

INSECT CONTROL FOR ORNAMENTALS GROWN IN INTERIOR PLANTSCAPES

Note: People without proper application protective clothing must not enter treated area until plants are dry or as stipulated on the label. If possible, remove infested plants from living and eating areas prior to spray application. Place plants outdoors or in an area not likely to come in contact with people, pets, or food while spraying and while plants are wet. In most situations, plants can be returned to original location when they are dry. If plants cannot be removed, follow label precautions.

Phytotoxicity (damage to the plant as a result of the application of a chemical) is an important consideration in controlling pests of ornamentals. Phytotoxicity is generally expressed as damage to the leaves, flowers, or stems and is observed as “burn” (browning of tissue), “chlorosis” (yellowing or bleaching of tissue), or modification of growth by deformation or stunting. There are many species and cultivars of ornamental plants with varying sensitivity to chemicals. Other environmental conditions, such as your particular growing conditions, will also affect phytotoxicity. You are encouraged to evaluate a pesticide for phytotoxicity on a few plants under your particular conditions before treating all plants.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	Amount Per Gallon	Comments
Aphid	<i>Beauveria bassiana</i>			
	BotaniGard ES	0.5-1 lb	0.08-1.6 oz	
	Naturalis-O	30-100 fl oz	0.30-1.0 fl oz	
	clothianidin			Apply as a full-coverage foliar spray or a drench. See label for drench rates. 12 hours restricted entry interval.
	Arena 50 WDG	0.63-1.26 oz		
	cyfluthrin (Decathlon)	1.3-1.9 oz	1/4 tsp	Follow label directions.
	flonicamid 50 WDG			Repeat application every 7-28 days as necessary. 12 hours restricted entry interval.
	Aria 0.7 oz package	1-6 packets (0.7-4.3 oz)		
	fluvalinate (Mavrik)	4-10 oz	1/2-1 tsp	Follow label directions.
	horticultural oil	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pest to be effective.
	Sunspray Ultrafine			
	Saf-T-Side			
	Triact 90EC			
	imidacloprid			Per label directions.
	Merit 75WP			
	Merit 75WPS			
	Marathon II			
	insecticidal soap (M-Pede)	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pests to be effective. Repeat spray 3 times at 5- to 7-day interval. Soap could make floor slippery.
<i>Isaria fumosorosea</i>	14-28 oz	0.14-0.28 oz		
Preferal				
Naturalis-O	30-100 fl oz	0.30-1 fl oz		
pymetrozine (Endeavor)	2-5 oz	1/4-1/2 tsp	Follow label directions.	
pyriproxyfen (Distance)	6-8 fl oz	0.02 oz (0.6 mL)	Follow label directions.	
s-kinoprene			Follow label directions.	
Enstar 5E	6-10 oz	1/2 tsp		
spirotetramat			See label for drench instructions. 24-hour restricted entry interval.	
Kontos 2F	1.7 fl oz			
thiamethoxam			Reapply as needed but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.	
Flagship 25WG	4-8.5 oz	0.04-0.085 oz		
Caterpillars (leaf feeding)	chlorantraniliprole (Acelepryn)	1.0-16.0 fl oz		Foliar application only. Follow label directions.

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Clearwing Borers	chlorantraniliprole (Acelepryn)	4.0-32 fl oz		Bark treatment application only. Follow label directions.	
Fungus Gnats	<i>Bacillus thuringiensis</i>	16-32 oz	1-2 tsp	For light infestation.	
	Gnatrol	64-128 oz	4-8 tsp	For heavy infestation. Follow label directions.	
	cyromazine			Follow label directions.	
	Citation 75% WP	2.66 oz	1/2 tsp		
	diflubenzuron		0.04-0.08 (1-2 grams)	Follow label directions.	
	Adept 25WSB	16-24 oz			
	pyriproxyfen (Distance)	3-6 fl oz	0.02 (0.6 mL)	Follow label directions.	
	s-kinoprene			Follow label directions.	
Enstar II 5E	6-10 oz	1/2 tsp			
<i>Steinemema feltiae</i>	Entonem, NemaShield, Nemasys, Scan Mask			Follow label directions.	
thiamethoxam	Flagship 25WG	4-8.5 oz	0.04-0.085 oz	Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.	
Lace Bug	chlorantraniliprole (Acelepryn)			Soil treatment only. Follow label directions.	
	thiamethoxam	Flagship 25WG	4-8.5 oz	0.04-0.085 oz	Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Leafminer (Birch leafminer)	chlorantraniliprole (Acelepryn)			Soil treatment only. Follow label directions.	
	thiamethoxam	Flagship 25WG	4-8.5 oz	0.04-0.085 oz	Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Mealybug	<i>Beauveria bassiana</i>	BotaniGard ES	0.5-1 lb	0.08-1.6 oz	
	clothianidin	Arena 50 WDG	0.9-1.26 oz		Apply as a full-coverage foliar spray or a drench. See label for drench rates. 12 hours restricted entry interval.
	cyfluthrin (Decathlon)		1.3-1.9 oz	1/4 tsp	Follow label directions.
	dinotefuran	Safari 20 SG		1/2-1 tsp	Also effective on armored scale.
	flonicamid 50 WDG	Aria 0.7 oz package	1-6 packets (0.7-4.3 oz)		Repeat application every 7-28 days as necessary. 12 hours restricted entry interval.
	horticultural oils	Sunspray ultrafine	1%-2%	1%-2%	Care must be taken because some plants are sensitive to oils. Thorough coverage is necessary, but do not overapply. Use fine spray.
		Saf-T-Side			
		Triact 90EC			
	imidacloprid	Merit 75WP		Follow label directions.	
		Merit 75 WSP			
		Marathon II			

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Mealybug (cont.)	insecticidal soap (M-Pede)	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pests to be effective. Repeat spray 3 times at 10- to 14-day intervals. Soap could make floor slippery.
	<i>Isaria fumosorosea</i> (Preferal)	14-28 oz	0.14-0.28 oz	
	pyrethrum PT 1600A Pyrenone	aerosol		Follow label directions.
	pyriproxyfen (Distance)	8-12 fl oz	0.02 (0.6 mL)	Follow label directions.
	s-kinoprene Enstar II 5E	6-10 oz	1/2 tsp	Follow label directions.
	spirotetramat Kontos 2F	1.7 fl oz		See label for drench instructions. 24-hour restricted entry interval.
	thiamethoxam Flagship 25WG	4-8.5 oz	0.04-0.085 oz	Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Mites	<i>Beauveria bassiana</i> (Naturalis-O)	30-100 fl oz	0.30-1.0 fl oz	
	bifenazate (Floramite)	2-4 oz	1/4-1/2 tsp	Follow label directions.
	cyflumetofen (Sultan)	13.7 fl oz		12 hours restricted entry interval. IRAC Group 25. DO NOT exceed the maximum seasonal use rate of 27.4 fl oz of Sultan per crop growing cycle. DO NOT make more than 2 applications of Sultan per crop growing cycle. Sultan has selective activity on the Tetranychid family of mites but is not active on other species such as broad mite, cyclamen mite, flat mite or rust mite.
	fenazaquin (Magus)	12-24 oz	0.12-0.24 oz	Follow label directions.
	fenproximate Akari 5SC	16-24 oz	0.16-0.24 oz (4.527 mL)	Follow label directions.
	fluvalinate (Mavrik)	4-10 oz	1/2-1 tsp	Follow label directions.
	insecticidal soap (M-Pede)	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pest to be effective. Repeat spray 3 times at 5- to 7-day intervals. Soap could make floor slippery.
	pyrethrum PT 1600A Pyrenone	aerosol		Follow label directions.
Scale	cyfluthrin (Decathlon)	1.3-1.9 oz	1/4 tsp	Follow label directions.
	dinotefuran Safari 20 SG		1/2-1 tsp	Also effective on armored scale.
	horticultural oil Sunspray ultrafine Saf-T-Side Triact 90EC	1%-2%	1%-2%	Care must be taken because some plants are sensitive to oils. Thorough coverage is necessary, but do not overapply. Use fine spray.
	imidacloprid (Marathon, others)			Follow label directions. Many names and formulations are available.

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Scale	insecticidal soap (M-Pede)	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pests to be effective. Soap could make floor slippery.
	pyrethrum PT 1600A Pyrenone	aerosol		Follow label directions.
	pyrifluquinazon (Rycar)	6.4 oz	0.064 oz	Follow label directions. IRAC Group: un
	pyriproxyfen (Distance)	8-12 fl oz	0.02 oz (0.6 mL)	Follow label directions.
	spirotetramat Kontos 2F	1.7 fl oz		See label for drench instructions. 24-hour restricted entry interval.
	thiamethoxam Flagship 25WG	4-8.5 oz	0.04-0.085 oz	Soft scale only. Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Thrips	azadirachtin (Azatin)			Follow label directions.
	<i>Beauveria bassiana</i> BotaniGard ES Naturalis-O	1-2 lb 30-100 fl oz	1.6-3.2 oz 0.30-1.0 fl oz	
	cyfluthrin (Decathlon)	1.3-1.9 oz	1/4 tsp	Follow label directions.
	flonicamid 50 WDG Aria 0.7 oz package	1-6 packets (0.7-4.3 oz)		Repeat application every 7-28 days as necessary. 12-hour restricted entry interval.
	fluvalinate (Mavrik)	4-10 oz	1/2-1 tsp	
	insecticidal soap (M-Pede)	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pest to be effective. Repeat spray 3 times at 5- to 7-day intervals. Soap could make floor slippery.
	Naturalis-O	30-100 fl oz	0.30-1 fl oz	
	thiamethoxam Flagship 25WG	4-8.5 oz	0.04-0.085 oz	For leaf-feeding thrips. Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
White Grub	chlorantraniliprole (Acelepryn)	0.184-0.367 fl oz per 1,000 sq ft		Soil treatment only. Follow label directions.
	clothianidin Arena 50 WDG	see label		Apply as a drench. See label for drench rates. 12 hours restricted entry interval.
	thiamethoxam Flagship 25WG	6-8.5 oz	0.06-0.085 oz	Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Whitefly	azadirachtin (Azatin)			Follow label directions.
	<i>Beauveria bassiana</i> BotaniGard ES Naturalis-O	0.5-1 lb 30-100 fl oz	0.08-1.6 oz 0.30-1.0 fl oz	
	clothianidin Arena 50 WDG	0.9-1.26 oz.		Apply as a full coverage foliar spray or a drench. See label for drench rates. 12 hours restricted entry interval.

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Whitefly (cont.)	diflubenzuron Adept 25WSB	16-24 oz	0.04-0.08 oz (1-2 grams)	Follow label directions.
	dinotefuran Safari 20 SG		1/2-1 tsp	Also effective on armored scale.
	flonicamid 50 WDG Aria 0.7 oz package	1-6 packets (0.7-4.3 oz)		Repeat application every 7-28 days as necessary. 12-hour restricted entry interval.
	horticultural oils Sunspray ultrafine Saf-T-Side Triact 90EC	1%-2%	1%-2%	Care must be taken because some plants are sensitive to oils. Thorough coverage is necessary, but do not overapply. Use fine spray.
	imidacloprid Merit 75WP Merit 75WPS Marathon II			Follow label directions.
	insecticidal soap (M-Pede)	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pest to be effective. Repeat spray 3 times at 5- to 7-day intervals. Soap could make floor slippery.
	<i>Isaria fumosorosea</i> (Preferal)	14-28 oz	0.14-0.28 oz	
	Naturalis-O	30-100 fl oz	0.30-1 fl oz	
	pymetrozine (Endeavor)	2-5 oz	1/4-1/2 tsp	Follow label directions.
	pyrethrum PT 1600A Pyrenone	aerosol		Follow label directions.
	pyriproxyfen (Distance)	6-8 fl oz	0.02 oz (0.6 mL)	Follow label directions.
	s-kinoprene Enstar 5E	6-10 oz	1/2 tsp	Follow label directions.
	spirotetramat Kontos 2F	1.7 fl oz		See label for drench instructions. 24-hour restricted entry interval.
	thiamethoxam Flagship 25WG	4-8.5 oz	0.04-0.085 oz	Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.