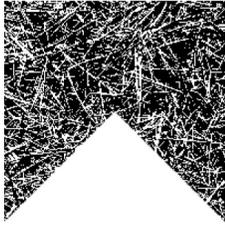




Commercial Ornamentals

Insect Control Recommendations for 2008



INSECT CONTROL Woody Ornamentals

Commercial Woody Ornamentals Insect Control*

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments**
Aphids			
	acephate ORTHENE TT&O	0.33 lb.	DO NOT apply Orthene to huckleberry, Balm of Gilead, cottonwood, Lombardy poplar, or Viburnum suspensum. Phytotoxicity may occur on flowering crabapple varieties listed on label. Read label. REI-24 hours.
	ORTHENE TT&O	0.25 lb.	
	SPRAY 97		
	acetamiprid TRISTAR	---	REI-24 hours.
	azadirachtin AZATIN XL ORNAZIN	--- ---	Complete coverage is important, but avoid excessive runoff. Use fine spray. Azadirachtin can also be applied as a drench. Azatin REI-4 hours. Ornazin REI-12 hours.
	bifenthrin TALSTAR S ONYXPRO	0.8-4 oz./10 gal.	Talstar S and Onyxpro are RESTRICTED USE pesticides. DO NOT use Onyxpro in greenhouses. REI-12 hours.
	<i>Beauveria bassiana</i> BOTANIGARD ES and WP	---	Wait 48 hours before applying fungicides. REI-4 hours.
	carbaryl SEVIN SL Various formulations	1 qt.	Carbaryl may damage Virginia and sand pines. REI-12 hours.
	chlorpyrifos DURSBAN formulations	See label.	Dursban is a RESTRICTED USE pesticide. DO NOT use on azaleas, camellias, or roses. REI-12 hours.
	clothianidin CELERO	Spray: 2-4 oz. See label for drench rates.	REI-12 hours.
	cyfluthrin DECATHLON 20WP TEMPO Various formulations	See label. See label.	Tempo is not labeled for agriculture/nursery use. Tempo 20WSP for golf courses is a RESTRICTED USE pesticide. REI-12 hours.

* Check the product label before purchase; read carefully for use directions, sites registered, rates, application frequency, re-entry, and phytotoxicity information. No endorsement is intended of products included or criticism of those excluded.

**REI = Re-entry Interval.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Aphids (cont.)			
	cyfluthrin + imidacloprid DISCUS	Spray: 50 fl. oz. See label for drench rates.	REI-12 hours.
	deltamethrin DELTAGUARD GC 5SC DELTAGUARD T&O 5SC	---	Deltaguard GC products are RESTRICTED USE pesticides. REI-12 hours.
	diazinon formulations	See label.	DO NOT spray on ferns, gardenias, or hibiscus. Many insecticides containing diazinon are RESTRICTED USE pesticides. REI-12 hours.
	dimethoate CYGON 2E DIMETHOATE 267 Other formulations	See label.	See plant use list on label. DO NOT use on crape myrtle or Burford or Chinese hollies. Do not mix with insecticidal oils. For outdoor nursery use only. Cannot be used in shade houses. Do not use on plants intended for use as propagation stock. REI-48 hours.
	dinotefuran SAFARI	Spray: 4-8 oz. Drench: 12-24 oz.	REI-12 hours.
	endosulfan THIONEX 3EC THIONEX 50WP	0.66 qt. 1 lb.	DO NOT use on birch. Thionex is a highly toxic pesticide. Handlers must be checked every 2 hours while using this product. REI-24 hours.
	fenpropathrin TAME	---	Tame is a RESTRICTED USE pesticide. Label recommends tank mixing with acephate. REI-24 hours.
	fluvalinate MAVRIK 2F	2-5 oz.	REI-12 hours.
	flonicamid ARIA		Some pansy cultivars may be sensitive. Aria is labeled for use only in greenhouses and interiorscapes. REI-12 hours.
	garlic extract ALLITYN	4- 32 fl. oz.	Allityn is an insect repellent. REI-4 hours.
	horticultural oils, such as ULTRA-FINE OIL	See label.	See label for specific use conditions. DO NOT use on all evergreens. REI-4 hours.
	imidacloprid MARATHON 1% G MARATHON 60WSP MARATHON II MERIT 75 WP or WSP See also DISCUS	Plants in containers: one application per crop cycle Outdoor ornamentals grown in beds: 40 lb./A/yr.	Plants must be actively growing at application; do not overwater. Marathon products are labeled for commercial nursery/greenhouse use. Merit is for landscape use, including interior plantscapes. Read labels. REI-12 hours.
	lambda-cyhalothrin SCIMITAR CG and CS	1.5-5 fl. oz.	Lambda-cyhalothrin is a RESTRICTED USE pesticide. Scimitar CS is not registered for agricultural/nursery use. REI-24 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Aphids (cont.)			
	malathion Various formulations	See label.	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.
	neem oil TRIACT 70	1-2 gal.	REI-4 hours.
	permethrin Various formulations	See label.	All permethrin formulations for outdoor nursery use are RESTRICTED USE pesticides. REI-12 hours.
	potassium salts of fatty acids (insecticidal soaps) M-PEDE Insecticidal soap	See label. 2 gal.	REI-12 hours.
	pymetrozine ENDEAVOR	---	REI-12 hours.
	pyrethrins PYRETH-IT	2-16 oz.	Buffer solution to pH of 5.5 to 7.0. REI-12 hours.
	s-kinoprene ENSTAR II	5-10 fl. oz.	REI-4 hours.
	thiamethoxam FLAGSHIP	2-4 oz. chemigation or drench: 8 oz./A	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, it can be applied through chemigation systems. DO NOT exceed 8 ounces per acre per year or crop, whichever is shorter. REI-12 hours.
Bark Beetles			
	bifenthrin TALSTAR S ONYX	0.8-4 oz./10 gal.	Talstar S is a RESTRICTED USE pesticide. Do not use Onyz in nurseries and greenhouses. REI-12 hours.
	carbaryl SEVIN SL Various formulations	1 qt.	Carbaryl may damage Virginia and sand pines. REI-12 hours.
	chlorpyrifos DURSBAN formulations	See label.	See label for treatment of pine beetles and shothole borers. Many chlorpyrifos formulations are RESTRICTED USE pesticides. REI-24 hours.
	cypermethrin DEMON MAX	---	For landscape use only.
	permethrin Various formulations	---	All permethrin formulations for outdoor nursery use are RESTRICTED USE pesticides. REI-12 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Borers			
<i>Coleopteran and Lepidopteran</i>			
	azadirachtin AZATIN XL PLUS	10-16 fl. oz.	REI-4 hours.
	bifenthrin TALSTAR S ONYX Various formulations	0.8-4 oz./10 gal.	Talstar S is a RESTRICTED USE pesticide. Do not use Onyz in nurseries and greenhouses. REI-12 hours.
	chlorpyrifos DURSBAN formulations	See label.	Insecticides with the active ingredient chlorpyrifos are RESTRICTED USE pesticides. REI-24 hours.
	cyfluthrin + imidacloprid DISCUS	---	See label for drench applications rates and instructions. REI-12 hours.
	cypermethrin DEMON MAX	50 fl. oz.	For landscape use only. Apply as protectant to bark of trees.
	endosulfan THONEX 3 EC THONEX 50W	See label for rates and instructions.	DO NOT use thionex on birch. Thionex is labeled for peach tree and twig borers and dogwood and lilac borers. Thionex is a highly toxic pesticide. Handlers must be checked every two hours while using this product. REI-24 hours.
	garlic extract ALLITYN	4-32 fl. oz.	Allityn is an insect repellent. REI-4 hours.
	imidacloprid MARATHON 1% G MARATHON 60 WSP MARATHON II MERIT 75 WP or WSP See also DISCUS	Plants in containers: one application/crop cycle. Outdoor ornamentals grown in beds: 40 lb./A/yr.	See label for drench application rates and instructions. Marathon products are labeled for commercial nursery/greenhouse use. Merit is for landscape use, including interior plantscapes. REI-12 hours.
	permethrin Various formulations	---	All permethrin formulations for outdoor nursery use are RESTRICTED USE pesticides. REI-12 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Caterpillars (Armyworms, Bagworms, Loopers, Tent Caterpillars, Webworms)			
	acephate ORTHENE PRO 75	0.33-1 lb.	Orthene may be phytotoxic to some flowering crabapples. See label.
	ORTHENE TT&O	0.33-1 lb.	REI-24 hours.
	ORTHENE TT&O SPRAY 97	0.25-0.75 lb.	
	acetamiprid TRISTAR	---	REI-24 hours.
	azadirachtin AZATIN XL and XL PLUS	---	Complete coverage important but avoid excessive runoff. Use fine spray
	ORNAZIN	---	Azatin REI-4 hours. Ornazin REI-12 hours.
	<i>Bacillus thuringiensis</i> formulations such as DIPEL	---	<i>B.t.</i> formulations are most effective on younger caterpillars. Spray tent caterpillar webs late in the day. REI-4 hours.
	bifenthrin TALSTAR S	0.8-4 oz./10 gal.	Talstar S is a RESTRICTED USE pesticide. Do not use Onyz in nurseries and greenhouses.
	ONYX		REI-12 hours.
	Various formulations		
	carbaryl SEVIN SL	1 qt.	Carbaryl may damage Virginia and sand pines.
	Various formulations		REI-12 hours.
	chlorpyrifos DURSBAN formulations	See label.	See label rates for specific pests. Many chlorpyrifos formulations are RESTRICTED USE pesticides. REI-24 hours.
	cryolite KRYOCIDE	8-24 lb./A	REI-12 hours.
	cyfluthrin DECATHLON 20WP	See label.	Tempo is not labeled for agriculture/nursery use. Tempo 20WSP for golf courses is a RESTRICTED USE pesticide.
	TEMPO		REI-12 hours.
	Various formulations		
	cyfluthrin + imidacloprid DISCUS	50 fl. oz.	REI-12 hours.
	cypermethrin DEMON MAX	50 fl. oz.	For landscape use only. Apply as protectant to bark of trees.
	deltamethrin DELTAGUARD GC 5SC	---	Deltaguard GC products are RESTRICTED USE pesticides.
	DELTAGUARD T&O 5SE	---	REI-12 hours.
	diazinon formulations	See label.	DO NOT spray on ferns, hibiscus, or gardenias. Many insecticides containing diazinon are RESTRICTED USE pesticides. REI-12 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Caterpillars (Armyworms, Bagworms, Loopers, Tent Caterpillars, Webworms) (cont.)			
	diflubenzuron DIMILIN 25W	See label.	Dimilin is a RESTRICTED USE pesticide. REI-12 hours.
	fluvalinate MAVRIK 2F	2-5 oz.	REI-12 hours.
	garlic extract ALLITYN	4-32 fl. oz.	Allityn is an insect repellent. REI-4 hours.
	horticultural oils, such as ULTRA-FINE OIL	See label.	See label for specific use conditions. DO NOT use on all evergreens. REI-4 hours.
	lambda-cyhalothrin SCIMITAR CG and CS	1.5-5 fl. oz.	Lambda-cyhalothrin is a RESTRICTED USE pesticide. Scimitar CS is not registered for agricultural/nursery use. REI-24 hours.
	malathion Various formulations	See label.	REI-12 hours.
	novaluron PEDESTAL	6-8 fl. oz.	For use in nurseries and greenhouses. REI-12 hours.
	permethrin Various formulations	---	All permethrin formulations for outdoor nursery use are RESTRICTED USE pesticides. REI-12 hours.
	phosmet IMIDAN 70W	12-16 oz.	For professional use only REI-1 to 13 days.
	potassium salts of fatty acids (insecticidal soaps) M-PEDE Insecticidal soap	See label. 2 gal.	REI-12 hours.
	spinosad CONSERVE SC		REI-4 hours.
Lace Bugs			
	acephate ORTHENE PRO 75 ORTHENE TT&O ORTHENE TT&O SPRAY 97	0.33 lb. 0.33 lb. 0.25 lb.	Treat when nymphs are present in early summer. Direct spray to leaf undersurfaces. REI-24 hours.
	acetamiprid TRISTAR	---	REI-24 hours.
	bifenthrin TALSTAR S ONYX Various formulations	0.8-4 oz./10 gal.	Talstar S is a RESTRICTED USE pesticide. Do not use Onyz in nurseries and greenhouses. REI-12 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Lace Bugs (cont.)			
	carbaryl SEVIN SL Various formulations	1 qt.	Carbaryl may damage Virginia and sand pines. REI-12 hours.
	chlorpyrifos DURSBAN Various formulations	See label.	Many chlorpyrifos formulations are RESTRICTED USE pesticides. See label rates for specific pests. REI-24 hours.
	cyfluthrin DECATHLON 20WP TEMPO Various formulations	See label.	Tempo is not labeled for agriculture/nursery use. Tempo 20WSP for golf courses is a RESTRICTED USE pesticide. REI-12 hours.
	cyfluthrin + imidacloprid DISCUS	---	See label for drench application rates and instructions. REI-12 hours.
	deltamethrin DELTAGUARD GC 5SC DELTAGUARD T&O 5SC	--- ---	Deltaguard GC products are RESTRICTED USE pesticides. REI-12 hours.
	diazinon formulations	See label.	DO NOT spray on ferns, hibiscus, or gardenias. Many insecticides containing diazinon are RESTRICTED USE pesticides. REI-12 hours.
	fenpropathrin TAME 2.4EC	See label.	Tame is a RESTRICTED USE pesticide. REI-24 hours.
	horticultural oils, such as ULTRA-FINE OIL	See label.	See label for specific use conditions. DO NOT use on all evergreens REI-4 hours.
	imidacloprid MARATHON 1% G MARATHON 60 WSP MARATHON II MERIT 75 WP or WSP See also DISCUS	Plants in containers: one application/crop cycle. Outdoor ornamentals grown in beds: 40 lb./A/yr.	See label for drench application rates and instructions. Marathon products are labeled for commercial nursery/greenhouse use. Merit is for landscape use, including interior plantscapes. REI-12 hours.
	lambda-cyhalothrin SCIMITAR CG and CS	1.5-5 fl. oz.	Lambda-cyhalothrin is a RESTRICTED USE pesticide. Scimitar CS is not registered for agricultural/nursery use. REI-24 hours.
	malathion Various formulations	See label.	REI-12 hours.
	permethrin Various formulations	---	All permethrin formulations for outdoor nursery use are RESTRICTED USE pesticides. REI-12 hours.
	potassium salts of fatty acids (insecticidal soaps) M-PEDE Insecticidal soap	See label. 2 gal.	REI-12 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Lace Bugs (cont.)			
	thiamethoxam FLAGSHIP	2-4 oz.	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 chemical per acre per year or crop, whichever is shorter. REI-12 hours.
Leaf Beetles (Elm Leaf Beetle, Flea Beetle, and Strawberry Rootworm)			
	acephate ORTHENE PRO 75	1 lb.	REI-24 hours.
	ORTHENE TT&O	1 lb.	
	ORTHENE TT&O SPRAY 97	0.75 lb.	
	acetamiprid TRISTAR	---	REI-24 hours.
	bifenthrin TALSTAR S	1.2-4 fl.oz./10 gal.	Talstar S is a RESTRICTED USE pesticide. REI-12 hours.
	carbaryl SEVIN Various formulations	See label.	REI-12 hours.
	chlorpyrifos DURSBAN formulations	See label.	DO NOT use on azaleas, camellias, or roses. REI-12 hours.
	cryolite KRYOCIDE	8-24 lb./A	REI-12 hours.
	cyfluthrin DECATHLON 20WP TEMPO Various formulations	See label.	Tempo is not labeled for agriculture/nursery use. Tempo 20WSP for golf courses is a RESTRICTED USE pesticide. REI-12 hours.
	deltamethrin DELTAGUARD GC 5SC DELTAGUARD T&O 5SC	--- ---	Deltaguard GC products are RESTRICTED USE pesticides. Deltagard T&O is not labeled for agricultural use. REI-12 hours.
	dimethoate CYGON 2E DIMETHOATE 267 Other formulations	See label.	See plant use list on label. DO NOT use dimethoate on crapemyrtle or Burford or Chinese hollies. Do not mix with insecticidal oils. For outdoor nursery use only. Cannot be used in shade houses. Do not use on plants intended for use as propagation stock. REI-48 hours.
	garlic extract ALLITYN	4-32 fl. oz.	Allityn is an insect repellent. REI-4 hours.
	horticultural oils, such as ULTRA-FINE OIL OMNI OIL 6E	See label.	Labeled for leaf beetle larvae. See label for specific use conditions. DO NOT use on all evergreens. REI-4 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Leaf Beetles (Elm Leaf Beetle, Flea Beetle, and Strawberry Rootworm) (cont.)			
	imidacloprid MARATHON 1% G MARATHON 60 WSP MARATHON II MERIT 75 WP or WSP See also DISCUS	Plants in containers: one application/crop cycle. Outdoor ornamentals grown in beds: 40 lb./A/yr.	See label for drench application rates and instructions. Marathon products are labeled for commercial nursery/greenhouse use. Merit is for landscape use, including interior plantscapes. REI-12 hours.
	permethrin Various formulations	---	All permethrin formulations for outdoor nursery use are RESTRICTED USE pesticides. REI-12 hours.
	phosmet IMIDAN 70W	12-16 oz.	For professional use only. Labeled for Elm leaf beetle larvae and Japanese beetles. REI-1 to 13 days.
	spinosad CONSERVE SC	---	REI-4 hours.
Leafhoppers and Spittlebugs			
	acephate ORTHENE PRO 75 ORTHENE TT&O ORTHENE TT&O SPRAY 97	1 lb. 1 lb. 0.75 lb.	REI-24 hours.
	acetamiprid TRISTAR	---	REI-24 hours.
	azadirachtin AZATIN XL and XL PLUS ORNAZIN	--- ---	Complete coverage important but avoid excessive runoff. Use fine spray Azatin REI-4 hours. Ornazin REI-12 hours.
	bifenthrin TALSTAR S ONYX Various formulations	0.8-4 oz./10 gal.	Talstar S is a RESTRICTED USE pesticide. Do not use Onyz in nurseries and greenhouses. REI-12 hours.
	buprofezin TALUS	12 oz.	REI-12 hours.
	carbaryl SEVIN SL Various formulations	1 qt.	Carbaryl may damage Virginia and sand pines. REI-12 hours.
	chlorpyrifos DURSBAN formulations	See label.	Treat if adults are numerous and leaf discoloration or mottling occurs. DO NOT use chlorpyrifos on azaleas or camellias. Many chlorpyrifos formulations are RESTRICTED USE pesticides. REI-24 hours.
	cyfluthrin DECATHLON 20WP TEMPO Various formulations	See label.	Tempo is not labeled for agriculture/nursery use. Tempo 20WSP for golf courses is a RESTRICTED USE pesticide. REI-12 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Leafhoppers and Spittlebugs (cont.)			
	cyfluthrin + imidacloprid DISCUS	---	See label for drench application rates and instructions. REI-12 hours.
	deltamethrin DELTAGUARD GC 5SC DELTAGUARD T&O 5SC	--- --- ---	Deltaguard GC products are RESTRICTED USE pesticides. REI-12 hours.
	diazinon formulations	See label.	Many insecticides containing diazinon are RESTRICTED USE pesticides. DO NOT spray on ferns, hibiscus, or gardenias. REI-12 hours.
	dimethoate CYGON 2E DIMETHOATE 267 Other formulations	See label.	See plant use list on label. DO NOT use dimethoate on crapemyrtle or Burford or Chinese hollies. Do not mix with insecticidal oils. For outdoor nursery use only. Cannot be used in shade houses. Do not use on plants intended for use as propagation stock. REI-48 hours.
	fenpropathrin TAME 2.4EC	See label.	REI-24 hours.
	fluvalinate MAVRIK 2F	2-5 oz.	REI-12 hours.
	garlic extract ALLITYN BIOREPEL	4-32 fl. oz. 1 gal.	Allityn is an insect repellent. REI-4 hours.
	horticultural oils, such as ULTRA-FINE OIL OMNI OIL 6E	See label.	Labeled for leaf beetle larvae. See label for specific use conditions. DO NOT use on all evergreens. REI-4 hours.
	imidacloprid MARATHON 1% G MARATHON 60 WSP MARATHON II MERIT 75 WP or WSP See also DISCUS	Plants in containers: one application/crop cycle. Outdoor ornamentals grown in beds: 40 lb./A/yr.	See label for drench application rates and instructions. Marathon products are labeled for commercial nursery/greenhouse use. Merit is for landscape use, including interior plantscapes. REI-12 hours.

Insect	Insecticide And Formulation	Amount Per 100 Gallons Water Or As Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Leafhoppers and Spittlebugs (cont.)			
	lambda-cyhalothrin SCIMITAR CG and CS	1.5-5 fl. oz.	Lambda-cyhalothrin is a RESTRICTED USE pesticide. Scimitar CS is not registered for agricultural/nursery use. REI-24 hours.
	neem oil TRIACT 70	1-2 gal.	REI-4 hours.
	permethrin Various formulations	---	All permethrin formulations for outdoor nursery use are RESTRICTED USE pesticides. REI-12 hours.
	phosmet IMIDAN 70W	12-16 oz.	For professional use only REI-1 to 13 days.
	potassium salts of fatty acids (insecticidal soaps) M-PEDE Insecticidal soap	See label. 2 gal.	REI-12 hours.
	thiamethoxam FLAGSHIP	4 oz.	Flagship is a contact and systemic insecticide that moves in the leaf when sprayed or systemically throughout the plant when applied as a drench. Flagship can be applied with proper precautions through chemigation systems. DO NOT exceed 8 ounces of product per acre per year or crop, whichever is shorter. REI-12 hours.
Leafminers			
	abamectin AVID 0.15EC FLORA-MEK 0.15EC	8 fl. oz.	See label for specific use directions. REI-12 hours.
	acephate ORTHENE TT&O	0.33-0.66 lb.	REI-24 hours.
	acetamiprid TRISTAR	---	REI-24 hours.
	azadirachtin AZATIN XL and XL PLUS ORNAZIN	--- ---	Complete coverage important but avoid excessive runoff. Use fine spray. Azatin REI-4 hours. Ornazin REI-12 hours.
	bifenthrin TALSTAR S ONYX Various formulations	0.8-4 oz./10 gal.	Talstar S is a RESTRICTED USE pesticide. Do not use Onyz in nurseries and greenhouses. REI-12 hours.
	carbaryl SEVIN SL Various formulations	1 qt.	Carbaryl may damage Virginia and sand pines. REI-12 hours.
	chlorpyrifos DURSBAN 50W	2 lb.	DO NOT use Dursban on azaleas, camellias, or roses. Dursban 50W is a RESTRICTED USE pesticide. REI-24 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Leafminers (cont.)			
	cyfluthrin + imidacloprid DISCUS	---	See label for application rates and instructions. REI-12 hours.
	cyromazine CITATION	2.66 oz.	Labeled for dipterous leafminers only. REI-12 hours.
	deltamethrin DELTAGUARD GC 5SC DELTAGUARD T&O 5SC	--- ---	Deltaguard GC products are RESTRICTED USE pesticides. REI-12 hours.
	diazinon Various formulations	See label.	Many insecticides containing diazinon are RESTRICTED USE pesticides. DO NOT spray on ferns, hibiscus, or gardenias. REI-12 hours.
	diflubenzuron DIMILIN 25W	See label.	Dimilin is a RESTRICTED USE pesticide. Labeled for lepidopterous leafminers ONLY . REI-12 hours.
	dimethoate CYGON 2E DIMETHOATE 267 Various formulations	1.5 pt.	See plant use list on label. DO NOT use on crapemyrtle, Burford or Chinese hollies. Do not mix with insecticidal oils. For outdoor nursery use only. Cannot be used in shade houses. Do not use on plants intended for use as propagation stock. REI-48 hours.
	dinotefuran SAFARI	Spray: 4-8 oz. Drench: 12-24 oz.	REI-12 hours.
	garlic extract ALLITYN BIOREPEL	4-32 fl. oz. 1 gal.	Allityn is an insect repellent. REI-4 hours.
	imidacloprid MARATHON 1% G MARATHON 60 WSP MARATHON II MERIT 75 WP or WSP See also DISCUS	Plants in containers: one application/crop cycle. Outdoor ornamentals grown in beds: 40 lb./A/yr.	See label for drench application rates and instructions. Marathon products are labeled for commercial nursery/greenhouse use. Merit is for landscape use, including interior plantscapes. REI-12 hours.
	lambda-cyhalothrin SCIMITAR CG and CS	1.5-5 fl. oz.	Lambda-cyhalothrin is a RESTRICTED USE pesticide. Scimitar CS is not registered for agricultural/nursery use. Labeled for use as an adulticide. REI-24 hours.
	novaluron PEDESTAL	6-8 fl.oz.	For population suppression ONLY . Observe resistance management restrictions. REI-12 hours.
	permethrin Various formulations	---	All permethrin formulations for outdoor nursery use are RESTRICTED USE pesticides. REI-12 hours.
	phosmet IMIDAN 70W	12-16 oz.	For professional use only. Labeled for birch and magnolia leafminers. REI-1 to 13 days.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Leafminers (cont.)			
	potassium salts of fatty acids (insecticidal soaps)		REI-12 hours.
	M-PEDE Insecticidal soap	See label. 2 gal.	
	pyriproxyfen DISTANCE IGR	8-12 fl. oz.	Labeled for spotted tentiform leafminer ONLY . REI-12 hours.
	spinosad CONSERVE SC	---	Conserve is labeled for dipterous leafminers ONLY . Adding a non-ionic spray adjuvant has been shown to increase efficacy. REI-4 hours.
	trichlorfon DYLOX 80	20-30 oz.	For landscape use only. Labeled for dipterous leafminers.
Mites			
	abamectin AVID 0.15EC FLORA-MEK 0.15EC	4 fl. oz.	Label includes two-spotted spidermites, southern red mites, cyclamen and broad mites, and rust and bud mites among others. REI-12 hours.
	acequinocyl SHUTTLE	6.4-12.8 fl. oz.	Label includes spruce spidermites and two-spotted spidermites. DO NOT mix with pesticides containing the active ingredient fosetyl (e.g., Aliette). REI-12 hours.
	bifenazate FLORAMITE	2-4 oz.	Label includes two-spotted spidermites, southern red mites, and Lewis mites among others. REI-12 hours.
	bifenthrin TALSTAR S	See label.	Talstar S is a RESTRICTED USE pesticide. REI-12 hours.
	chlorpyrifos DURSBAN formulations	See label.	DO NOT use chlorpyrifos on azaleas, camellias, or roses. Many chlorpyrifos formulations are RESTRICTED USE pesticides. REI-24 hours.
	clofentezine OVATION		Label includes two-spotted spidermites, European red mites, Pacific spidermites, yellow spidermites, McDaniel spidermites. REI-12 hours.
	etoxazole TETRASAN 5WDG	8-16 oz.	Labeled for control of spidermites, including citrus red mites, European red mites, Lewis spidermites, Pacific spidermites, southern red mites, spruce spider mite, two-spotted spidermites. REI-12 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Mites (cont.)			
	fenbutatin-oxide PROMITE	---	Promite is a RESTRICTED USE pesticide. Handlers must be checked every 2 hours when using this product. Label includes spruce spidermites, <i>oligonychus</i> spp. (e.g., southern red mites), and two-spotted spidermites. REI-48 hours.
	garlic extract ALLITYN BIOREPEL	4-32 fl. oz. 1 gal.	Allityn is an insect repellent. REI-4 hours.
	hexyziathox HEXYGON		Hexygon kills eggs and immature mites. The eggs produced by adult female mites that come into contact with treated surfaces will be inviable. Label includes two-spotted spidermites and southern red mites among others. REI-12 hours.
	horticultural oil, such as ULTRA-FINE OIL	2-3 gal.	See label. REI-4 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.
	milbemectin ULTIFLORA	8-16 oz.	Ultiflora is a RESTRICTED USE pesticide. Labeled for spidermites and red mites. Maximum rate of application is 128 fluid ounces of Ultiflora per acre per year REI-12 hours.
	potassium salts of fatty acids (insecticidal soaps) M-PEDE INSECTICIDAL SOAP	See label. 2 gal.	REI-12 hours.
	pyridaben SANMITE	---	Label includes broad mites, southern red mites, and two-spotted spidermites among others. REI-12 hours.
	spinosad CONSERVE SC	---	Control of spidermites in certain research trials has been variable. Adding a non-ionic spray adjuvant has shown increased efficacy. REI-4 hours.
	spiromesifen JUDO	2-4 fl. oz.	Label includes two-spotted spidermites, southern red mites, Lewis mites, spruce spidermites, cyclamen mites, and broad mites among others. REI-12 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Scale Insects			
	acephate ORTHENE PRO 75 ORTHENE TT&O ORTHENE TT&O SPRAY 97	0.66-1 lb. 0.66-1 lb. 0.5 lb.	Have scale identified in order to treat during crawler stage. REI-24 hours.
	azadirachtin AZATIN XL and XL PLUS ORNAZIN		Complete coverage important but avoid excessive runoff. Use fine spray. Azatin REI-4 hours. Ornazin REI-12 hours.
	bifenthrin TALSTAR S ONYX Various formulations	0.8-4 oz./10 gal.	Talstar S is a RESTRICTED USE pesticide. Do not use Onyz in nurseries and greenhouses. REI-12 hours.
	buprofezin TALUS	14 oz.	REI-12 hours.
	calcium polysulfide Lime Sulfur	12-12.5 gal.	Lime sulfur is a dormant spray.
	carbaryl SEVIN 50 WP Various formulations	2 lb.	Apply only to those plants listed on the label. Apply during crawler stage. Repeat application in 10 to 14 days.
	chlorpyrifos DURSBAN Various formulations	See label.	DO NOT use chlorpyrifos on azaleas, camellias, or roses. Many chlorpyrifos formulations are RESTRICTED USE pesticides. REI-24 hours.
	cyfluthrin DECATHLON 20WP TEMPO Various formulations	See label.	Tempo is not labeled for agriculture/nursery use. Tempo 20WSP for golf courses is a RESTRICTED USE pesticide. REI-12 hours.
	cyfluthrin + imidacloprid DISCUS	---	See label for application rates and instructions. REI-12 hours.
	deltamethrin (Crawler stage) DELTAGARD GC 5SC DELTAGARD T&O 5SC	4-8 fl. oz.	Deltagard GC 5SC is a RESTRICTED USE pesticide. REI-12 hours.
	diazinon Various formulations	See label.	Many insecticides containing diazinon are RESTRICTED USE pesticides. DO NOT spray diazinon on ferns, hibiscus, or gardenias. REI-12 hours.
	dimethoate CYGON 2E DIMETHOATE 267 Other formulations	See label.	Apply only to those plants listed on the label. DO NOT use on crapemyrtle or Burford or Chinese hollies. Do not mix with insecticidal oils. For outdoor nursery use only. Cannot be used in shade houses. Do not use on plants intended for use as propagation stock. REI-48 hours.
	dinotefuran SAFARI	Spray: 4-8 oz. Drench: 12-24 oz.	REI-12 hours.
	garlic extract ALLITYN BIOREPEL	4-32 fl. oz. 1 gal.	Allityn is an insect repellent. REI-4 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Scale Insects (cont.)			
	horticultural oil, such as ULTRA-FINE OIL	See label.	Use as a dormant spray before budbreak or during growing season as specified on label. REI-4 hours.
	imidacloprid MARATHON 1G MARATHON 60 WSP MARATHON II MERIT 75 WP or WSP	See label.	Marathon products are labeled for commercial nursery/greenhouse use. Merit is for landscape use, including interior plantscapes. REI-12 hours.
	lambda-cyhalothrin SCIMITAR CG and CS	1.5-5 fl. oz.	Lambda-cyhalothrin is a RESTRICTED USE pesticide. Scimitar CS is not registered for agricultural/nursery use. REI-24 hours.
	malathion Various formulations	See label.	REI-12 hours.
	methidathion SUPRACIDE 25W	2 lbs.	Supracide 25W is a RESTRICTED USE pesticide. REI-2 to 14 days.
	neem oil TRIACT 70	1-2 gal.	REI-4 hours.
	pyriproxyfen DISTANCE IGR	8-12 fl. oz.	REI-12 hours.
	soap M-PEDE 49 EC	4-8 qt.	REI-12 hours.
	thiamethoxam FLAGSHIP	2-4 oz.	Flagship is a contact and systemic insecticide that moves in the leaf when sprayed or systemically throughout the plant when applied as a drench. Flagship can be applied with proper precautions through chemigation systems. DO NOT exceed 8 ounces of product per acre per year or crop, whichever is shorter. REI-12 hours.
Slugs and Snails			
	garlic extract ALLITYN BIOREPEL	4-32 fl. oz. 1 gal.	Allityn is an insect repellent. REI-4 hours.
	iron phosphate SLUGGO-AG	24-44 lb./A	REI-0 hours.
	metaldehyde DEADLINE	---	REI-12 hours.
	Various bait formulations		
	methiocarb MESUROL 75W	---	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.
	phosmet IMIDAN 70W	12-16 oz.	For professional use only REI-1 to 13 days.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Thrips			
	abamectin AVID 0.15EC FLORA-MEK 0.15EC	8 fl. oz.	For suppression of pest populations. REI-12 hours.
	acephate ORTHENE PRO 75 ORTHENE TT&O ORTHENE TT&O SPRAY 97	0.66 lb. 0.66 lb. 0.5-1 lb.	Check labels for specific use information. REI-24 hours.
	acetamiprid TRISTAR		REI-24 hours.
	azadirachtin AZATIN XL and XL PLUS ORNAZIN	--- ---	Complete coverage important but avoid excessive runoff. Use fine spray Azatin REI-4 hours. Ornazin REI-12 hours.
	<i>Beauveria bassiana</i> BOTANIGARD ES BOTANIGARD WP	--- ---	Wait 48 hours before applying fungicides. REI-4 hours.
	bifenthrin TALSTAR S ONYX Various formulations	8-40 oz.	Talstar S is a RESTRICTED USE pesticide. Do not use Onyx in nurseries and greenhouses. REI-12 hours.
	carbaryl SEVIN 50 WP Various formulations	2 lb.	Apply only to those plants listed on the label. Apply when crawler stage is present. Repeat application in 10-14 days.
	chlorpyrifos DURSBAN Various formulations	See label.	DO NOT use chlorpyrifos on azaleas, camellias, or roses. Many chlorpyrifos formulations are RESTRICTED USE pesticides. REI-24 hours.
	cyfluthrin DECATHLON 20WP TEMPO Various formulations	1.9 oz. 1.2 oz.	Tempo is not labeled for agriculture/nursery use. Tempo 20WSP for golf courses is a RESTRICTED USE pesticide. REI-12 hours.
	cyfluthrin + imidacloprid DISCUS	---	See label for application rates and instructions. REI-12 hours.
	diazinon Various formulations	See label.	Many insecticides containing diazinon are RESTRICTED USE pesticides. DO NOT spray on ferns, hibiscus, or gardenias. REI-12 hours.
	dinotefuran SAFARI	Spray: 4-8 oz. Drench: 12-24 oz.	REI-12 hours.
	flonicamid ARIA		Some pansy cultivars may be sensitive. Aria is labeled for use only in greenhouses and interiorscapes. Only suppresses thrips in flowers. REI-12 hours.
	garlic extract ALLITYN BIOREPEL	4-32 fl. oz. 1 gal.	Allityn is an insect repellent. REI-4 hours.
	horticultural oils, such as ULTRA-FINE OIL	See label.	Use as a dormant spray before budbreak or during growing season as specified by labels. REI-4 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Thrips (cont.)			
	imidacloprid MARATHON 1% G MARATHON 60 WSP MARATHON II MERIT 75 WP or WSP	See label.	Marathon products are labeled for commercial nursery/greenhouse use. Merit is for landscape use, including interior plantscapes. REI-12 hours.
	lambda-cyhalothrin SCIMITAR CG and CS	1.5-5 fl. oz.	Lambda-cyhalothrin is a RESTRICTED USE pesticide. Scimitar CS is not registered for agricultural/nursery use. REI-24 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.
	novaluron PEDESTAL	6-8 fl.oz.	Resistance management restrictions. REI-12 hours.
	permethrin Various formulations	---	All permethrin formulations for outdoor nursery use are RESTRICTED USE pesticides. REI-12 hours.
	potassium salts of fatty acids (insecticidal soaps) M-PEDE INSECTICIDAL SOAP	See label. 2 gal.	REI-12 hours.
	spinosad CONSERVE SC	---	REI-4 hours.
Whiteflies			
	abamectin AVID 0.15EC FLORA-MEK 0.15EC	8 fl. oz.	For suppression of pest populations. REI-12 hours.
	acetamiprid TRISTAR	---	REI-24 hours.
	azadirachtin AZATIN XL ORNAZIN	10-18 oz.	Complete coverage is important but avoid excessive runoff. Use fine spray. Azatin REI-4 hours. Ornazin REI-12 hours.
	<i>Beauveria bassiana</i> BOTANIGARD ES BOTANIGARD WP	--- ---	Wait 48 hours before applying fungicides. REI-4 hours.
	bifenthrin TALSTAR S	0.6-1.6 oz./10 gal.	Talstar S is a RESTRICTED USE pesticide. REI-12 hours.
	buprofezin TALUS	6 oz.	REI-12 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Whiteflies (cont.)			
	carbaryl SEVIN 50 WP Various formulations	2 lb.	Apply only to those plants listed on the label. Apply when crawler stage is present. Repeat application in 10 to 14 days.
	chlorpyrifos DURSBAN Various formulations	See label.	Many chlorpyrifos formulations are RESTRICTED USE pesticides.
	clothianidin CELERO	Spray: 2-4 oz. See label for drench rates.	REI-12 hours.
	cyfluthrin DECATHLON 20WP TEMPO Various formulations	See label.	Tempo is not labeled for agriculture/nursery use. Tempo 20WSP for golf courses is a RESTRICTED USE pesticide. REI-12 hours.
	cyfluthrin + imidacloprid DISCUS	---	See label for application rates and instructions. REI-12 hours.
	diazinon DIAZINON 4E Various formulations	1 pt.	Many insecticides containing diazinon are RESTRICTED USE pesticides. DO NOT spray diazinon on ferns, hibiscus, or gardenia. REI-12 hours.
	diflubenzuron DIMILIN 25W	See label.	Dimilin is a RESTRICTED USE pesticide. REI-12 hours.
	dimethoate 5 LB DIMETHOATE DIMETHOATE 4E Other formulations	See label.	See plant use list on label. DO NOT use dimethoate on crapemyrtle or Burford or Chinese hollies. Do not mix with insecticidal oils. For outdoor nursery use only. Cannot be used in shade houses. Do not use on plants intended for use as propagation stock. REI-48 hours.
	dinotefuran SAFARI	Spray: 4-8 oz. Drench: 12-24 oz.	REI-12 hours.
	fenpropathrin TAME 2.4EC	5.33-10.67 oz.	Tame is a RESTRICTED USE pesticide. REI-24 hours.
	flonicamid ARIA		Some pansy cultivars may be sensitive. Labeled for use only in greenhouses and interiorscapes. Suppression of silverleaf whiteflies. REI-12 hours.
	fluvalinate MAVRIK	2-10 fl.oz.	
	garlic extract ALLITYN BIOREPEL	4- 32 fl. oz. 1 gal.	Allityn is an insect repellent. REI-4 hours.
	horticultural oil, such as ULTRA-FINE OIL	2-3 gal.	See label for use instructions for control of immature whiteflies. REI-4 hours.
	imidacloprid MARATHON 1% G MARATHON 60 WSP MARATHON II MERIT 75 WP or WSP	Plants in containers: one application per crop cycle. Outdoor ornamentals grown in beds: 40 lb./A/year	Plants must be actively growing at application; do not overwater following application. Marathon products are labeled for commercial nursery/greenhouse use. Merit is for landscape use, including interior plantscapes. REI-12 hours.

Insect	Insecticide and Formulation	Amount per 100 Gallons Water or as Specified	Comments
Commercial Ornamentals: Insect Control—Woody Ornamentals			
Whiteflies (cont.)			
	insecticidal soaps		See label for use instructions. REI-12 hours.
	lambda-cyhalothrin SCIMITAR CG and CS	1.5-5 fl. oz.	Lambda-cyhalothrin is a RESTRICTED USE pesticide. Scimitar CS is not registered for agricultural/nursery use. REI-24 hours.
	malathion Various formulations	See label.	REI-12 hours.
	neem oil TRIACT 70	1-2 gal.	REI-4 hours.
	novaluron PEDESTAL	6-8 fl.oz.	Resistance management restrictions. REI-12 hours.
	permethrin Various formulations	---	All permethrin formulations for outdoor nursery use are RESTRICTED USE pesticides. REI-12 hours.
	pymetrozine ENDEAVOR	---	REI-12 hours.
	pyrethrins PYRENONE	2-12 fl.oz.	REI-12 hours.
	pyriproxyfen DISTANCE IGR	8-12 fl. oz.	REI-12 hours.
	spiromesifen JUDO	2-4 fl. oz.	REI-12 hours.
	thiamethoxam FLAGSHIP	2-4 oz. Chemigation or Drench: 8 oz./A	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, it can be applied through chemigation systems. DO NOT exceed 8 ounces of Flagship per acre per year or crop, whichever is shorter. REI-12 hours.

2008IPM-1297B

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.

Issued in furtherance of Cooperative Extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, and other related acts, in cooperation with the U.S. Department of Agriculture. The Alabama Cooperative Extension System (Alabama A&M University and Auburn University) offers educational programs, materials, and equal opportunity employment to all people without regard to race, color, national origin, religion, sex, age, veteran status, or disability.

