REI–12 hours.
	methiocarb MESUROL 75W		Mesuro 75W is a RESTRICTED USE pesticide. Performance may be reduced when the spray solution has a pH greater than 7. The pH of the spray solution must be corrected by the addition of a suitable buffering or acidifying agent for optimum activity. Handlers must be checked every 2 hours when using this product. REI–24 hours.
	nicotine formulations FULEX NICOTINE FUMIGATOR	All greenhouse ornamentals	Nicotine is a RESTRICTED USE pesticide. Applicators must be observed by a supervisor every 2 hours during application. REI–4 hours minimum; see label for REI specifications.

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.
	pyrethrins PYRETHRUM TR		REI–12 hours.
	pyrethrum + rotenone PYRELLIN EC		REI–12 hours.
	spinosad CONSERVE SC		REI–4 hours.
Whiteflies			
	abemectin AVID 0.15EC FLORA-MEK 0.15EC		For suppression of pest populations. Rate, Avid: 8 fl.oz./100 gal. REI–12 hours.
	acephate ORTHENE TT&O ORTHENE TT&O SPRAY 97 ORTHENE 1300 TR	Anthurium, cacti, foliage plants, orchids, poinsettia	Read label for plant damage information. REI–24 hours.
	acetamiprid TRISTAR		REI–24 hours.
	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 benjamina, 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.
	<i>Beauveria bassiana</i> BOTANIGARD ES NATURALIS-O		Wait 48 hours before applying fungicides. BotaniGard REI–12 hours. Naturalis-O — 4 hours.
	bifenthrin ATTAIN TR TALSTAR S	All greenhouse ornamentals	Talstar S is a RESTRICTED USE pesticide. REI–12 hours.
	buprofezin TALUS		Rate: 6 oz./100 gal. REI–12 hours.
	chlorpyrifos DURAGUARD 20 ME	DO NOT use on kalanchoes.	Shake concentrate well before using. Duraguard is a RESTRICTED USE pesticide. REI–24 hours.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Whiteflies (cont.)			
	cyfluthrin DECATHLON 20WP	All greenhouse ornamentals	REI-12 hours.
	dichlorvos DDVP FUMIGATOR		Applicators must be observed by a supervisor every 2 hours during application. REI-See WPD ventilation criteria for greenhouses.
	diflubenzuron ADEPT 25 WSP		Read label and follow directions carefully to avoid plant injury. REI-12 hours.
	dinotefuran SAFARI		REI-12 hours.
	endosulfan THIODAN SMOKE	Many greenhouse ornamentals	Handlers must be checked every 2 hours when using this product. REI-24 hours.
	fenoxycarb PRECLUDE TR		Preclude TR is an insect growth regulator. REI-12 hours.
	fenpropathrin TAME 2.4EC	Same as listed for aphids	Tame is a RESTRICTED USE pesticide. REI-24 hours.
	flonicamid ARIA		Aria is labeled for use only in greenhouses and interiorscapes. Suppression of silverleaf whitefly. REI-12 hours.
	fluvalinate AQUAFLOW MAVRIK	All greenhouse ornamentals	REI-12 hours.
	garlic extract ALLITYN		Allityn is an insect repellent. Rate: 4- 32 fl. oz./100 gal. REI-4 hours.
	horticultural oil ULTRA-FINE OIL	Same as listed for aphids	REI-4 hours.
	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.
	insecticidal soap M-PEDE SOAP OLYMPIC INSECTI- CIDAL SOAP	Many greenhouse ornamentals	Wet foliage thoroughly. REI-12 hours.
	kinoprene ENSTAR II	Many greenhouse ornamentals	See label for plant damage information. REI-4 hours.

Insect	Insecticide and Formulation	Registered Crops	Comments
Commercial Ornamentals: Insect Control—Greenhouses			
Whiteflies (cont.)			
	nicotine formulations FULEX NICOTINE FUMIGATOR	All greenhouse ornamentals	Nicotine is a RESTRICTED pesticide. Applicators must be observed by a supervisor every 2 hours during application. REI-4 hours minimum; see label for REI specifications.
	novaluron PEDESTAL	DO NOT apply to poinsettias.	Observe resistance management restrictions. REI-12 hours.
	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.
	pymetrozine ENDEAVOR		REI-12 hours.
	pyradaben SANMITE		REI-12 hours.
	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.
	pyrethrum + rotenone PYRELLIN EC		REI-12 hours.
	pyriproxyfen DISTANCE		REI-12 hours.
	spiromesifen JUDO		Rate: 2-4 fl.oz./100 gal. REI-12 hours.
	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.

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For more information, call your county Extension office. It is listed in your telephone directory under your county's name.

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 cancelled, 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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